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REMOTE STORAGE

CALIFORNIA CULTIVATOR

and **LIVESTOCK** and **DAIRY JOURNAL**

Los Angeles

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San Francisco

Vol. LV

July 3, 1920

No. 1

California's Agricultural Fair

THERE will be agricultural fairs held only in an even dozen of California's 58 counties. One of these, that in Sacramento County, is the state fair.

The state fair has become a California institution. It was once an institution similar to some 30 or 40 others held in practically every state in the Union, that is, a place where the ponies were the principal attraction and the well beaten path around under the grandstand indicated anything but a semi-arid climate or condition in which the state finds itself today.

Agriculture predominates; there are some feature attractions, but we believe there is no more true-to-name agricultural fair than that of our own state. The present board of directors, with George Roeding for president and Charles Payne for secretary, is doing some effective work. In making announcement of the coming fair, the board says:

"The people of California, in common with those of all our nation, are this year facing new and

constantly changing conditions. The aftermath of the world war brings lack of stability in all activities, while social and business unrest tax the best minds of the nation in search of relief. It is a situation that calls for sound judgment and forbearance. The immediate future is involved in a maze of doubt and uncertainty.

"Notwithstanding these circumstances there can be no question of the duty of California's citizens to proceed in the orderly and efficient way with their individual affairs, that in the aggregate the business of the many may attain success. The first requirement is to continue and to increase production. With a notable scarcity of labor for the field, farm or factory, the problems of the producer are multiplied, while the scope of his activities is limited. He must therefore aim to produce maximum results with such facilities as may be available. He must critically judge his own methods and results as compared with those of his associate or competitor, and from their common efforts evolve the system or procedure that will go farthest in human service." (Cont. on Page 11.)



Photo from model of California Fair Grounds at Sacramento. A model in perfect proportion, showing comparative size and location of buildings.

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California Cultivator

Vol. LV, No. 1

Los Angeles, July 3, 1920

One Dollar Yearly

California Citrus Convention

By Ernest Braunton

THE first summer session of the California Citrus Institute was held at Santa Ana, June 24 and 25. The attendance was more than 350 and the writer talked with members from Porterville, Tulare County, on the north, to Chula Vista, San Diego County and El Centro, Imperial County, on the south.

Aside from the two days' program fairly teeming with mental feasts, a goodly supper was served in the Elks' banquet hall on the evening of the first day. On the morning following the convention those who remained in Santa Ana were given a ride through the citrus belt of Orange County. Everything moved as smoothly as a ship behind the harbor bar, and too much praise cannot be bestowed upon the Orange County farm bureau which financed and managed the proceedings from the first blare of trumpets to the last tap of the drum.

The convention opened with an address of welcome by J. G. Mitchell,

at Riverside told me there was no necessity for an experiment station and that fertilizers were not needed, for the soils were inexhaustibly rich.

"But the question of fertilizing is worrying all of us today and no one knows the solution. Scientific men are badly at sea on the question. The experiment station staff can only tell what they know today. A year from now the tale may be quite different, the investigator constantly changes his views. The most striking change has come in the form of fertilizers. Eight years ago it was largely concentrates, but we now know we must have more organic matter. Our climate rapidly burns up humus and yet we must have it, for humus is a fundamental need. We now use all the organic matter possible to obtain.

More Dairies Needed

"We need more dairies and the production and conservation of all animal manures possible. Eight years ago I saw manure dumped in waste places in many parts of the state. Five years ago in Tulare County I saw alfalfa hay burned to get rid of it. There was no sale for it. Today it has a fertilizer value of \$18 a ton for the nitrogen content. In the past we have been getting heavy supplies of dairy manure from Imperial Valley, now the farmers there wish to use it. We still are getting some from Nevada.

"It may be that we must grow native leguminous plants of a perennial nature. In several parts of the state I see a rank growing yellow flowered lupine, *Lupinus arboreus*; it should prove useful. Other native lupines should be tried and of the nearly related astragali we have many. The melilotus is good but an annual. The action of organic material in the soil is slow, often requiring five or six years to show the effect. For quick action nitrate of soda is the best source of nitrogen, but alone will not do. We must also have organic nitrogen, especially on some soils where too much alkalinity is already present. On light sandy soils nitrate of soda may be freely used.

New Oranges Needed

"Varieties of oranges is one of our most important matters; we need improved ones. The Navel, augmented by the Valencia, is fine, but neither is of the best; neither is good enough. The Navel fruit is fine but the tree is a poor one, weak in many respects and easily affected by many ills and not so good as the Valencia tree. But, on the other hand, the Valencia fruit is not good enough. It is one per cent lower in both sugar and acid than the Navel. Give us a better Navel tree and a better Valencia fruit. Plant breeders and farmers can solve the problem. Do more experimental work. Work for improvement. Every orchardist should have a corner for carefully cross-bred seedlings. You may be the man to give us a new and better orange. Keep at it. This new institute is a grand thing; the ex-

perimental needs are not supplied by our station; you all may aid in the work. I sincerely regret leaving California; should any of you visit South Carolina I shall be pleased to have you come to see me. I bid you all farewell."

Care of Orange Groves

Professor R. S. Vaile of Riverside experiment station then spoke on the general question of care of mature orange groves by telling of results obtained in pruning, fertilizing and soil handling at the Arlington experimental grove, a synopsis of which follows:

"In new root growth we find the fibrous roots at from three to 20 inches below the surface. The orange tree is a surface feeder. In the tropics all are surface rooters. In Mesopotamia the soil is mulched with palm leaves, grass and other material to keep the upper soil cool and moist. Any sys-

the manured plats still look best and give the most promise. While stable manure gives best permanent results it should be plowed in deeply. The cover crop's chief value at once is in nitrogen added but its influence lasts. We found deep plowing generally beneficial. Summer cover cropped plats were not better than manured plats. In pruning over a five year period we found moderately pruned trees yielded much better than heavily pruned trees. We found it best to plow deeply in early spring, before season's growth starts."

Pruning and Fertilizing

The next paper presented was on pruning matured orange trees, by Robert W. Hodgson, farm adviser of Los Angeles County, but who is still instructor of citriculture at the state college of agriculture. A brief synopsis of Mr. Hodgson's paper was given in the Cultivator of June 26, in reporting a pruning demonstration on lemon trees at Whittier, and the full paper will be given later.



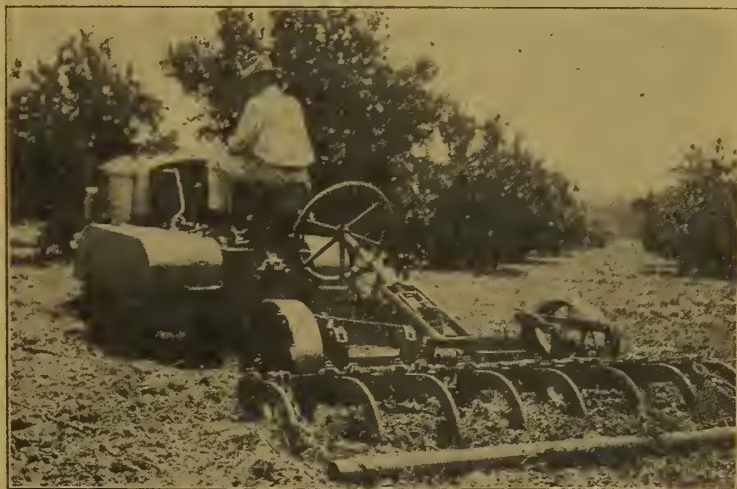
Dr. Herbert J. Webber

His last photo in California, snapped by the Cultivator man at the Citrus Institute, Santa Ana. Dr. Webber left for South Carolina, July 1.

mayor of Santa Ana, who assured the visitors of royal entertainment among "the people of Orange County, the best people on earth." A brief response was made by Dr. J. T. Barrett, the president of the Institute, who recounted the various movements looking to the organization, the aims, purposes and hopes of the Institute. He then introduced the first speaker of the program,

Dr. Herbert J. Webber

Dr. Webber said: "As I am leaving for my new South Carolina home one week from today, I shall take the liberty of discussing the whole citrus question rather than confine myself to the specific subject assigned me. When I came here eight years ago one of the most prominent orange growers



Breaking Plowsole on C. C. Chapman Ranch

Repeated diskings forms a plowsole at four or five inches. This chisel-tooth cultivator is running seven inches to break it up. Harrowing will follow.

tem of soil management that encourages root growth is right. At Riverside orange trees 25 to 30 years old had to be rejuvenated and have been rejuvenated, though they have received sufficient fertilizer throughout their entire life. The condition was due to poor physical condition of the soil.

"During six years previous to the 1913 freeze the trees had yielded well. Following the freeze they produced but one-fourth box to the tree. The best results came from immediately available fertilizer; no other treatment yielded anything the first year. The five years following showed the value of nitrogenous fertilizer. During the second year the mulched plats showed greatest improvement, for trees improved in all ways. But permanent mulch was finally productive of mottling and plats were deeply plowed.

"The manured or fertilized plats were better in all respects, and stable manure was as good as any but for three years showed little gain. For several years the chemically fertilized plats gave as good results as those given stable manure and the cost of fertilizing was less. But in the end

The first speaker of the afternoon was H. F. Pressey, assistant manager Rancho Sespe, Sespe, Ventura County, on "Cultural Methods With Light Soils." Mr. Pressy said:

"I shall speak to you of our three main factors in orange culture—irrigation, cultivation, fertilization. The distance between pipe lines must not be excessive. On one 30 acres we have them 150 feet apart on a grade of one per cent. On silt soil we run the water 48 hours. We have found this water to go down 12 feet, and in our walnut orchard the roots are at that depth. We give five such irrigations each season. On gravelly soil we run the water but 24 hours and give seven irrigations. We make our first spring run in April but we use shovel and auger at all times to determine soil conditions. We usually use eight acre-inches at each irrigation.

"We plow early, in January and February, occasionally as late as March. A keen outlook should be kept that orchards are not needing water at that critical period when they are making their heaviest growth. We irrigate as close to the tree as we can, first run-

(Continued on Page 14.)

Agricultural News Notes of the Pacific Coast

Northern California

San Leandro held a cherry festival Saturday, June 26.

Shortage of baling wire in some haying sections is delaying work.

Sutter County reports sales of soda dipped raisins at 20 cents per pound.

The Chico mill of the Sperry Company has installed a paddy machine.

Gridley, Butte County, now has a paved street connecting with the state highway.

Yuba County has an ordinance limiting loads of trucks on her highways to 17,000 pounds.

It has been decided to consolidate the Sonoma and Marin County cow testing associations.

Light showers fell in Butte County the middle of June. No damage reported by grain and hay farmers.

Manager Dunlap of the California Prune and Apricot Growers Association says that \$90 a ton is being offered for apricots in many sections.

Cattlemen who have stock running on ranges in the Plumas national forest say that the grazing has been greatly improved by recent showers.

A meeting of the alfalfa growers of Butte County was held at the state land colony at Durham on June 16. Marketing problems were discussed.

The first carload of deciduous fruit from the Delta district was sent from Walnut Grove on June 16. It was a mixed car of plums, peaches and pears.

The state immigration and housing commission interprets the law as to labor camps to apply to any building or tent in which five or more men are housed.

The first sale of hogs held by the Glenn County Hog Growers Association was a big success. Five cars were sold at Willows and one car at Maxwell.

A delegation of poultrymen from Petaluma has petitioned the Sonoma County supervisors to aid in establishing a poultry pathologist and laboratory at Petaluma.

Superintendent Rodgers of the Plumas national forest says that snow is heaped high in the Sierra Nevadas and that Sacramento Valley will have no water famine this year.

The Yuba County supervisors have passed an ordinance requiring all motor trucks operating in the county to carry a license of \$5 per ton per year, outside owners to pay \$25 per year.

The Central California Berry Growers Association is asking the state department of agriculture for a meeting to determine as to weights, measures and standardization of fruit and containers.

The state highway commission has assured the Sutter County chamber of commerce that the portion of the Lake Tahoe-Ukiah state highway passing through Sutter County will be built immediately.

The board of trustees of Antioch has filed an injunction suit to restrain rice growers from using waters of the Sacramento River. The reason for the suit is that the lower delta people claim when the waters are all lifted from the upper river the tide brings in salt water until the productivity of the lower delta lands is destroyed.

Central California

Tulare County has ruled that all dogs shall be muzzled.

Turlock reports a freak June shower which netted only two-tenths of an inch. •

A new buttermilk condensing plant is being built at Hanford, Kings County.

The Merced County farm bureau has instituted a cooperative marketing association.

The Terra Bella district of Tulare County reports a big crop of apricots, almonds and peaches.

The Stevinson colony at Merced has petitioned to be included in the Merced irrigation district.

County Agent Jungerman of Stanislaus announces a farm bureau hog auction sale on July 6 at Modesto.

The creameries at Tulare have been paying 63 and 63½ cents for butter fat and 66 cents for sweet cream.

Tulare Lake grain growing section is now in full harvest swing. The crop is running larger than anticipated.

The new cannery built at Reedley, Fresno County, is now operating. It has a capacity of 5,000 cases per day.

Fig sections report a shortage of Smyrna capri figs as late frosts in the fall destroyed many of the fig wasps.

Tulare County Grange recently held an all day meeting. The next meeting will be held Saturday of this week.

The San Joaquin Table Grape Growers Association held a meeting at Lodi on June 23 to discuss the marketing situation.

Professor R. D. Easton of the University of California has just finished a week's demonstration in poultry culling at Visalia.

Owing to the June rainfall vineyardists of the San Joaquin Valley were forced to give an additional sulphuring to prevent development of mildew.

Manager Niswander of the Fig Growers Association reports that the campaign to secure members is succeeding better even than was hoped.

Watsonville, Santa Cruz County, shipped its last carload of apples on June 14, bringing the total for the season up to 3,493 cars as against 2,473 in 1919.

The Fresno County chamber of commerce reports requests from an eastern firm to locate 75 carloads of wine grapes which may be purchased and shipped east.

The Tulare County Canning Peach Growers Association recently made a sale of 1,850 tons of freestones and clings at \$100 per ton for the clings and \$60 for frees.

Top prices at California farm bureau marketing association fat hog sales: Visalia, June 8, \$15.50; Tulare, \$15.75; Hanford, June 10, \$15.40; Corcoran, June 11, \$16.20; McFarland, June 12, \$15.65.

Fig growers of the San Joaquin Valley are signing up with the California Peach Association. Fresno has signed up 1,362 acres, Fowler 700, Selma 1,275, Kingsburg 3,000, Kings County 1,900, Tulare County 400.

Officials of the California Farmers Union, headquarters at Modesto, will attend the Democratic convention at Sacramento and urge a plank in the platform pledging larger support to cooperative farm operations.

Southern California

Yucaipa celebrated June 12-20 as Cherry Week.

Anaheim walnut growers report prospects for light walnut crop.

San Bernardino canneries are now handling apricots from the Banning district.

It is reported that the Apricot Growers Association will set prices about July 14.

The tomato season has finished at Brawley. Prices are reported not so good as last year.

The boys' and girls' pig club at Harper, Orange County, will close its contest on July 10.

Orange County apricot growers report practically no offers from independent buyers or from canneries.

An effort is being made to organize the onion growers of the Coachella Valley into a marketing association.

The chamber of commerce of Perris, Riverside County, is discussing the need of a cooperative gin at that center.

Cotton growing members of the Imperial County farm bureau are organizing a cooperative marketing association.

According to an Ontario paper, S. J. Ulrey has received check for \$4,752 in payment for 613 sacks of White Rose potatoes.

Sixty-five thousand sacks of beans have been cleaned by the warehouse at Smeltzer, Orange County. It is now closed for the season.

Apricot drying camps are operating in Orange County and growers say that they are not experiencing any difficulty in getting help.

Members of the Claremont Pomological Club attended sessions of the citrus institute at Santa Ana on Thursday and Friday of last week.

Orange County growers report that they are shipping potatoes to Northern and Eastern markets and netting \$7.00 to \$7.50 per hundred pounds.

The San Bernardino County farm bureau has taken up seriously the question of enforcing laws against heavy trucking over expensive roads.

The farm bureau of Imperial County has elected R. H. Clark president. The bureau also has a new adviser in E. L. Garthwaite who took up his work July 1.

The Harper farm center of the Orange County farm bureau has appointed a committee to arrange the county fair exhibits for the big fall event at Huntington Beach.

No regular farm bureau center meetings will be held in Orange County during July and August. Requests for special field demonstrations will however receive prompt attention.

The cannery of the California Growers Association at Riverside has opened on apricots. An interesting feature of last year's market was the shipment of 5,000 cans of apricots from this cannery to Iceland.

As an inducement for packers to stay the season out the packing houses on the San Joaquin ranch in Orange County are offering bonuses. The orange packing house will give one-half cent on the box, the lemon house one cent, payable at the end of the season.

The Coast and General

All the northwest states report a very cold and late spring, delaying growth in all farm crops.

Nevada's wool output this year is estimated at 8,000,000 pounds, which is one-fourth less than last year.

It is proposed to create a drainage district of approximately 22,000 acres southwest of Puyallup, Washington.

A model dairy is being established in connection with the Litchfield cotton plantation about 15 miles west of Phoenix.

One tractor dealer claims to have sold more than 200 tractors in the Salt River Valley of Arizona during the past year.

It is estimated that between 700 and 800 carloads of onions will be produced in the neighborhood of Walla Walla, Washington, this year.

The chick pea crop of Sonora, Mexico, is estimated to be worth \$6,000,000 this year. Most of this will be moved through the port of Nogales.

The last gap of the 25 mile concrete road between Bisbee and Douglas is now being completed. This will make the largest stretch of concrete road in Arizona.

The cantaloupe season in the Salt River Valley of Arizona will open up about June 25. A representative of the United States bureau of markets will be established in the chamber of commerce, Phoenix, to aid in marketing the crop.

W. S. Norveil, state water commissioner for Arizona, has just granted a permit to the Harrisburg Water Users Association for the use of water from the Centennial wash, Yuma County, for the irrigation of nearly 7,000 acres of land.

H. K. Holman Jr. of the United States department of agriculture, representing the warehouse investigation division, is spending some time in the Salt River Valley of Arizona with a view to acquainting the owners of warehouses with the practicability of bonding under the provisions of the warehouse act.

A revival of interest in manufacturing rubber and other products from ocotilla seems probable. Work was begun on a plant for the extraction of the gum from this variety of cacti near Salome, Arizona, just before the war, and was suspended owing to war conditions. It is now expected that work will go forward within a short time.

The United States land office has recently announced the opening of several small areas of land in Arizona. Filings upon it may be made July 14. A part of six townships in Coconino County, north of the Colorado River, are among those to be opened. A small area in Yavapai and another small area in Pima County are also opened up. As usual, ex-service men are given prior right on these filings.

A plan is being contemplated for the building of a road from Clifton, Arizona, to Springerville. This will pass through the White Mountain region, a section noted for its scenic wonders. This is something of a sportsman's paradise, as what is said to be the finest trout fishing in America is in the Black River. This road, if built, will be a cooperative arrangement between the county of Greenlee and the United States forestry service.



GEORGE SHIMA, the potato grower, likewise speculator, who, it was asserted a few months ago, speculated to the extent of securing a corner on California potatoes, has written an "Appeal to Justice," of which he sent us a copy. He says:

"As we listen to the passing storm of passion, of denunciation, of abuse and slander, we ask ourselves if we were mistaken in our belief in your honor, in our faith that you would not strip us of the protection of the common law of equity and deny us the equal protection of your laws.

"It is a painful question. We are few in numbers, defenseless except by the truth. You are a myriad in numbers and strong. You are taught at your altars to love your neighbors and that it is a scarlet sin to bear false witness against them. Surely you would not heed those who make business of spreading falsehoods about us, and urge you to persecute your peaceable, industrious and law abiding neighbors such as the Japanese.

"Our good opinion of you and your country may seem of little value to you. But it has been of great value to us. It has guided us on our hard march onward for the past 60 years. It was a march to which your land summoned us, with promise of peace and friendship at its end. If you listen to enemies of the world's good order, and deny us that promise which we have followed as a great light, how can you summon others to trust you?"

As to the "storm of passion" we feel that Mr. Shima has been misconstruing good American earnestness in a campaign of education for the Japanese and for the Eastern people who do not understand conditions in Cali-

fornia. Governor Stephens in a letter to Secretary of State Colby says:

"It is with great pride that I am able to state that the people of California have borne this situation and seen its developing menace with a patience and self restraint beyond all praise. California is proud to proclaim to the nation that despite this social situation her people have been guilty of no excesses and no indignities upon the Japanese within our borders. No outrage, no violence, no insult and no ignominy have been offered to the Japanese people within California."

Americans are doing simply what Japanese would do in case the perpetuity of their own race in their own land were at stake.

For instance, we understand Mr. Shima owns and occupies one of the finest residences in the city of Oakland. We also understand he is a most genial and cultured gentleman. Should the writer of these words appear at the door of that home with proper introduction we doubt not the doors would be opened and he would be bidden to enter; possibly he would be given the freedom of the home. But, presuming on the cordial welcome, if he should proceed to invite his friends and others to continue to come until the comfort and even the safety of the home should be jeopardized, how long would it be before Mr. Shima would withdraw his cordial welcome?

It is not a question of likes or dislikes; it is not a question of race su-

periority or inferiority; it is simply a question of whether California, a portion of the American nation, is to be used as a home for Japanese or Americans.

Americans gave most cordial welcome to the Japanese. We soon learned that the cordiality was being misconstrued by the Japanese and when they began sending for their picture brides and rearing Japanese children in whose names "as American citizens" title to lands were recorded, the time came for instant and vigorous action.

Governor Stephens has made a very strong statement of California's position, her attitude toward the Japanese and her determination to save California for the children of Californians and other Americans. We cannot quote in full. Here are extracts:

"It is also proper to state that I believe I speak the feelings of our people when I express to you a full recognition of the many admirable qualities of the Japanese people. We assume no arrogant superiority of race or culture over them. Their art, their literature, their philosophy, and, in recent years, their scientific attainments, have gained for them a respect from the white peoples in which we, who know them so well, fully share. We have learned to admire the brilliance of their art and the genius their people display. We respect that deep philosophy which flows so placidly out of that wonderful past of theirs and which has come down through ages that antedate our Christian era. We

join with the entire civilized world in our admiration of the tremendous strides which the Japanese nation itself has made in the last two generations, unparalleled as its career is in the history of nations. We respect the right of the Japanese to their true development and to the attainment of their destiny. All these matters I am at pains to emphasize so as to convince you, and, through you, the people of our United States, that this problem of ours is not an insignificant or temporary one. It is not factious. It has no origin in narrow race prejudice or rancor or hostility. It is, however, a solemn problem affecting our entire occidental civilization. It has nothing to do with any pretensions of race superiority but has vitality to do with race dissimilarity and unassimilability.

"But with all this, the people of California are determined to repress a developing Japanese community within our midst. They are determined to exhaust every power in their keeping to maintain this state for its own people. This determination is based fundamentally upon the ethnological impossibility of assimilating the Japanese people and the consequent alternative of increasing a population whose very race isolation must be fraught with the gravest consequences.

"California stands as an outpost on the western edge of occidental civilization. Her people are the sons or the followers of the Argonauts who wended their way westward over the plains of the Middle West, the Rocky Mountains and the desert; and here they set up their homes and planted their flags; and here, without them-

(Continued on Page 8.)

Manure or Cover Crops in the Orchard---Which?



CAN we maintain the soil of an orchard year after year during the life of the oldest orchard trees without the use of stable manure? The most contradictory answers come back, for the "Yes" and "No" are so emphatic, each trying to drown the other, that it is hard for the novice, seeking the truth

By C. B. Messenger

in the matter, to reach a definite conclusion. I believe the greater number of the orchardists who are keeping their orchards in most perfect producing condition are using manures. Note, I say, "manures" and do not include commercial fertilizers. The users of stable manures assert—and it appears to be the truth—that the application of highest priced fertilizers whose analysis shows the greatest content of plant food accomplishes little or nothing until physical condition of the soil is secured which favors assimilation by the plants of the chemicals which have been applied. This condition is not secured excepting through the presence in the soil of vegetable material, call it humus or what you will, which accelerates this chemical action.

Note I said "the greater number," but the other day I saw in an orchard trees, perhaps 20 years old or older, on which no stable manures whatever are applied. The orchard does receive a liberal dressing (25 pounds per tree) of commercial fertilizer in the spring of each year. This is usually one of the best "complete" commercial fertilizers, but in addition there is occasionally an application of nitrate of soda or sulphate of ammonia. Then, perhaps about the first of June, a seeding of Whip-poor-will cow peas is planted and the ground furrowed ready for the summer irrigation. It is irrigated thoroughly in these same furrows through the summer. The nature of the growth se-

cured through the orchard is shown in the first illustration on this page. This crop is worked into the soil, and in October, or by the first of November, a seeding of small horse beans is planted for the winter crop. This practice has been followed for 14 years without the application of an ounce of stable manure. This example is the orchard of Ed. L. Dreher and is in the eastern edge of Los Angeles County near Claremont.

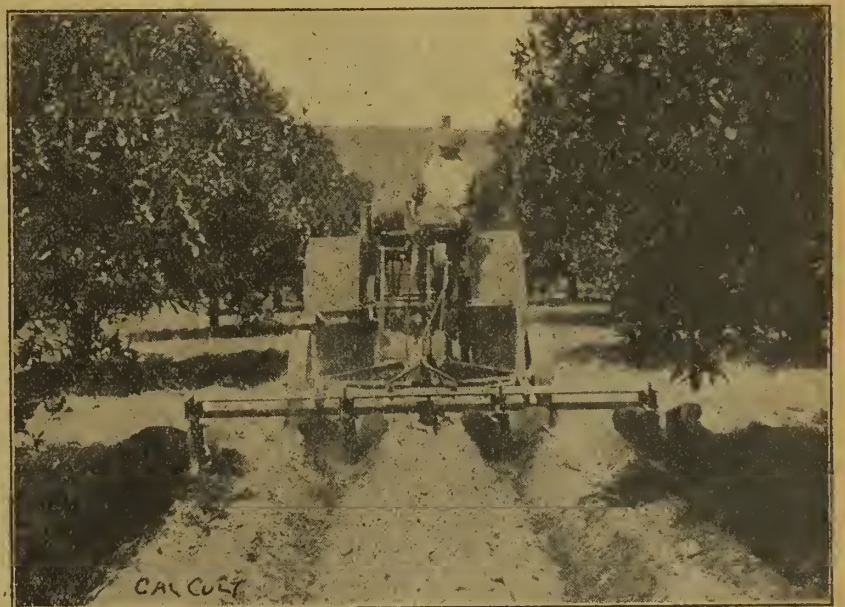
Mr. Dreher says he has used Melilotus indica but that in doing this the chick weed got so thick that it was impossible for the clover to grow. "I then tried horse beans and have not been sorry. Cow peas for summer and horse beans for winter are my favorites." Mr. Dreher has also tried Melilotus alba for a summer crop, but in bulk it is not to be compared to the cow peas. Vetches have never succeeded well as winter producers.

In some sections the methods followed by Mr. Dreher may be con-

(Continued on Page 8.)



Remarkable Growth of Cover Crop
Whip-poor-will cow peas showing 14 foot growth. Foreground also shows immense covering of soil made by this summer green manure crop.



Furrowing After Seeding Summer Cover Crop.

The ground is given thorough cultivation and irrigation. Seed is drilled in, then the four furrowers are placed behind and these furrows made and left during the entire season. As the crop begins to grow the flow of water is clogged somewhat, but care is taken that the furrows are deep enough to carry the water without any danger of breaking out. This is on the place of E. L. Dreher, near Claremont, Los Angeles County. Mr. Dreher driving tractor.

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Forty-third Year

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ON SAN FRANCISCO

The eyes of the world are on San Francisco this week. Democracy is being made perfectly safe. It's an interesting place to be. "We" are there. The hotel lobbies are full of us. The streets are full. Everybody—excepting the wets—are, or is, full of enthusiasm. We are jostling elbows with big ones. Just walked down (squeeze through) the Palace lobby and couldn't help coming against Daniels with Geo. Creel (we brushed Creel's dust off our coat at once), Burleson, Irvin Cobb, Meredith, Senator Reed, Bryan and others, great and near great. They just mix and say "Hello, Bill!" just the same as folks do. This is Sunday before the convention. They may not be mixing so much by the time these words are read. Of the bunch we like Meredith best.

MEREDITH

Secretary of Agriculture Meredith is some advertiser and we are not on his publicity staff. So this is not for political consumption.

The secretary is a farmer. He understands the problems. He is fighting for maintaining the efficiency of the department for the farmer. He scored, in an address at a luncheon tendered him by the Commercial Club,

Chamber of Commerce and California Tractor Association, the recent congress for reducing the funds needed in department work by nearly ten millions, and at same time continuing the congressional seed distribution fiasco.

There were enough opposing Republicans to have carried the measure through. There were opposing Democrats who could have carried it. The blame is equal on both parties.

In touching upon some of the reasons why the department should have fullest support by congress, by all the people, the secretary said:

"The department has in its employ some of the foremost scientists in the world who are giving their best, at meager salaries, to the government. The fight against the cotton boll weevil, the pink boll worm, the cattle tick, hog cholera, the foot and mouth diseases of cattle, which has cost the country millions of dollars, was made by the men of the department of agriculture.

"The department includes 17 bureaus—horticulture, quarantine, good roads, weather, pure food and drugs, meat inspection, county agents, plant diseases, insect pests, introduction of new plants, market and crop reporting, eradication of livestock diseases, protection of the forests and other similar activities.

"I want to point out some of the places that the department comes in contact with you. In the first place, realize this, that the industry the department of agriculture is designed especially to serve has an invested capital of over \$80,000,000,000. You can take all the railroads in America, all the manufacturing institutions—iron, steel and all the rest, some 75 other industries—add them all together and you will have just met the capital invested in this business of agriculture. The agricultural and livestock product last year was \$25,000,000,000, equal in one year to our national debt at the present time, one-half the wealth of France."

DOCTOR OF TREES

Tulare County claims credit because of being the first county of the United States to establish and maintain a plant pathologist with fully equipped laboratory. P. A. Bonquet is the pathologist in charge and is at the service of the orchardists of the county. In order to facilitate his work and reach a larger number of fruit growers Mr. Bonquet called a pathological congress at Porterville last week to "Stop plant diseases and save millions."

Some of Mr. Bonquet's prescriptions seem rather revolutionary, but on this we may all agree: If right soil conditions are maintained and nature's laws are followed in pruning and tree pests are subdued, there will be little occasion for calling the doctor.

The big one question is: "Is it well with your soil?" Right soil conditions permit constant nitrification—prosperity.

The learning of a rule like that is much simpler than was the learning of the six per cent interest rule, or even the multiplication table in our younger days.

GRAPES BURNED

The great central valley had just one day of scorching hot weather a few days since, but enough heat was concentrated in the one day to make up for many others a bit shy on calories.

The concentration was not acceptable to some fruits, especially plums and grapes. Some plums now have a nice big blister on one side. Others don't.

The raisin industry is suffering the greatest loss, however, in burned grapes. Muscats especially are injured, in some cases 20 per cent, more generally showing around ten per cent or less. The loss will not only be direct, but in addition the percentage of "clusters" will be reduced. The larger and finer bunches often have some of the biggest and finest grapes on one side cooked. These cooked berries now souring on the vine give an odor perceptible as one drives along the roadway, like unto that of the pomace pile at the winery.

Apricots, nearly ripe, have also been injured slightly. Some growers are salvaging apricots by harvesting injured fruit, cutting and drying. Those not harvested are soon past salvaging.

Both tree and vine in strong growing condition and with abundance of big leaves have had the advantage. Another argument for that "optimum condition."

Messrs. E. E. Kaufman of the bureau of markets and Fred Howard of the Associated are gathering a fund of information as to extent of loss.

A NOTHER INSECTARY

After Harry S. Smith's address before the Tulare County fruit growers at the pathological congress the question arose: "When do we get a branch of the insectary which will investigate our gray scale situation?"

Mr. Smith had outlined the work of the state insectary in biological control of insects. The state has central office and laboratories at Sacramento with branch at Alhambra and another in cooperation with the Limoneira orchards in Ventura County. He had given particular attention, with a large number of lantern slides, to the citrus mealy bug and its deadly enemy—and friend to man—the little "crypts," whose appetite requires several well fattened young mealy bugs daily. The story as told by Mr. Smith was intensely interesting, for in addition to the nature story interest, the profitableness in spending thousands and receiving millions is always of interest.

The cryptolemus has not yet shown the remarkable accomplishment of the vedalia on white scale something like a third of a century ago. He is more deliberate, but give him time.

Meantime Tulare citrus growers want somebody or some bug to chew up the gray scale. They want Harry Smith to take the contract. He's willing. He suggests, however, that the state legislature should take the first step.

FIGS VS. CHEMICALS

A subscriber of the Cultivator notes that the supply of figs seems to be greater than the demand this year, rather, there was crowding of the market and a severe lowering of the price. He is a fig consumer, not a producer, and maintains that the cause of this is that in curing of figs chemicals are used. Especially does he object to the use of sulphur, referring to a statement of one large grower that he sulphured his figs twice. Another grower "dipped" his figs in boiling water and allowed them to soak up their weight in water. This process doubled the farmer's crop.

This last charge will be a terrible shock to some fig producers, especial-

ly this year when rainfall has lessened our supply of water.

But, seriously, there is a desire on the part of the producer to process within the boundaries of California, the finest fig on earth. Anyone who has suggestions that are constructive will find the majority of our fig growers lending attentive ears. The wholesomeness of California figs when properly sulphured, dried and dipped in boiling brine for an instant is not gainsaid. The only suggestion given by our subscriber is that figs should be split in the middle and dried without any boiling water treatment after the drying.

FARMERS DEMAND PLANKS

Farmers are in San Francisco this week presenting their claims before a national convention. Other farmers appeared in Chicago and Senator Capper said:

"For the first time in the history of national political conventions agriculture has appeared before the builders of the platform with a program and the demand that recognition be given to the fundamental industry of the nation. It was a sane, clear cut, business like statement that the farmers presented to the committee on resolutions, and it was very apparent that the members were impressed. John A. McSparran of Lancaster, Pennsylvania, headed the committee representing 37 national organizations of farmers. The planks he presented may be taken, I think, as a clear statement of what the farmers of America will insist upon. The important thing to remember is that the whole agricultural problem is of greater importance to the city man than it is to the farmer. It calls for free, full and unquestioned right for competitive marketing of products and purchase of supplies; for effective national control over the packers and all other interstate combinations of capital engaged in the manufacturing and transportation of food."

Here are some of the planks which farmers urge the party to endorse:

We recognize agriculture as the fundamental industry, and we pledge ourselves to give it practical and adequate representation in the cabinet and in the appointment of governmental officials, and of commissions on a bi-partisan basis.

We pledge to all farmers the full, free and unquestioned right of cooperative marketing of their farm products and purchase of their supplies and protection against discrimination.

We pledge effective national control over the packers and all other great interstate combinations of capital engaged for profit in the manufacturing, transportation and distribution of food and other farm products, and farm supplies.

We pledge legislation that will effectively check and reduce the growth and evils of farm tenancy. We pledge the perpetuation and strengthening of the federal farm loan system, the improvement of facilities for loans on farm commodities, and the inauguration of a system for cooperative personal credit that will enable farmers to secure short time credit on more favorable terms.

We pledge comprehensive studies of farm production costs, at home and abroad, and the uncensored publication of facts found in such studies.

We pledge ourselves to accord agriculture the same consideration in tariff legislation as is accorded to other interests.



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"Even slight jars bruise peaches—pneumatics protect them. My trucks on Goodyear Cord Tires help all my farming, which is largely motorized. These trucks go through the sandy loam of the fields to feed the machines and haul from them—solid-tired trucks cannot do this."
—W. W. Lowe, Farmer, Fruit Grower and Stock Raiser, Byron, Georgia

BETWEEN the lines of statements like this, one reads the narrative of a significant advance in farming methods effected with power machinery and trucks on Goodyear Cord Tires.

The labor shortage is being met on many farms by these pneumatic-tired trucks working with motorized pumping, shelling, grinding, cutting and threshing machines.

Since it usually is not practical to follow the field activities by moving such outfits along, their operation, to be fully efficient, must depend on quick cartage over soft ground.

The solid tire is not fitted for this hauling, because it stalls in loose soil, whereas the big Goodyear Cord Tires supply the traction necessary in off-the-road hauling.

Their immense strength proceeds from that manufacturing care which, in protecting our good name, has developed the sinewy toughness of their Goodyear Cord construction.

Farmers' reports, showing how pneumatics on trucks help increase farm incomes, can be obtained by writing to The Goodyear Tire & Rubber Company, Akron, Ohio.

GOODYEAR

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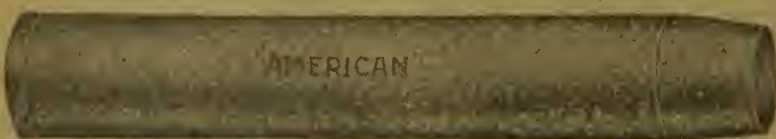
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When Writing Advertisers Mention California Cultivator

AN APPEAL TO JUSTICE

(Continued from Page 5.)

selves recognizing it at the time, they took the farthest westward step that the white man can take. From our shores roll the waters of the Pacific. From our coast the mind's eye takes its gaze and sees on the other shores of that great ocean the teeming millions of the Orient, with its institutions running their roots into the most venerable antiquity, its own inherited philosophy and standards of life, its own peculiar races and colors.

"The Pacific, we feel, is shortly to become one of the most important highways of commerce on this earth. Amity and concord and that interchange of material goods, as well as ideas which such facilities offer will inevitably take place to the benefit of both continents. But that our white stock will readily intermix with the yellow strains of Asia, and that out of this inter-relationship shall be born a new composite human being is manifestly impossible. Singularly enough, while historical facts are not always susceptible of scientific demonstration, it is true, if our study serves us, that the blood fusion of the Occident and the Orient has nowhere ever successfully taken place. Whether the cause be but a social sense of repugnance, or whether it be insuperable scientific hindrances, is utterly beside the question. We stand today at this point of western contact with the Orient, just as the Greeks who settled in Asia Minor 3,000 years ago stood at its eastern point. And while Mesopotamia and the country to the east thereof were the highways of intercourse between the Orient of that time and the Occident of that era, and while, historically, there was much of contact and conflict between the types representing the two standards of civilization, history does not show any material fusion of either blood or idea between these peoples."

More Than 100,000 Japanese in California

From a statement issued by McClatchy of the Sacramento Bee, we quote:

"From L. E. Ross, registrar of vital statistics of the California state board of health have been obtained his latest birth and population statistics for California, covering the year ending December 31, 1919, which are presented in the table below. The figures for population (total, and total except Japanese) are estimated from data not yet available to the public. The total Japanese population is an estimate based on data secured by the state board of control and advance census data, none of which has yet been given to the public.

	Population	Birth rate
		Per M.
Total	3,234,209	56,521
Total, except Japanese	3,138,209	52,063
White	96,000	4,458
Japanese		46.44
Other than Whites and Japanese (Chinese, Negroes and Indians)		747

"The figures on analysis point to a number of interesting and significant conclusions.

"In the first place, while the Japanese Association of America, Sidney L. Gulich, and his Pacific colleague, Col. John P. Irish, have insisted that the total Japanese population of California does not exceed 70,000, and have ridiculed me for declaring—as I have for a year past—that there was good reason to believe the number was about 100,000, the registrar of the state board of health, because of reports from the census office and investigation made by the state board of control under instruction of the California legislature, now estimates that population at 96,000. It must be remembered in this connection that this estimate probably is too low because of the evident attempt of the Japanese to avoid full tally in the census enumeration, the reason for which will appear later in this article. That attempt was so apparent that recount of Japanese was ordered in several districts of California. In the only one in which the result has been made public—San Diego County—there were found 1,200 Japanese instead of the 800 turned in by them on the first enumeration—an increase of 50 per cent. That same percentage, if it obtains throughout the state, would raise

the Japanese estimate of population, 70,000 to 105,000. It is evident, too, that in some places the recount has been ineffective, as it is comparatively easy, under the existing system, even for American citizens to avoid enumeration or miss it unintentionally. In the case of aliens, particularly, there should be a system of registration, calling for possession of a card on the part of each alien.

"Next note that the Japanese, with one thirty-third of the population, produce one-twelfth as many births as all other races combined, including the whites; that is to say, the Japanese birth rate per thousand is almost three times as great as that of all the other races in California combined, the respective birth rates being 16.59 and 46.44.

"The birth rate accorded the Japanese by the board of health, in the past and quoted by myself, is much higher—62 or 64 per thousand—four times that of the whites, due to the fact that the Japanese estimate of population, 70,000, was accepted by the board as approximately correct.

"The birth rate now established—three times as great as the whites, when considered in conjunction with the fact that the present proportion of females to males among the Japanese is only one to four, which proportion is being steadily increased, while the proportion among whites is one to one, makes a problem sufficiently grave.

"How long will it take a prolific, hardy race like the Japanese, with only one-thirtieth of the number of the white race in California, but with a birth rate three times as great, and with the avowed determination to establish themselves through racial increase and control of land, to surpass the white race in numbers? And if they increase the proportion of females to one to two, instead of one to four, how much less time will it take? In Hawaii, already more than 50 per cent. of all children born, and of all new school registrations, are Japanese. How long will it take to produce that result in California, then in other states, and finally in the Union, if the fecundity of the Japanese is aided by continued immigration?

"Note that the total number of white births in California in 1919 was 51,316. Of births other than white there were 5,205, and of that number 4,458 were Japanese, and the balance, 747, divided among all the other races represented, Chinese, Negroes, Indians, etc. That is to say, among the races other than white in California the Japanese are furnishing six times as many births as all the others combined! In 1908, after adoption of the gentlemen's agreement, the Japanese births numbered 455. Their annual births have multiplied since then ten fold, and still steadily increase. Does that furnish food for reflection to Americans who realize the danger from an overwhelming flood of a non-assimilable race, superior in economic competition?"

MANURE OR COVER CROPS IN THE ORCHARD—WHICH?

(Continued from Page 5.)

sidered the only ones which will save the orchard to profitable productivity. Many an orchard in California is entirely beyond the reach of stable manure. Bean straw and even baled alfalfa hay have been purchased by some orchardists to make up for the lack of wealth producing vegetable matter in the soil, but present day prices of hay or even straw put them entirely beyond possibility as soil restorers. The methods described above are least costly and are certainly effective if rich, deep green, glossy foliage and trees filled with young fruit are any indication of a profit producing orchard.

On the subject of green manure crops in California the department of agriculture issued some years ago a bulletin touching methods followed at that time. In the introduction Mr. McKee, the author says:

The use of green manure crops for the maintenance of soil fertility is one of the oldest of agricultural practices. In California such crops have been used in a limited way for a long time, yet it is only within recent years that their practical value has become fully recognized. The growing of these crops has attained its greatest development in the citrus orchards of the southern part of the



Puzzle: Find the Man in the Picture

Not quite a six footer, but a full size man is standing in the horse beans which show a growth of five feet. This is a winter cover crop planted October 29, 1919. This picture taken March 11, 1920.

state where they have been longest used.

As far back as the early nineties some of the more progressive orchardists were beginning to realize the necessity of some such practice as green manuring and to this end utilized the natural growth of bur clover and other weeds, such as alfalfa, brome grasses, etc. The Canada field pea was the first of the legumes to be used extensively as a green manure crop and by 1900 it was being quite generally grown in the citrus orchards of the southern part of the state. Common vetch and bur clover were also being utilized at this time.

In many parts of California green manure crops have not been used to any extent, but not entirely without reason. That their use can be made much more general than at present is quite certain, and as their value is more fully appreciated and their adaptation to the various sections demonstrated their use will be proportionately increased.

In closing he make the following summary:

California soils, though often very fertile, are generally deficient in humus.

Within recent years green manure crops in California have been given special attention.

The only places where green manures are being used extensively are the citrus and walnut orchards of the southern part of the state.

Deciduous orchard sections are using practically no green manure crop.

By the use of green manures a generally improved condition of orchards has been secured, as shown by a more healthy appearance of the trees and more and better fruit.

The early seeding of green manure crops is desirable for obtaining the best results.

Green manures should be turned under before the trees start new growth in the spring.

Heavier seeding than is ordinarily practiced is advised.

Common vetch and field peas are the most generally used green manure crops, the vetch being the most popular.

Peas or common vetch sown in the fall without irrigation will not, except in the most favorable years, make sufficient growth to be turned under early as a green manure, but when thus sown will make a good growth later in the spring.

Field peas, common vetch and bur clover are adapted to quite varied conditions, and are being grown in a limited way throughout the state.

In any part of the state having a mild winter a green manure crop of peas or common vetch will succeed if sown early in the fall with irrigation.

Bur clover seems to be of most value for deciduous orchard conditions, while the woolly podded vetch promises to be of value for the same conditions.

Fenugreek and bur clover are used to a limited extent, fenugreek being especially adapted to the region near the coast.

Hairy vetch is not well adapted for use as a green manure crop in California.

Black bitter vetch, black purple vetch, woolly podded vetch, horse

beans and the Tangier pea are promising new green manure crops in comparison with common vetch.

Green manure crops need no inoculation in California, horse beans in the northern portion being the only known exception.



Cow Peas Just Beginning to Come Up

This shows the method of leaving the furrows. This photograph was taken with the California Cultivator camera and unfortunately at high noon. The sun was shining so directly into the furrows that the small check dams show imperfectly. Lines have been drawn to indicate their location. This photograph was taken at the lower end of the furrows. The checks are intended to hold waste water. Back of where Mr. DeCamp is standing the furrows are straight and have no check dams.

The growing of a summer green manure crop in California orchards is not advisable.

Local as well as sectional conditions

in the various parts of the state vary considerably, and must be taken into consideration in determining the best crop for green manure as well as the

Fairbanks-Morse "Z" Farm Engines

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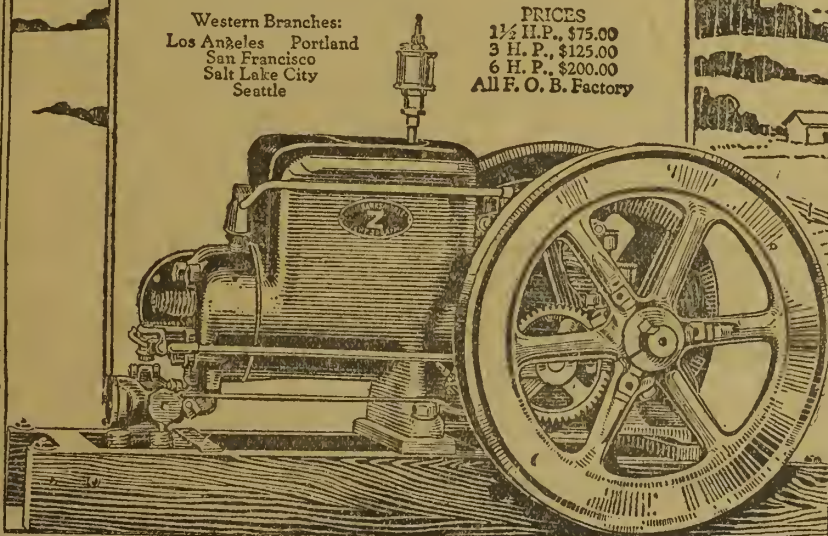
is king now that distillate is gone. It gives the same power, gallon for gallon, as gasoline, when used in the "Z" farm engine. Kerosene is the fuel for which this engine is designed. One of the many reasons why more than 250,000 farmers prefer this engine.

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The two together—tractor and leveler—will level from 15 to 40 acres per day. Two men handle the outfit. The work is done better and more quickly than with any other animal or tractor-drawn leveling equipment, and at far less cost.

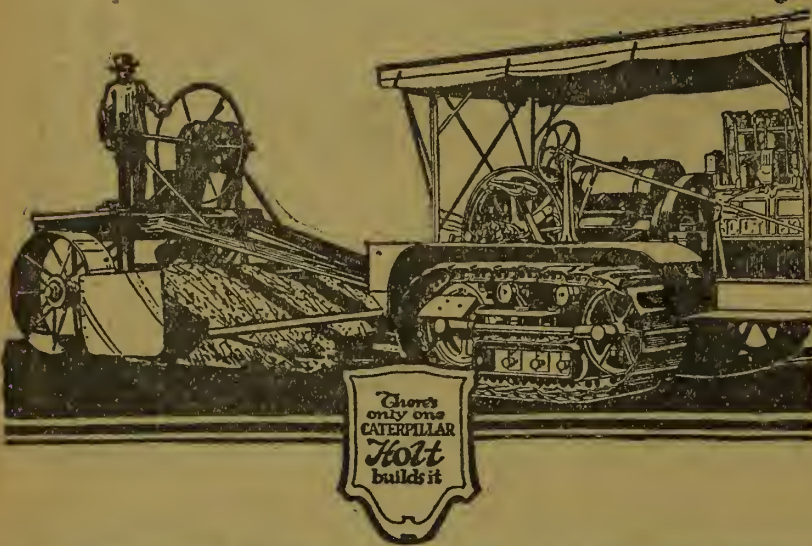
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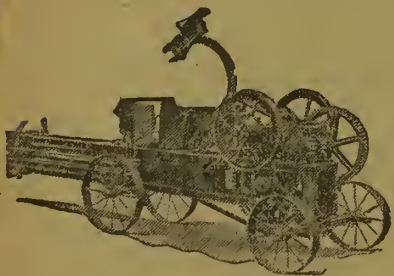
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best method of handling the same. I take exception to the third from the last of Mr. McKee's conclusions, "Green manure crops need no inoculation in California." I do not say that this is not the case, but I do believe that with the slight cost of nitrifying bacteria, at first planting at least I would always make application. There can be no harm; there may be benefit.

HANDLING VEGETABLES

The California Vegetable Union, now handling some 5,000 cars of California

vegetables, finds it wise to get its various district managers to talk shop and have a social time. At a recent banquet at the L. A. Athletic Club, over 40 representatives of the big Union from Sacramento to Imperial gathered and filled themselves with new ideas and things.

The American Association of Nurserymen, a thousand strong, is meeting in Chicago this week. California is represented by George C. Goeding.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

June Bugs

I am sending a sample of a bug which has been doing a great deal of damage to our plum and prune trees which were planted this spring. This bug is found in the ground at the base of the tree through the day and it eats the leaves at night. We have just sprayed the tree with a solution of arsenate of lead, and there are lots of bugs falling to the ground and dying. Will this spray injure the young trees in any way, and will it be necessary to spray often? Would like to know the name of this bug and whether it will be apt to work on the other fruit trees. In our orchard we have also apple, pear, peach, apricot and cherry trees.—Subscriber, Fallbrook.

The bug which accompanied the letter had ceased to be a bug so emphatically that it was but little more than a brown spot on the letter. However, there were one or two portions which indicated that they might belong to the back of a healthy June bug, sometimes called May beetle. The attack of these pests is usually short-lived, and one application of an arsenate spray is usually sufficient to control them. Use four pounds of neutral arsenate of lead to 50 gallons water.

Ticks in Dog's Ears

Sometime ago you told us to try coal oil to kill the ticks in the stock's ears and to let you know how it worked. We put a teaspoon of coal oil in each ear and it did the work all right, but we have to repeat it about once a month, as the ticks seem bad here. We used the coal oil in the cat's and dog's ears with equal success and it does not seem to affect their hearing at all. We enjoy the Cultivator very much.—T. H. Toombs, Inyokern.

Curl Leaf

It occurs to me that some of your readers may be interested in an experiment I tried with "curl leaf" on my peach trees last year. I had failed to spray them at the proper time. When the "curl leaf" made its appearance I began pulling off the affected leaves and kept this up until it all disappeared, and saved all my peaches.—W. P. Russell, Claremont.

Avocados for Budding

The writer has tried to raise some avocado trees for budding. He planted hardy Mexican seeds in gallon cans. The seeds grew thriftily for several months, but finally the young trees began to fail and most of them died before fall. The trees were kept in partial shade and I think were watered sufficiently. The soil in the cans was a little heavy. Budded trees that I have purchased from the nursery were grown in redwood boxes holding less than a gallon of soil. Can you tell me what to do to grow these trees for budding?—Subscriber, Visalia.

The writer has grown many seedling avocados, of many sorts, in gallon cans, and has never lost any ex-

cept through lack of water. The young succulent plants need much moisture in hot weather. A better plan would be to plant seeds in the ground, protect them with a cover during the frosty period and dig the budded plants as balled trees. You will get superior stock in this way.

Cheap Paint from Cheap Oils

As you invite us to send in questions, I would like to ask you if transformer oil is good to make paint for buildings.—Subscriber, Inyokern.

We hardly think this oil would in any sense take the place of good linseed oil, but it is very probable that, reduced with a small portion of kerosene in some pigment like ochre, Prince's metallic or burnt umber, mixed to give body, this would make a very good paint for outbuildings or fences. Have our subscribers ever tried paint made from these refuse oils?

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Cows Break Through Fence

A has cows which break through the fence on B's place and do damage to growing crops. A refuses to pay the damages. How must B proceed to collect? Can he hold A's cows until the damage is settled?—Subscriber, Buena Park.

Where land is planted to growing crops, vines, fruit trees, or vegetables and entirely enclosed by a substantial fence or other enclosure, the owner or person in lawful possession of the land is entitled to recover by action in a court from the owner or person in possession of a trespassing animal actual damages sustained by reason of such trespass. He may have issued attachment process upon such animals, and for that purpose is not required to file affidavit of attachment, but such process shall issue upon filing his verified complaint. No animal is exempt from attachment or execution to satisfy a judgment which may be rendered against the owner of such animal for trespass committed by such animal.

School Attendance

My son is 15 years of age and has successfully passed the grammar grades. May I keep him out of school for a year and then continue?—Subscriber, Fallbrook.

The compulsory attendance law provides that children between the ages of eight and 18 years must be sent to public school during the time such public school shall be in session, with certain exceptions, in case affidavit is made that the child is attending private school or is unable by physical disability to attend school or that no public school is located within two miles. A further provision is that the child is exempt from compulsory attendance if he has completed the prescribed grammar school course, so that even a child younger than 15 years, if he has completed the prescribed course, is not subject to the compulsory attendance law.

Responsibility for Minor

We took an infant child who is now over 17. He has left our home and

gone to work for himself, keeping his own earnings. His father is still alive. In case he should contract debts or cause himself to be sued are we responsible for such debts?—Subscriber.

The child himself is only responsible for debts incurred for necessities of life. All other debts he may disaffirm with certain restrictions. The parent is responsible for the necessities of life furnished to the child, supplied in good faith by a third person, except where the child has abandoned the parent without just cause. In no case would it seem, where parties have merely taken the child into their home, would they be liable for the support of that child or debts incurred by him.

Pests on Land

Is there any law compelling owners to get rid of squirrels and gophers on their properties? Owner of land adjoining mine makes no attempt to trap or poison them. I am having continual trouble. They have already killed about two dozen of my young orange trees.—Subscriber, Rialto.

Under section 2322-A of the political code it is made the duty of the county horticultural commissioner in each county, whenever he shall deem it necessary, to cause an inspection to be made of any premises, and if found to be infested with animal pests injurious to trees he shall in writing notify the owner or person in charge that the same are infested and require such person to eradicate, destroy or control such pests to the satisfaction of the commissioner. Such notices may be served by any person in the same manner as a summons in a civil action, or by posting in a conspicuous place upon the premises and mailing copy to the owner at his last known address, if there is no one caring for the property. The section provides that orchards and premises infested with squirrels, gophers, or other destructive animals are a public nuisance, and after notice has been served and such nuisance has not been abated within the time specified in the notice, it is made the duty of the county horticultural commissioner to cause such nuisances to be at once abated by destroying the pests. The expense thereof is made a county charge, which the board of supervisors shall allow and pay and which shall thereupon become a lien upon the premises from which said nuisance has been removed; the property is made subject to the payment of such expenses together with the costs of action, which lien is prior to any lien upon the property except taxes.

CALIFORNIA'S AGRICULTURAL FAIR

(Continued from Cover).

The state maintains in the southern end of the state, at Los Angeles, a permanent exposition on the old Sixth District agricultural fair grounds. This exhibit is becoming one of the finest of its kind on earth. We have never seen anyone who claimed to have seen either in world's exposition or elsewhere, any exhibition of a state's resources better shown than are those in this permanent state building. This is the result of an intensive study by the management of the southern exposition. Hence, when President Roeding wished to visualize his dream and the dream of the board of directors as to the future of the state fair grounds at Sacramento, he asked the management of the southern exposition to create a model from the drawings of the architects. This model, in exact proportions, has been worked out under the immediate direction of Mr. Fowler, and W. N. Harris, acting manager. It is now at the exposition grounds at Los Angeles, but will later be at the state fair, and its perfection is worth a trip to the state fair to see.

The directors are dreaming of real things and laying plans for the working out of a great state exposition setting. It may be years before this dream is completed. It will be noted that the old tower, now so prominent, will give way to more attractive buildings and a quad effect will be secured by the erection of long buildings on either side the approach from the entrance to the great horticultural building already occupying the center of the grounds. The fireproof Woman's Building, already erected, is also a part of the permanent scheme.

June in the Vegetable Garden

Southern California

By D. F. Reichard



JULY is generally considered harvest month in California, but for the home gardener it is one of the big planting months, too. Those who have had a spring garden and are now and have been reaping its benefits in fresh vegetables are the ones who are most enthusiastic about a fall and winter garden.

To start a new garden at this time a thorough soaking of the soil before weeds and stubble is cleaned off or plowed under will be necessary. The water soaks in better with litter on the ground. If it is the spring garden you are getting ready to plant over, soak it by running the water in fur-

rows or by making checks as large as your water will fill without waste. As soon as the ground will work up nicely, break it up to a depth of ten or 12 inches and thoroughly pulverize. If your ground is handled properly there should be enough moisture to bring up seeds you plant without any further watering, but if the soil is too dry it is advisable to run furrows where the rows are to be and irrigate; then cultivate the furrow in and plant the seed. Do not plant seed in dry ground and then expect them to come up. Thoroughly wet and cultivate the ground, then plant the seed and they will be well up before any more watering will be necessary.

Seed and plants put out in the late afternoon get a better start than when planted in the heat of the day.

Plant for succession Kentucky Wonder and Stringless Green Pod beans; sweet corn; Eclipse beets; carrots; Iceberg lettuce; early radishes; Long Standing spinach. The later part of July, turnips, fall peas and white and red rose potatoes should be planted. Early in the month melons and casabas, as well as cucumbers and summer and winter squash may be planted and good results obtained. Sow seed of cabbage, cauliflower, Brussels sprouts, kale and Swiss chard for fall plantings.

Keep a close lookout for aphids and mildew and rust on your plants. Spray with nicotine extract for the former and Bordeaux mixture for the latter.

Use water and cultivator freely on all growing crops.

Vegetable planting calendar for Northern California and Southern Arizona on next page.

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Northern California

By A. R. Gould



HERE space and water are not limited there should always be enough vegetables grown to store as a surplus in these days of high cost of living. Much of the surplus in the way of root crops such as beets, turnips, parsnips, onions, carrots and potatoes can be easily stored away in the cellar or may even be placed in beds made up outside. These root crops can be covered in dry sand or soil with the exception of onions which should be hung up. Squash and pumpkins are easily stored on shelves in the cellar and will keep for months. Peas and beans will also, of course, be valuable if stored in boxes, but it is always advisable to treat these by fumigating with carbon bisulphide to destroy any weevils which may cause trouble. As the various crops are ready to harvest, place them in storage and at once prepare the ground for further use.

The slight rains experienced last month were welcome to the gardener and helped some. It will be necessary to be on the watch for aphids in the vegetable garden, also the corn moth or ear worm. This last named pest is best destroyed by dusting with lead arsenate on the new silk, as it appears, and nicotine extract.

Onions

Keep this crop well irrigated and the cultivator busy between the rows. Some varieties will be ready to harvest. When the tops turn yellow and fall over they are ripe enough to handle, and care should be taken not to bruise them or they will not keep. After being dug, allow them to remain on the ground for a few days to dry out after which they may be tied together and hung up. Keep them in a cool place. Most of the main crop varieties will not be ready to harvest until next month or even September.

Cauliflower

If seed of this was sown last month as advised, sturdy plants should be ready to plant out towards the middle of this month or plants can usually be secured of the best varieties. Plant them in shallow trenches which should be previously watered. They

should be at least one and one-half feet apart.

Beans

Continue to sow for succession Golden Wax, Stringless Green Pod and Canadian Wonder. Keep those sown last month well cultivated to retain moisture.

Corn

Sow sweet corn varieties; Golden Cream, a very fine flavored variety, also the popular Country Gentleman and Golden Bantam. Sow about six seeds to a hill an inch deep and two and one-half to three feet apart. Irrigate between the rows three or four times during the month.

Parsnips

This excellent crop which should be more widely grown here owing to its high food value and keeping qualities may still be sown in rows 18 inches apart. It requires fairly rich soil. Hollow Crown is the best variety grown.

Kale

This is useful as a vegetable, also as poultry feed. Sow seeds of the tall green variety on a border. An ounce packet of seed will produce many hundreds of plants.

Carrots

For winter use sow now New Intermediate and Danvers Half Long. They thrive best on a rich sandy loam. Sow the seed in rows, very thinly, two feet apart.

Radish

Sow seed of these in rows 12 inches apart and thin the plants to three inches in the row. The varieties Crimson Giant Forcing and Half Long mature in about one month and a half from date of sowing seed. Winter varieties should be sown later in the year.

Lettuce

Make successional sowings of Los Angeles and Big Boston to have fresh tender salad for the table. Sow very thinly on well prepared soil. Keep well watered.

Southern Arizona

By M. E. Bemis



JULY is the month for beginning the planting of beans. All the pole varieties may be planted. Kentucky Wonder Wax should be planted the early part of the month, while Kentucky Wonder and White Seeded Kentucky Wonder should be planted the latter part. These varieties have been found to do well here, as also does the Broad Windsor. The bush variety should not be planted until August. Limas, Burpee's Bush, and the Large may now be planted. A peculiar bean, of Arizona origin, is called the Aztec. This was said to have been discovered in the old ruins of one of the cliff dwellings in the northern part of the state, sealed in an urn. The discoverer planted these beans, and some of them grew. I do not vouch for the accuracy of this statement, but the beans are unlike any others which are known. They grow in pods a foot or more long and the beans somewhat resemble Limas. They are of fair quality.

Pink beans, the frijole of the Mexican and a favorite with many Americans, may be planted the latter part of July. In some soils, especially the lighter sandy soils, they do very well, and where there are vacant places in the garden which are not utilized for any other purpose a few of these might well be planted.

July is the best month for planting the Mexican June corn, which is the best variety in the Southwest, is the best for general crop or for silage and makes most excellent roasting ears as well. The Pima variety, which I mentioned last month, may be planted any time during the summer. Another Indian variety, called the Papago, is also planted considerably. Both of these mature quickly and although the ears are small they are a desirable

variety for quick maturing roasting ears.

All of the grain sorghums may be planted in July. These include hegari, milo, kafir and feterita. The sweet sorghums are more popular than for several years owing to the high price of sugar, and where land is not too thoroughly impregnated with alkali it is advisable to plant some sorghums for making sorghum molasses. County agents throughout Arizona are encouraging planting of more sorghum for this purpose. The Honey Drip, Early Amber and Club Cane are good varieties for this purpose.

Cow peas may be planted in July, as well as practically every other month of the summer season. Many people enjoy an occasional dish of green shelled cow peas. The whip-poorwill is perhaps the most popular variety for Arizona.

Sudan grass might be planted where otherwise weeds would grow, and this would furnish a little chicken feed or would make hay. I find that a little patch of Sudan grass cut off when it is three or four inches high furnishes most excellent chicken feed at this season of the year. Rhodes grass is a new perennial that has come into popular favor in this locality the last few years. This is the time to plant it. It requires about five pounds of seed to the acre and will do well under rather adverse conditions. It is rather difficult to obtain a good stand of this grass, but it grows readily without very much irrigation when once established.

THOSE BICYCLING CHICKENS

"I have been instructed by the village council to enforce the ordinance against chickens running at large and riding bicycles on the sidewalk."—Alberta Advocate.

July in the Ornamental Garden

Southern California

By Ernest Branton

EXCEPT for fear of being dubbed a pessimist when asked about July gardening, we would say "don't." It is so much more comfortable to sit down and watch the flowering of the plants we set out in the cool, refreshing weather of springtime. As a defensive measure we ask: "Why should we garden in July?"

But geraniums and pelargoniums (Lady Washington's) propagate from cuttings in July as readily as at any time of the year. And heat loving annuals may still be planted or sown from seeds, while potted plants of all sorts may be set out if balls of soil are unbroken and plants shaded for a day or two from the sun. Seeds of Australian trees such as acacias and eucalypts are planted this month, also seeds of California trees and shrubs. Our plant growers are now sowing cypress seeds to get the small hedge plants you will want in the rainy season.

This is the season that tries the spirit of man, beast and plant. If you note plants that hold up under present hot spells, it is well to make an entry to that effect in your garden book, for with such should your garden be filled. Many plants are now ripening seed and the harvest should not be overlooked. Bulbs are also ripening and should be dug and stored in a dry, cool place. The writer is now digging daffodils, Spanish iris, dwarf gladiolus and all bulbs that bloomed at same season. Plant life quickly suffers from lack of soil moisture and few suffer from too much, so keep watering at a maximum.

When through with the garden hose, do not allow it to lie in the sun, for at no time does it suffer greater deterioration. It dries and cracks enough in one month's exposure to shorten its life of usefulness by one-half. If left with one end on the hydrant or with both ends high when full of water, the effect is still worse than when dry. The water left in quickly decomposes and so does the rubber lining. Empty the hose and hang in the shade. All garden tools and equipment age quickly if exposed to July weather and should be housed. To overcome this dryness and prevent checking the writer treats all wooden handles to a coat of linseed oil, either boiled or raw. Many handles crack and break through lack of such care. The oil also prevents them from getting rough and encouraging calluses on the hands.

Northern California

By A. R. Gould

SPECIAL care must be exercised this month as the newly planted subjects such as trees and shrubs will need every attention in regard to watering and neglect will mean the loss of the plants. Cultivate and water around each as often as the soil becomes dry. There are any number who plant trees and shrubs every year and for the first two or three weeks water them diligently, but after that they are expected to thrive for the rest of the year unaided, and if they die, as some of the more or less tender shrubs do, the nurseryman often gets the blame. To properly establish new plants individual care and attention is needed if you expect results, and, given this, the plants will respond. Many wonderful results are obtained in moving large trees. Almost impossible feats have been performed by landscape men in moving plants, but this means constant attention.

Watch for insect pests this month. Mr. Aphis will be busy on the roses and some of the shrubs, but they are usually enjoying the juice from the tender shoots and are easily recognized, being a green, brown or black fly which multiplies very rapidly and should be destroyed by a solution of nicotine extract which is about the only effective means of killing these sucking insects. Mildew on roses is a fungus disease, as also is rust, whether on the rose, hollyhock or snapdragon, and these must be spray-

ed with a solution of sulphur or Bordeaux mixture. It is necessary to state that where the plants are badly diseased it is a wise plan to burn them and the place where they were growing should be heavily treated with lime as the ground is covered with spores which winter there and the lime will prove of value.

Sweet Peas

The summer flowering types should just now be a mass of bloom, and to lengthen the display they should be given twice weekly a watering with liquid farmyard manure or an artificial fertilizer in the form of dried blood should be sprinkled along the rows. Cut the flowers freely and see that the vines have ample support. It will also be necessary to prepare the ground for the winter flowering types. Trenches should be dug at least two feet deep and stable manure well mixed in. Towards the end of the month seeds of the following choice varieties may be sown, and here we would remark that if the seeds appear hard, they should be soaked in water until they soften up. We recommend Early Warbler, mauve purple, Early Hercules, bright rose pink, Early Morning Star, orange scarlet, Early Liberty, blood red;

Early Peace, cream pink; Early Snowflake, pure white. You will appreciate the work of the hybridist on these, as some years of study have been devoted to producing a waved or Spencer type of sweet pea which would flower during the winter months, and the above include some very charming shades. Order the seed at once.

Cinerarias

As a subject for a shady situation these are ideal. They come in a wide range of color, are of tall, dwarf, large and small flowered types. Seed may be sown this month in boxes of fine soil and should provide strong healthy plants for the winter and spring flowering season. They thrive in a fairly rich soil. The dwarf varieties are known as grandiflora hybrida, the tall branching, as stellata.

Dahlias

Mulch these with manure and keep well supplied with water. To obtain large flowers disbud or take out the two side buds, leaving only the terminal on each stem to develop.

Subjects for Fall Flowering

Sow at once on a well prepared border where they are to flower nemesia Blue Gem, candytuft, mignonne, brachycombe and nemophila. When about half an inch high they

should be thinned out several inches apart to allow for development.

Campanulas

Some varieties of campanula are perennial but those known as Canterbury bells are biennials. Seed of these may be sown at once in boxes of sandy soil, and it should be possible to have strong plants ready to flower by the early spring. They make a fine display in groups. Campanula persicifolia is a perennial and is useful for the flower border, flowering early in spring. Plants may be secured now or seed may be sown.

Chrysanthemums

These very popular fall flowers should have all been planted in their flowering quarters ere this and will now require much attention. Apply plenty of water and cultivate frequently. To secure bushy plants pinch out the top growth to encourage branching.

Lawns

Remove all weeds and water regularly.

The county sealer of weights and measures of Orange County says that some worthless fertilizer is being sold to Orange County farmers. A recent shipment was detected in which there was 62 per cent sand.



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The value of a good implement of this kind is not only in its ability to perform a perfect job of beet lifting, but in the condition it leaves the ground for next season's crop. Subsoiling has proven very beneficial on the Pacific Coast soils, and a good job of beet plowing is nothing more or less than subsoiling.

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Investigation will prove that this section offers more for your money than can be found elsewhere in this state. For example: 50 acres, suitable for fruit and alfalfa has a few magnificent oak trees, surrounded by highly improved properties, well equipped pumping plant, Price \$225 per acre. Terms.

40 acres, over half now in irrigated crops, 12 acres in alfalfa, small but neat improvements, land partially fenced. A real bargain at \$200 per acre, half cash.

72 acres, mostly river bottom land, a portion in alfalfa, four or five cuttings without irrigation. Good buildings, water under pressure, modern improvements. Land fenced. Offered for \$300 per acre.

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CALIFORNIA CITRUS CONVENTION

(Continued from Page 3.)

ning a single furrow on each side with one horse. We disk early and later run spring tooth and chisel tooth, subsoiling once a year to 12 or 16 inches. We use horses and mules for general work and tractors for the heaviest.

"We sow cover crops in August and use several kinds, but find purple vetch generally best. Melilotus comes a little too late. For summer cover we have had good success with Black-eyes, sowing them thickly in rows 26 inches apart and plowing under in August. We plow furrows ten to 12 inches deep for manure and alternate with cross furrows next year, using ten tons to the acre each year. But on washy soils, those easily disturbed, we broadcast the manure. We have found a combination of bean straw and manure best. We also have orchards where there are strips of alfalfa between rows. This is also fertilized and at the end of four years is plowed under. This takes much water but gives improved color, though trees are not yet larger or fruit better. Two years after alfalfa is turned under test holes dug showed the alfalfa roots still there. To sum up in three heads: irrigation, cultivation, fertilization, I would suggest: make the runs short; plow early, before last rains; raise alfalfa and irrigate it."

Orange County Practices

C. B. Newman, superintendent of the San Joaquin Fruit Company's orchards at Irvine, said the farm labor question was a very important one and they had found it necessary to build good dormitories and provide amusements for single men and substantial cottages for married men.

In orchard practice frequent irrigations are necessary for soil is light. It has been found that June drop is not excessive where there is plenty of atmospheric and soil moisture. The winter feeding roots are near the surface and a hot spell dries out this top soil and drop results. Hold spring conditions of soil all the year if you can. Light soils are not so responsive to manure or fertilizers as heavier soils. He uses ten cubic feet of manure to each tree, applied in deep furrows, followed with a summer cover crop of cow peas.

R. S. Thompson of Highland, San Bernardino County, has been in the citrus growing business for 37 years and has found out that constant cultivation from May to October is not good practice. Since 1881 all organic matter applied to his trees has been grown in the orchard, and all are in fine condition. Livestock he has not found essential; cover crops and commercial fertilizer are sufficient. Exhaustive experiments have proven the value of cover crops as against any other method of applying organic material. Deep plowing should not be done more than once every five or six years.

Another speaker, from the audience, stated one of his orchards contained 190 old Navel trees that would pick but 300 boxes a year. They were cut off somewhat, thinned out, and the next year bore seven boxes to the tree and have been increasing in yield ever since, quadrupling to date that of the trees left unpruned. This year he bought a carload of nitrate of lime from Norway, applying two pounds to a tree, then tankage and again another application of the lime. He has found this good for olives and for lemons, but too much nitrogen for oranges.

Duty of Water

Professor R. S. Vaile then gave a talk on soil types and irrigation, in which he said we will never have enough water in California to irrigate all tillable land. Too much water is used in some orchards and in some sections the water table is rising at an alarming rate. Vigorous fibrous roots must be encouraged early in the season. Nearly all citrus roots are within two feet of the surface and all generally within four feet. A summer crop of melilotus running ten tons to the acre uses 1,000 tons of water. Orchards should be irrigated both ways, if possible, to encourage the fullest development of fibrous roots. Damp soil receives water much better than dry soil. "You know how hard it is to wet road dust." One inch of rain will go down six inches in dry soil, but a foot in damp soil in the same length of time. Two and a third

inches of water is all that can be retained in a sandy soil within the feeding area and is sufficient. The annual yield of alfalfa in Tulare County was not greatly increased by applying 60 inches of water where but 30 inches had previously been applied each year.

From San Diego County

The results of irrigation control at Chula Vista was given by F. M. Eaton. He said the Sweetwater system was fine and ample water supplied orchards at an average cost of \$20 per acre annually. The supply is not limited and the orchardist may use it when he lists. The soils about Chula Vista are variable, from adobe to sandy loam. Eighty per cent of the feeding roots are in the top foot. The distribution of water takes place only while running or very shortly thereafter, for where a bank of wet soil had a bank of dry soil placed against it the latter did not wet in one inch in 24 hours, the transmission being practically nothing. Runs of 300 feet are enough in light soil, and three or four irrigations all that are needed. Yellow leaf is due to excess of water. In the section but 16 acre-inches are needed each season. Every orchardist should know his soil well and to considerable depth.

C. B. Booth, Chaffey Junior college of agriculture, Ontario, then spoke on "Irrigation of Light Gravelly Soils." The distance of 660 feet, or across ten acres, is too far for water to run; 330 feet is enough. Grade of land is important. Water moving one foot per second carries silt. At two feet per second it carries 64 times as much; at three feet per second it carries 700 times as much. Thirty days apart is too infrequent irrigation. Twenty to 24 days is about right. Fifteen days is found preferable to 30 days, and it is better to run 12 hours every 15 days than 24 hours at 30 day intervals. To run water every 15 days requires but one and a half times as much labor and cost as a run at the end of 30 days. Roots of oranges were found to penetrate 13 feet. Irrigation is as much concern to a community as marketing. By using just enough water one orchardist saves but little, but all together save much and in a year of shortage may mean the difference between success and complete failure.

In Ventura County

"Irrigation of Medium Loam Soils" was the subject discussed by J. M. Culbertson, assistant manager of the Limoneira Company, Santa Paula. "The best land grade for irrigation is from one to two per cent; if it exceeds two and a half per cent it should be irrigated on contour lines. Our runs are from 225 to 400 feet long, usually 300 feet. Irrigations are five or six weeks apart and four to eight acre-inches given at each time. The third irrigation is generally in August. In September we plant cover crops and turn them under in February. Barn yard manure helps percolation much. The usual orchard practice in California is to use 18 to 30 inches of water a year; at Limoneira we apply 40 to 70 inches. When we used from 19 to 29 inches for two years we found it insufficient; the crop was reduced, also size of fruits. The penetration was but four feet and alkali was found to have lodged there. It should have been carried deeper. To summarize: Five weeks apart and five acre-inches at a time is enough, and because of alkalinity our soils need more water than lighter or freer soils. Furrows of 330 feet are enough in any soil. Water should reach the end of the furrows in one-fourth the time it is to run. Use the soil auger frequently."

W. P. Kelley of the citrus experiment station at Riverside spoke extemporaneously on methods of applying fertilizers. The roots in average soils are found mostly in the top two feet and nearly all within the top 20 inches. In grain fields fertilizers are applied before planting and are therefore placed where they are to be used, but in orchards they must be moved again by some agency before roots can get hold of them. Actual contact with roots is necessary. Nitrogen must get into nitrate form before available and all is then soluble and must not be washed down too deep, for it is irrecoverable. Phosphoric acid and potash move through the soil to a very limited extent, no matter in what form applied. The first few top inches get and retain all; they will not spread. On thousands of acres of phosphate application in California it never comes in contact with



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the roots it should feed. After 12 annual applications soil samples were taken at one, two, three and down to ten feet deep. In 20 plats no phosphoric had gone below the first foot during the 12 years and none was found below the top foot in excess of the amount in nearby virgin soil. But the amount of phosphoric acid had doubled in the top foot in the orchard, over that in adjoining virgin soil, while the roots were nearly all in the second foot! To increase efficiency we must do one of three things; Put it deeper in the soil; ameliorate soil conditions to bring about greater exchange between upper and lower soils; make soil tubes through deep rooting plants or induce roots to come up."

Ranch Labor

A survey of the labor situation was given by George B. Hodgkin, field department California Fruit Growers Exchange, in which he said: "Associations of orange growers, canneries, railroads and other interests are largely solving the problem by providing proper housing, especially for married men. A study has revealed a one year job employs 12 single men, or an average of one man a month, but a similar job holds a married man one year. The majority of ranch labor is Mexican, but no Mexican is satisfied with merely eating and sleeping. He needs relaxation and amusement. Mexicans also have to be taught the uses of modern cottages and equipment, a matter of education which they are quick to appreciate. They have to be first forced into education but soon become eager for it. It is hard to get results from men you cannot talk to. Education of the Mexican in the past has been regarded as purely philanthropic work, but that is the wrong view of it; it is an economic necessity. Get Mexicans to build their own homes by making the acquisition easy. Present your problems to your employees, especially heads of departments, once or more a month for discussion. Bonuses, awards or rewards encourage and also accomplish much. Seasonal labor is bound to be transient and unsettled, therefore study to provide steady employment, even if you have to find outside work for some of your men.

F. A. Pomeroy, manager of the San Fernando Citrus Association, also spoke on the same subject. He said: "We employ mainly Mexicans, with a few Japanese. Study your men and find out to what each is best adapted. Try to find steady employment close at home during the non-picking season. Just last week we found some of our men jobs on neighboring ranches growing other than citrus crops. We are also building good cottages for them; don't let them live in shacks. You can then soon get a better class of laborers."

The last speaker of the institute program was Professor H. J. Quayle of the citrus experiment station, Riverside, on "The Orange Tortrix." Some dozens of infested oranges were distributed through the audience. Professor Quayle said: "It is estimated that in some sections 25 per cent of the crop is infested by this pest and the matter is becoming serious. The damage occurs somewhat every year, worse in some years and in some sections than in others. The burrow is shallow, only extending through the skin, to the pulp. The burrows not only mar the fruit but induce decay, are difficult to detect, and fruit may decay in transit. Fruits drop from trees after infection, and as they prematurely turn yellow, may be detected on tree. The tortrix also attacks other trees, such as apricot, willow, walnut and several ornamentals. It is sometimes a borer, sometimes a leaf roller. It is not yet serious over large areas and no systematic control measures have been taken, but we are now coming to it. Spraying with arsenate of lead is most efficacious and some have used that mixed with lime-sulphur to catch red spider at same time, but the two should not be fought at once as seasons are unlike. Early spraying in May with one-fourth pound of arsenate of lead to a large tree will cost but six or eight cents per tree for material."

The Easter freeze in Eastern peach growing sections has seriously cut down the crop. It is now reported that Arkansas and Oklahoma will have no peaches at all.

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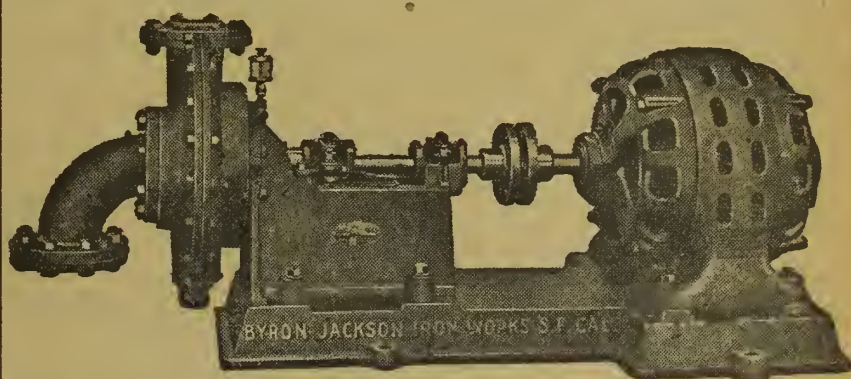
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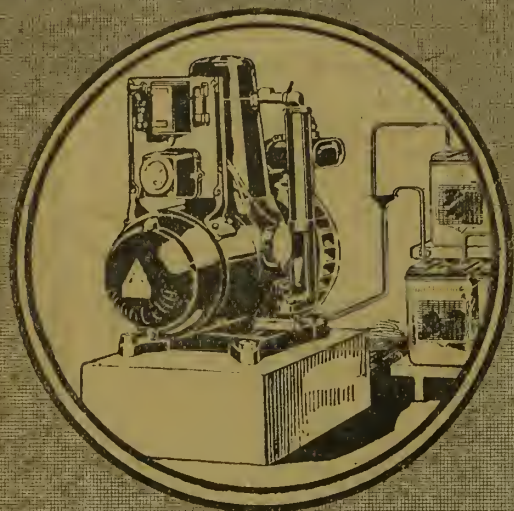
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Live Stock News Notes

LIVESTOCK SALE CALENDAR

Duroc-Jerseys

July 21, Elmer Lamb, Ceres.
July 29, Conejo Ranch, Newbury Park.
July 28, Winsor Ranch at Los Angeles.

Hampshires

July 30, Conejo Ranch, Newbury Park.

Poland Chinas

August 21, Merced County Poland China Breeders' Association, Merced.
September 27, Hugh C. Shinn, A. J. Elliott and Alex D. McCartv, Tulare.
October 6, Kings Co. Poland China Breeders Assoc., Hanford.

Shropshire Sheep

August 11, Butte City Ranch.

Shorthorns

August 11, Butte City Ranch.

Berkshires

August 11; Butte City Ranch.

Elmer Lamb of Ceres writes in regard to some of the animals he will sell on Wednesday, July 21; "Orion Cherry Pathfinder is developing into a great boar. Being a son of Mary Jane Pathfinder by Pathfinder, and Orion Model by Orion Cherry King Jr., he cannot help being good. At 18 months he weighs over 700 pounds, just in breeding form, is a boar of immense bone, great smoothness and feeding quality. Being a grandson of Orion Cherry King Jr., Taxpayer, Pathfinder and Grand Model, he carries the best blood of the breed. Sows and gilts bred to him should be attractions in the sale. Mary Jane Pathfinder, his dam, is rounding out in fine shape and can easily be conditioned for the fair this fall. She was junior champion at the state fair in 1918 and in addition to being a show sow is a great producer. In her last litter she had 15 pigs and raised 11. In the sale are three boars and four sows out of her that bear testimony of her worth. Also in the sale are four gilts sired by Orion's King Gano and bred to Orion Cherry Pathfinder."

The Winsor Ranch at Bonita, San Diego County, has recently acquired an excellent foundation in Guernseys from the noted Dupee herd at Santee. The new acquisition consists of a dozen females, with a crack young show bull at head of the herd. This young fellow is a half brother to the grand champion at the National in 1919. His sire is Itchen May King, dam Veda of Checona. He will be seen in the big show circuit this year.

Derryfield Farm, Sacramento, is a well known center for big type Durocs. The sire in service is Pathfinder Wonder, a son of Great Wonder I Am, and out of a Pathfinder dam. Just now there are some attractive offerings in tried sows and yearling gilts, all to be mated to the big boar Pathfinder Wonder. Blood lines in the herd run direct to Model Col., King's Col., Crimson Wonder, Golden Wonder and Burke's Good E. Nuff. At 15 months Pathfinder's Wonder stands at 500 pounds, 37 inches high, and 71 inches from eyes to root of tail.

As superintendent of cattle for the Southern California fair at Riverside George W. Thomas has won for himself and for the fair well deserved popularity. Mr. Thomas is well known also as a senior member of the firm of Geo. W. Thomas & Sons at Arlington, breeders of high class registered Jersey cattle. The ranch is an ideal one in all respects, being well equipped with comforts and conveniences designed to develop all the good traits of the breed. Mr. Thomas pins his faith to the official test, and the good work goes on accordingly.

William Hemphill, manager of the Paderewski Ranch at Paso Robles, has just heard from Mr. Paderewski, who states that he is returning to Poland to sever his connection with that government, after which he will proceed to Paso Robles to make his permanent home at Rancho El Ignacio.

It is reported that Kenneth Abbott, formerly with Burr Farm, later at Sacramento, has now secured an interest in the Burr Farm Holsteins and is to have active charge of the herd. With the expansion of the herd and test work, Manager Geo. M. Brown found that he had too big a one man

job. There are now 46 cows on semi-official test at Burr Farm.

C. J. Gilbert, known as one of the leading breeders of Hampshire swine in this state, having disposed of his Antelope Valley ranch properties, has associated himself with Edgar Rice Burrows, author of the popular Tarzan stories, in the breeding of high class Hampshires in the San Fernando Valley. The Gilbert herd is now installed at the Burroughs ranch near Owensmouth and will form the nucleus around which to build one of the leading show and business herds in California.

Newton's Arenal Ranch at Lankershim seems to have had what some people call "luck" in raising many fine pigs this year of 1920. At any rate, the pigs are there—plenty of them. There are 100 March pigs and they have lots of size for age. They come of strong even litters, too. Those who visit the ranch say "It isn't all luck." It is system, attention to details at the right time, comfortable quarters, good feed, pure water and plenty of open pasture room. Trade is reported to be picking up on these March youngsters. Then there are some very excellent September boars and gilts ready for use now. You see pedigrees for every animal at the ranch.

Fred Rood, for many years field man in the Iowa territory for the American Swineherd, and one of the best known Poland China breeders in the country, is making a tour of California in an effort to regain his health. Mr. Rood likes the appearance of many of the California herds and may possibly locate permanently and establish his herd of Polands in this state. He will spend the next month visiting throughout the Sacramento Valley and return to Iowa in time for the sale season, which will start about August 1.

Recent sales reported by A. Buckland & Son, Fresno, include the herd boar Blue Valley King to Reasnor Bros., Athlone. Also several weanling pigs for pig club work in Los Angeles County.

A large number of Duroc breeders were in attendance at the meeting held in Fresno, June 24. While no really definite move was made, the question of a breed promotion field man was discussed and plans are being made to finance the movement. This is a matter of great importance to every Duroc breeder in the state and it is to be hoped that it will receive the support it deserves.

At a recent sale of Shorthorns held in Missouri two yearling daughters of the Caledonia Farms herd bull, Imp. Caledonia, sold for \$1,500 and \$1,475.

In five Shorthorn sales held at Marysville, Missouri, recently, 277 head of bulls and females were sold for an average price of \$1,086.

The second annual Pork Day will be held at Hanford, October 28. The following prize list has been announced: Carload class (70 hogs to the car)—first, \$350; second, \$280; third, \$210; fourth, \$140; fifth, \$70. Additional prizes will be offered for pens of ten and for individual barrows. New classes have been provided for boys' and girls' clubs.

Professor R. F. Miller has arrived at the university farm and will serve as acting head of the animal husbandry division during the coming year, while Professor True is away.

The first annual meeting of the California Dairy Council will be held at Hanford, July 14-15. The two days will be crowded with entertainment, ranging from speech making to a barbecue.

At the annual meeting of the Kings County Poland China Breeders Association held at Hanford Monday, June 14, it was decided to hold the next semi-annual sale of the members at Hanford on October 6. All officers were reelected for the coming year.

RECORD PRICE FOR SOW

In the Cultivator of June 19 report was made of the record breaking sale of the senior yearling Duroc boar Great Sensation 3rd by Winsor Ranch, Bonita, for \$8,000. Winsor Ranch also holds the record for selling the highest priced sow ever sold by a Western breeder. The sow was High Lady Sensation, and sold for \$2,000. She was bred to Great Sensation 3rd and

with the last ram offered on the second day. This ram, a registered Rambouillet from the famous Bullard Bros. flock, Woodland, and typical of the type this firm has been producing through their well directed and constructive efforts, was bought by Eibe and Huffman of Glenn County for \$250. Other consignments from the Bullard flock were generally appreciated. An especially good buy consist-



High Lady Sensation

A fall gilt of the Winsor Ranch recently sold to Edgemore Farms for \$2,000. She is sired by Orion Sensation, the first prize senior at Iowa last fall, and is a littermate to the world's grand champion, Great Orion Sensation. She was bred to Great Sensation 3rd the junior herd sire, and farrowed 15 fine pigs. She is raising 13 with a nurse sow's help for two of them.

farrowed 15 pigs, of which she raised 13, with the help of a nurse sow for two of them. She is a litter mate to the Cummins sow of Visalia that topped the Winsor Ranch sale last

FAIR DATES

Sonoma County Fair, Santa Rosa, August 25-29. Secretary J. Francis O'Connor.
Patterson Fair, Patterson, August 26-28. Secretary T. J. Moe.
California State Fair, Sacramento, September 4-12. Secretary Chas. W. Paine.
Tulare County Livestock and Agricultural Show, Tulare, September 14-18. Secretary John A. Rollins.
San Fernando Valley Fair and Market, Owensmouth, September 15-18. Secretary Chas. L. Schufeldt.
Kings County Fair, Hanford, September 21-25. Secretary Frank C. Russell.
Ventura County Fair, Ventura, September 22-25. Secretary L. P. Hathaway.
Glenn County Livestock and Agricultural Association, Orland, September 27-October 2. Secretary E. A. Kirk.
Fresno District Fair, Fresno, September 23-October 2. Secretary Walter C. Ficklin.
Los Angeles Livestock Show, Los Angeles, October 2-10. Secretary C. R. Thomas.
Siskiyou County Fair, Yreka, October 5-9. Secretary Claude R. Gillis.
Southern California Fair, Riverside, October 13-19. Secretary W. W. Van Peit.
Western Royal Livestock Show, Spokane, Washington, November 1-5. Secretary Bert L. Hilborn.
Pacific International Livestock Show, Portland, Oregon, November 15-19.

winter and with the help of a nurse sow is raising 14 out of her 15 pigs.

A large number of sows bred to Great Sensation 3rd will be offered in the coming sale of Winsor Ranch at Los Angeles.

FIRST RAM SALE A SUCCESS

The first ram sale ever held in California was held under the direction of the California Wool Growers Association at the university farm, Davis, June 24-25, and the results were of such satisfactory character that it is quite certain that the sale will be made an annual event. No effort was made to attract extremely top consignments, as the initial sale was more of an experiment. However, the general quality of the offering was entirely satisfactory and the prices paid, for the most part, represented values that were profitable to both the sellers and the buyers. A distinct preference was manifested for the better things, but there appeared to be no unusual or pronounced demand for any one breed. Good Rambouillets, good Hampshires and good Shropshires were in favor. The plainer things and the lesser known cross-breeds sold at bargain figures.

The top of the sale was reached

ed of ten registered yearling Bullard ewes that went to J. E. Harby of Davis for \$70 around.

C. Harold Hopkins, whose ranch is near Davis, was represented by a very attractive lot of registered Hampshires. They were presented in nice condition and with plenty of size, and were eagerly taken at an average of \$110, the top going to V. F. Dolcini of Davis for \$130 and the top pen of the sale selling for \$110. Joe Levy of Manteca was also a contributor of Hampshires, but his consignment was handicapped by a long ship.

Among the Shropshire breeders, the flocks of Butte City Ranch, Butte City, and Col. J. W. Marshall of Dixon divided honors for top places. The former flock sent in the top lamb of the sale and secured from the Marshall flock one of the top stud rams. Marshall topped the Shropshire division with a ram that sold for \$140.

The sale was managed by Fred W. Ellinwood of Red Bluff and Professor James Wilson of the university. Col. Ben A. Rhoades of Los Angeles was the auctioneer.

IMPURE SALT INJURES HIDES

Recent experiments have shown that the use of impure salt on green hides produces a low grade of leather. Much of the salt nowadays contains alum. This element when applied to hides partly tans them and sets the hair. When the hair cannot be removed the tanner experiences a loss and thereby becomes prejudiced against the producer who, in the future, may find it difficult to dispose of his hides.

Use pure, clean salt on the hides in order to produce a high grade of marketable products. A very small percentage of alum may be detected in salt by the astringent bitter taste.

Veterinary

Cow Constipated

My cow has been fed green cut Napier grass, bran, alfalfa, etc., but has been seriously constipated. She was relieved by veterinarian and is now eating alfalfa all right but refuses to eat the grass. Was the Napier responsible?—Subscriber, Los Angeles.

I would suggest that you drench your cow with a quart of raw linseed oil. Then follow this up by only light feeds of bran mash and alfalfa with ensilage or some green feed if possible. If her appetite does not return I would suggest that you repeat this treatment in about three days. The trouble is probably due to some intestinal disorder which the raw linseed oil should overcome.—G. E. G.



Lendorris Liberty Bond, Skyrocket and Lendorris Liberator,

Three good sons of three good sires are our herd boars, and are backed by a sow herd of such uniform excellence and approved blood lines as to assure satisfaction to the purchaser of Poland China breeding stock. We have some choice individuals of various ages for sale at all times. Write us for prices.

W. L. Haag and Son

Hanford, Cal.



Do You Know?

That The Westerner is a half brother to the Junior, Senior and Grand Champion sows at the last National Swine Show.

That his half sister (the Junior Champion) sold for \$5000, the record price for an open gilt.

Remember that The Westerner is from a family of "mighty good folks" and that we sell sows bred to him in our Sept. 27th sale.

ALEX. D. McCARTY

RIVERINA FARMS

MODESTO, CAL.

The Buckland Herd of Poland Chinas

A herd where the individuality of the herd stock is right. The pigs developed carefully and the customers treated with that degree of courtesy and fairness that has made it possible for us to say "once a customer, always a customer." Let's get better acquainted.

A. Buckland & Son, R.F.D., Fresno, Cal.

THE SEQUOIAN

A yearling of the most approved Poland China type and one that bids fair to develop into a remarkable sire. At present I can spare some choice young stock either sex at reasonable prices.

Z. M. Dickey

Dinuba, Cal.

FORRESTVIEW BOB

A Son of the Grand Champion Caldwell's Big Bob

is the boar that is largely responsible for the number of satisfied customers who have purchased Poland Chinas from me. Satisfied customers are my specialty. Write me. I will appreciate your inquiry.

J. H. Cook

Paradise, Cal.

For easy feeding, early maturing Poland Chinas,

Secure the Get of Model Big Fellow

The Reserve Grand Champion of the last state fair, the strongest Poland show ever held in California. His pigs are the kind that satisfy the purchaser. Your correspondence will be appreciated. Write me.

J. F. McSwain

Merced, Cal.

Trehwhitt's Big Type Polands

have been developed by a most careful selection of individual excellence and blood lines that have made good in Poland China history. Size and feeding ability have always been essential features demanded. Let your next purchase be a Trehwhitt-bred Poland.

W. D. Trehwhitt

Hanford, Cal.

King's Big Bone Leader

Assisted by Giant Bob 2nd, a son of last year's champion, is siring a high grade of Poland Chinas. Remember my big August sale of bred sows featuring the above boars.

Les McCracken

Ripon, Cal.

McCune's Quality Herd

of BIG TYPE POLAND CHINAS

attained their prominence by their individual excellence, necessary to constructive breeding. A McCune-bred Poland China is backed up by generations of ancestry that have stood the test. Write for information and prices.

H. D. McCUNE,

Lemoore, Calif.

TWO DAY AUCTION SALE

Famous Conejo Ranch Herds

Duroc-Jersey and Hampshire

For years the Conejo Ranch has been recognized for the high class pure bred hogs in both Duroc-Jersey and Hampshire breeds that they have raised. At every stock show for the past few years Conejo animals have been prominent in the championship and first prize classes. Every year the standard of the Conejo hogs has been raised with the result that this ranch today is able to offer a remarkable big type preferred by all breeders.

All sales of Conejo animals in the past have been made privately, but the management has decided on a new policy of two sales yearly. These two sales for this year are announced as

Thursday, July 29th Duroc-Jersey Sale

Friday, July 30th Hampshire Sale

The offerings in both classes will be carefully selected bred gilts and a few tried sows.

Make arrangements to take in this sale. Barbecue will be served at the ranch. Its location is forty miles northwest of Los Angeles on the Ventura State Highway. If you are coming by train notify our Los Angeles office regarding transportation desired.

Conejo Ranch

Newbury Park, Ventura County

Los Angeles Address:

Janss Investment Company, 4th Floor Metropolitan Bldg.

COME TO THE

Great Dispersal Sale of Lamb's Durocs, at Ceres, Cal. Wednesday, July 21st, 1920

Offering is sired by such boars as Pathfinder, Orion Model, Orion Model Jr., Orion Cherry Pathfinder, Orion's King Gano, Lord's Orion Cherry King and Grand Wonder. Thirty sows and gilts bred to Orion Cherry Pathfinder, the big grandson of Pathfinder and Orion Cherry King Jr., Lord's Orion Cherry King, First Prize senior yearling at Sacramento last year, and Donald Orion Gano, a good son of the great boar Orion's King Gano. About forty open sows and gilts and ten boars complete the offering. Catalogues out in a few days.

ELMER LAMB

CERES, CAL.

CALIFORNIA BUTTER AND CHEESE CONTEST

By G. D. Turnbow

The first scoring of the 1920 California Educational Butter and Cheese Scoring Contest conducted by the dairy industry division of the university farm was held in Davis on June 11. Eleven samples of butter and six of cheese were entered for scoring. T. J. Harris of San Francisco, S. L. Deming of Oakland and G. D. Turnbow of Davis were the judges. G. R. Jaehrig of the university farm received 93 commercial score. L. Diamond of the University Farm Creamery received 96.3, the highest score where the commercial and composition scores were averaged. O. Ghigglioli of the University Farm Creamery received a score of 93, the highest score on cheddar cheese. Mr. Ghigglioli has won in fair and other contests before but this is the first time that the University butter has won over the other creameries in a similar contest.

Butter Scores

Following is a list of the entries which scored 90 or above on commercial score:

J. Reeder, Western Refrigerating Co., 91; Fred Peter, Montague Creamery, 89; Harry Wolf, Crystal Cream & Butter Co., 91; Milton A. Silva, Salinas Creamery, 92; M. H. Crasby, Hooper Creamery, 91½; Bodega Cooperative Creamery, 91½; Julian Serles, Scott's Dairy, 91½; J. F. Morrison, P. M. Dairy, 88; Watsonville Creamery & Milk Dept., 91½; G. Jaehrig, University Farm Creamery, 93; L. Diamond, University Farm Creamery, 92½.

Cheddar Cheese

J. A. Jack, Reber & Woodmanse, 91; John Reber, Reber & Woodmanse, 90; O. Ghigglioli, University Farm, 93.

Butter Very Uniform

The butter as a whole was a uniform lot. The average score of the 11 samples was 95.25. This average includes both the commercial and composition scores. Some of the entries were cut quite severely on an old cream flavor and neutralized flavors were not uncommon. Considerable harm can be done to butter if the cream is neutralized too low. For all practical purposes reducing the apparent acidity to .25 per cent is all that is necessary and unless very high acid cream is used no neutralized flavor in the butter will result. It is impossible to guess at the acidity—make acid tests. The butter as a whole was cut but little on the body. Only one sample in the lot was criticized for being short grained. In composition (which rests almost entirely upon the skill of the buttermaker), scores were exceptionally high, the lowest composition score being 96 while perfect composition scores predominated. This was not the case a year or so ago.

Cheese Entries

Some of the cheese was not of the best of quality; poor milk was undoubtedly the cause of most of the trouble. Part of the cheese was too green to score to an advantage. The workmanship on the entire lot was very good.

The next scoring contest will be announced later and it is hoped that a much larger number of samples will be entered. If there are any suggestions regarding the contest the dairy industry division at Davis will be glad to receive them.

SONOMA COUNTY'S DAIRY IMPROVEMENT CAMPAIGN

In connection with the regular monthly meeting of the Bodega-Valley Ford farm center, the recently formed dairy department of the Sonoma County farm bureau held an all day better dairy stock demonstration on Thursday, June 10, on the farm of J. A. Mache at Bodega Roads.

Professor Rubel of the University of California conducted a demonstration of judging correct type of dairy animals. Between 40 and 50 head of the best dairy stock in western Sonoma had been assembled, many of them cows that had been under test in the Bodega Cow Testing Association for several years. Several pure bred sires of merit were led out and several heifers shown, along with their dams and sires, and by comparison the fact was demonstrated that the influence of a pure bred sire in im-

proving the standard of stock was beyond question. The value of cow testing was also ably demonstrated when some very ordinary cows were brought out whose production records were given at 400 pounds and better, while other promising looking animals, with production records considerably less, were shown in comparison.

Samuel H. Green of the State Dairy Council urged the dairymen to get behind the movement, pointing out the great need, at this time, of unified action of the dairy interests.

J. R. Gallagher of Bodega, chairman of the dairy department of the county farm bureau, handled the arrangements for this meeting, which is one of the first of a series planned to be held in the future.

In connection with the activities of the dairy department of the county farm bureau, increasing the number of cow testing associations in the county for the coming dairy season is foremost. A pure bred bull sale is being arranged for the latter part of September, to be held at Petaluma, at which sale it is expected that not less than 25 pure bred bulls of merit will be placed in the hands of Sonoma and Marin County dairymen.

CALIFORNIA LEADS IN PRODUCTION OF BUTTER FOR NAVY

William White of the dairy division, United States department of agriculture, has been on the Pacific Coast to procure inspectors for the navy butter now being made in three plants in Humboldt and one plant in Del Norte County.

The navy butter contract with these four plants calls for 850,000 pounds of butter made from unripened pasteurized cream. No single can of cream may contain over 0.23 per cent acidity. The butter must score 94 per cent and contain not over 13.5 per cent moisture. It is packed in six pound six ounce tins. Located in each of these plants making this butter is an inspector whose duty it is to examine the raw material, score the butter, run salt and moisture tests and see that a high standard of sanitation is maintained in the plant at all times. A portion of this 850,000 pounds of butter will be put in storage on this coast for the Pacific fleet and the balance shipped East, presumably to Hampton Roads, for storage.

It is estimated that it will take about two months to fill this Pacific Coast contract. There is a similar contract for navy butter, but considerably smaller, being filled in Minnesota.

WHEN TO CUT CORN FOR SILAGE

The feeding worth and palatability of good silage depends on the quality of the corn and the period of maturity at which it is cut. Where the corn is cut when it is immature, not well glazed and dented, and still in its juvenile stage, it makes washy, low quality, acid forming silage which is likely to sour. On the other hand corn harvested when it is well dented and at the proper degree of ripeness for best use as silage, gives a winter feed which is one of the best producers of milk and meat. Corn should be allowed to pass well through the milk stage and become thoroughly dented before being siloed. Investigations of the United States department of agriculture have demonstrated that it is much preferable, for silage of the best quality, to have the corn a little overripe rather than underripe.

In some sections farmers, and particularly dairymen, are accustomed to ensile combination crops, using mixtures of soy beans and corn, cowpeas and corn, sorghum and corn, or a combination of these three for canning purposes. As a general proposition, where other branches of animal husbandry in addition to dairying are taken into consideration, corn or some other coarse forage is most desirable for ensilage purposes. Acre yield is the end sought, the chief objection to the valuable protein forages such as cowpeas, soy beans and the like being that they are low yielders better adapted for hay than for silage. Dairy farmers who require an abundance of succulent silage of a rather balanced composition highly prize the leguminous crops mentioned as supplements to corn and usually realize an adequate return from the sale of their milk to allow them to produce these crops at a profit.

Beet Top Silage a Hay Substitute

Stock growers having a sufficient quantity of sugar beet tops can reduce their hay requirements by approximately one-half by using their beet tops for the production of silage. This information is particularly valuable at this time because of the present hay shortage. When this silage is substituted for a portion of the hay normally fed it is found that beef and mutton gains continue on a normal basis. Many beet growers contend that beet tops are worth from \$10 to \$12 an acre when grazed. Where the beet grower does not have stock to utilize the pasturage it is common to sell the tops to stockmen at from \$3 to \$6 per acre, or even higher. In the absence of complete data from well defined experiments in feeding beet top silage, the department cites the experience of several careful feeders as indicating the genuine value of this by-product of the sugar beet field. One large cattle grower reports that the shipping "shrink" on cattle fed and "finished" by using beet top silage as a generous part of the ration, is not greater than the "shrink" commonly had with cattle that are fed and finished with grain, alfalfa and concentrates.

Persons who have not used beet top silage are cautioned to feed it lightly at the start. It is also important that moldy silage found on or near the surface or sides of the silo be carefully removed and destroyed, as such food is even more dangerous than moldy hay or straw.

Harvesting and Preparing

The essentials involved in making good beet top silage are substantially those necessary to making good corn silage. The mass should be packed thoroughly to exclude the air and then sealed air-tight. It is not necessary to run the tops and crown through the silage cutter, though some feeders prefer to do so to avoid the possibility of choking animals on the crowns.

The average cost of gathering the tops and piling, packing, and finishing the silo is approximately \$1 per ton. As a preliminary step it is particularly important that the tops be gathered and put into small piles promptly after the beets are topped, and that the dirt and sand be removed. This can be easily done by shaking the tops well while the leaves are fresh.

A structure commonly used for putting up corn silage is entirely suited for beet top silage. Because the beet tops pack very densely the structure may sometimes crack under the pressure and thus allow air to enter. However, a silo well built is reasonably safe. If one does not have an ordinary silo, cash outlay is not necessary to make beet top silage, for a natural earth silo can be used quite satisfactorily. The earth pit which can be quickly made by the use of a team or scraper should be deep and narrow in stead of wide and shallow. Under certain conditions concrete side retaining walls are advisable for such storage places, but ordinarily the earth sides and bottom covered with straw have been found satisfactory. When the natural earth silo is used special care is necessary in packing, and, after filling, the top should be covered with beet pulp or earth to exclude the air.

An excellent quality of silage can be made by merely stacking the tops and crowns entirely above the earth and then packing them thoroughly. Of course the spoilage is greater in such a case than when the structure or pit silo is used. Many stock raisers lay away a supply of sugar beet pulp for winter feeding.

Pulp, another by-product, is the fibrous mass that remains after the saccharin matter has been removed from the sliced beets commonly called "cossetts." The best way for the grower to store a portion of this pulp for winter feeding is to spread it on the top of the beet tops in the silo. This effectually seals the silo and prevents the silage mass from freezing. At the same time the heat from the silage warms the pulp, thereby hastening its curing and rendering the pulp as well as the silage excellent for stock feeding.

Suggestions for Proper Feeding

Silage is not a balanced ration, but, being a carbohydrate feed, it goes well with alfalfa hay which is rich in pro-

tein. Fermentation in the silo corrects the cathartic salts in the beet tops and crowns. The best feeding practices show that the beet top silage reduces hay requirements one-half in feeding for beef or mutton or milk production.

Beet tops will increase the flow of milk with ewes at lambing time. It is best to start feeding only about one pound per head per day and gradually to increase to about three pounds per day.

From the standpoint of costs it is interesting to note that the by-products of the sugar beet crop, when properly handled and fed, have a value equal to the entire cost of the so-called "hand labor" required in producing the beet crop. If properly conducted, the feedings of the by-products will yield a net profit equal to about one-half of the net profits usually had in growing and marketing the beets themselves.

GIVE THE HOGS A FISH COURSE

The common domestic pig will never be able to write a book on table manners, but he knows how to order a meal as well as anyone. He is in a fair way to demand a fish course to supplement his salad and vegetable diet. He will take his fish in the form of fish meal, the refined by-product made from sound, wholesome raw material at the sardine, tuna, and salmon canneries, or from the menhaden.

The fish meal is not to be confused with "fish scrap," a coarser by-product much used for fertilizer; the meal is made from clean, sound material and is intended to be used as food for cattle and hogs. Formerly, the cannery waste was all made into "scrap" for fertilizer purposes, but the bureau of chemistry, United States department of agriculture, knowing the extremely high protein content of the scrap, has been active in converting this material into a high grade protein feed. The cleaned, selected portion is ground to a fine, palatable meal which may be used to replace tankage in hog, poultry, or dairy rations.

Fish meal has been recommended as a supplementary ration before now, but popular prejudice against a badly prepared product has discouraged its use. The department of agriculture has proved by feeding experiments that fish meal equals the high priced tankage as a ration ingredient, and better methods of selecting and milling have removed the causes of prejudice.

The oil content of the meal adds materially to its feeding value. So far the experiments have shown that the meal does not taint the animal product, whether it be pork, butter, eggs, or milk. Moreover, by diverting the fish meals to his animals instead of supplying it directly to his land as fertilizer, the farmer loses but a trifle of its fertilizing value and gains its entire feeding value—thus making the material yield two profits in the place of one.

LET YOUR BULL INDOSE YOUR NOTE

The better sires campaign conducted by various states in cooperation with the bureau of animal industry, is developing the fact that bank credit is as available to the progressive farmer as to the progressive business man of the city.

A letter received by the bureau of animal industry reports the following announcement published by a Wisconsin bank to its farmer patrons:

"Why not keep some of those pure bred Holsteins home? Many fine animals will be sold at the first annual sale of the Brown County Holstein Breeders' Association to be held in the Brown County Fair Grounds, West De Pere, Wisconsin, on Monday, May 10. The ——— Bank is ready to stand back of any of its customers who wish to purchase some of the stock to be offered for sale and who do not feel able at present to carry the investment. Call at the bank and the accommodation can be easily arranged."

The Supreme Evidence of DE LAVAL Cream Separator Superiority

Naturally the cream separator does not make or break the average farm user. The majority of them have no sure means of knowing just what their separator may be saving or wasting.

But the big user in the whole milk creamery or city milk and cream plant does know, and in the long run the separator means success or failure in his case.



That's the reason why 98% of the world's users of factory size cream separators use the De Laval, and why the few such machines of other makes occasionally sold soon find their way to the scrap heap.

And it may well be remembered that De Laval superiority means relatively just as much to the small as to the big user. Ten dollars a month mean as much to the farmer as ten dollars a day to the creameryman.

It's not only a matter of quantity and quality of cream, but of capacity, labor saving, dependability and durability over a long term of years.

A De Laval catalog helps to make these facts plain. The trial of a De Laval machine does so better still. Every local De Laval agent stands ready to prove them.

If you don't know the nearest De Laval agent simply address the nearest main office, as below.

DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

61 Beale Street

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TESTIMONIALS

"Cows Increased in one week 3 per cent in milk."

A. L. McCULLOCH, Alpaugh, Cal.

"I never saw hogs do so well or grow so fast as on this molasses ration."

C. H. HARTWIG, Yuba City, Cal.

"It has enabled me to keep my stock in better condition at less expense."

J. M. HENDERSON, JR., Sacramento, Cal.

"Have one calf that refuses to drink new milk—prefers skim milk with molasses. What do you know about that?"

R. HECKLEY, Santa Rosa, Cal.

"It has been a great advantage in getting the stock to clean up the roughage."

H. H. AMES, Chowchilla, Cal.

"One cow will turn down the choicest handfuls of alfalfa hay unless it has been 'Molassed'."

REDWOOD AYRSHIRE FARM, La Honda, Cal.

MOLASSES

cheaper than hay, but has same feeding value as corn or barley.

W. H. YOUNG COMPANY

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Johnson's Defender Jr.

is some boar. As an individual he ranks as one of the best in the state. His get are the type that experienced breeders demand. Let me fill your order for anything in the Duroc line. You will be pleased with your purchase.

H. C. WITHEROW

Live Oak, Sutter Co., Cal.

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Senior herd sire Altama Interest, sire of 12 cows in Register of Merit.
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One at the head of your herd will pay big dividends on his cost. Write to

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Jersey Bull

FOR SALE

A fine straight one, bred right, priced right.

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Cows that convert the roughage of your farm into the best of milk, butter, veal and beef are worth more to you than cows that are particular about their food. If you sell your milk for direct consumption, to a cheese factory, or condensary, of course, you won't consider any other breed. When it comes to butter, bear in mind that the separator shows that the Holstein cow still leads. If you have any young stock you need all that extra skim milk.

Send for Free Illustrated Booklets. They contain valuable information to any Dairyman.

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120 Hudson Street
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A few choice young bulls, Big, heavy-boned husky fellows sired by DON PERFECT 2nd, one of the best sires in the West. Priced right and guaranteed.

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One man, one horse, one row. Self Gathering. Equal to a Corn Binder. Sold direct to Farmers for 22 yrs. Only \$28 with fodder binder. Free Catalog showing pictures of Harvester. PROCESS CORN HARVESTER CO., Selma, Kansas.

When writing advertisers, mention the Cultivator.

ELLIOTT-BRANT RANCHO HAS CLASS LEADER

Elsie of the Rancho 89755, a Guernsey owned by Elliott-Brant Rancho, Owensmouth, has recently qualified for tenth place among the Class DD leaders, with a record of 8714.9 pounds milk and 548.31 pounds butter fat.

Elsie of the Rancho 89755 was bred by her present owner and was dropped in October, 1915. Her sire is Newgrove King of Briarbank 27362, Elliott-Brant Rancho's first herd sire. He is a son of King Bell 13482 and out of Imp. Newgrove Queen II 27175, one of the highest record daughters of Imp. Masher's Sequel 11462. Her dam is Elsie's Argie Granger 40056, with a record of 477.22 pounds of butter fat in Class D.

The new class leader freshened in November, 1918. In spite of the handicap of being milked with a machine



Elsie of the Rancho

Owned by Elliott-Brant Rancho. First prize three year old at state fair, member of first prize aged herd and first prize dairy herd.

in stanchions and being shipped on a show circuit during her test period, she produced more than 500 pounds of butter fat during her first year. At the end of this time she was still in good condition and was dry only seven weeks before she dropped the second calf. It was, therefore, decided to drop the first five months of her test period and extend the record as long as possible without disqualifying her from the double letter class. By this extension in her test period she lost 185 pounds of butter fat, but more than made this up in the three months and ten days of her extended record. Her largest butter fat production was during the month of March when she produced 67.48 pounds, and her largest milk flow was in February when she produced 1,157.0 pounds.

Elsie of the Rancho 89755 is a very beautiful cow. At the California state fair she was first prize three year old, a member of the first prize aged herd, and a member of the first prize dairy herd. She exhibits splendid Guernsey type which she inherited from her sire and in turn has transmitted to her two heifer calves.

SUCCULENCE FROM SORGHUM SILAGE

Sorghum silage, according to United States department of agriculture specialists, promises to become a champion yielder of winter succulence, not only for dairy cows but for other livestock which relish canned crops. Unfortunately, when sorghum was first used for silage purposes, many growers cut it too early, so that when the material was removed from the silo for feeding it was sour and acid and livestock rejected it. As a result sorghum gained an evil reputation although experiments have demonstrated that it is one of the most admirable crops for ensilage purposes that can be grown.

In five years' experiments at Hays, Kansas, the average acre yield of sweet sorghums was 10.34 tons, as compared with 8.06 tons of kafir and 3.8 tons of corn. In eastern Kansas, where the rainfall is 30 inches or more, on fertile soils sweet sorghums

have yielded 18.2 tons an acre, as compared with 1.88 tons of kafir and 11.81 tons of corn silage. Detailed feeding experiments have shown that sweet sorghum silage is proportionately equal to corn and kafir silage for either beef production or the maintenance of stock animals, although for dairy cows this variety of ensilage is less productive because of its low content of protein.

Sorghum silage should be cut when it is mature, its ripeness being denoted by the presence of hard seed. The test for ripeness is when the seed will crack when crunched between the teeth. When cut at this time it produces a fine quality silage which keeps well and is more keenly relished by cattle than corn silage. Experiments show that the average acidity of corn silage is 2.03 per cent, that of sweet sorghum silage is 1.46 per

cent, and that of kafir silage is 1.43 per cent.

WINSOR RANCH DUROC SALE

The Winsor Ranch sale of registered Duroc bred sows is to be the opening wedge in a series of bred sow offerings in the south end of the state. The Winsor Ranch offering will hold the boards at Los Angeles on July 28. Nothing is being left undone by the management to make this event exactly what it should be toward blazing the way for bigger things in the California Duroc world in the very near future. These sows are largely yearlings. From all standpoints they are a strictly select lot. They are of up to date blood lines, they are well developed, and they show the right type. Add to this the fact that the new owner is to get the whole life of usefulness of the sows bought in this sale and you have it all in a nutshell. They represent the get of such sires as Cherry's Friend, Pathfinder, Great Orion Sensation, Orion's Fancy King and Great Model. They will be bred to the two noted Winsor Ranch sires, Winsor's Giant Orion and Great Sensation 3d.

CRACK HAMPSHIRE OFFERING

California Hampshire enthusiasts are to have their inning on July 30 at Conejo Ranch, Newbury Park. The 40 or 50 bred sows selected for this public sale offering are of a character to boost the breed in every community to which they may go. To those in position to know best it is very evident that the Hampshire hog is here to stay. The breed has a splendid foothold in the south end of the state, and it is making advancement in all parts of the state. The Conejo Ranch sale catalogue will be ready for distribution by the middle of July. It will be remembered that the Conejo Ranch herd has been steadily at the forefront at every big

show the past few years. The leading families of the breed will be much in evidence on sale day.

TOUCHING THE HIGH SPOTS

An unhealthy cow will not yield wholesome milk.

Milk from a diseased cow contaminates all the milk with which it is mixed.

A cow with tuberculosis is a sick cow.

A cow with lice is not healthy.

A cow with loose bowels is unsanitary.

Isolate affected cows from the healthy herd if you would produce clean milk.

A filthy barn is a cause of filthy milk.

Bacteria in milk indicates the presence of dirt.

Advertising pays. Do it by operating a clean dairy.

A filthy barn attracts flies. Flies carry infectious diseases.

If you would have healthy and vigorous cattle, have the barn well lighted and ventilated.

Certified milk may be produced with a crude equipment if the bacterial count is low and the milk properly cooled.

You cannot strain sugar out of your coffee. Neither can you strain bacteria out of milk.

Milk permitted to dry on vessels is hard to remove.

Watering milk is an act of dishonesty.

Clean, wholesome milk will spoil on the consumers' hands if not properly kept.

It is no fault of the dairyman if milk is left deposited for any length of time on the front or back porch exposed to the sun, flies and bugs.

A friendly licking of the milk bottle by the dog or cat does not improve the quality of the milk. Remove it from the front or back stoop soon after the dairyman leaves it there. (S. O'T.).

TWO BILLIONS IN MILK

The importance of the dairy industry is indicated by the fact that during the calendar year 1919 approximately 90 billion pounds of milk were produced in the United States, enough to provide nearly 850 pounds for every man, woman and child or practically two and one-third pints per day. On the basis of the average 1919 prices this milk had a cash value to the producer of more than \$2,000,000,000.

Approximately half the milk produced is used in the production of various manufactured dairy products.

CONEJO DUROCS AT AUCTION

The Conejo Ranch, Newbury Park, will entertain breeders of Durocs at the big ranch headquarters on July 29. The public sale offering is to consist of a string of 40 or 50 bred sows noted alike for the excellence of their blood lines and the high character of their usefulness. The herd sires in use are Giant Wonder, Big Model and Pathfinder's Pride.

CALIFORNIA LAWS ON DAIRY

The state department of agriculture is issuing Circular No. 1: "Some Provisions of California Laws on Dairying." The dairyman who wants to be informed as to special provisions and requirements in dairy practice should write Department of Agriculture, Sacramento, and ask for this circular.

The Colorado River on June 8 reached the highest flood point ever known, the former highest mark being in 1917.

Vaughn's Jones

Is a boar that is siring a high class of

POLAND CHINAS

good enough for the most discriminating buyer. Come and investigate; can show you.

A. J. Van Cleef, Riverdale, Cal.

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(Founded by the Late Gov. Sparks)

Registered Herefords

Herd and range bulls reasonable.
Largest Hereford Herd in California.

W. D. Duke, Gazelle, Siskiyou Co., Cal.

Hereford Farms

Geo. Watterson, Owner
Bishop, Inyo County, Cal.

Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

CLEAN UP THE STABLE FLY

Have you ever tried to sleep on a hot summer night when just one mosquito had crept through the window screen? Imagine your state of mind if that single mosquito were multiplied by 100 and you had your hands tied!

That sensation, according to the bureau of entomology, is something comparable with what a horse, mule, or cow endures when the stable fly is present in great numbers.

The stable fly greatly resembles the ordinary house fly but for the lance with which he is armed. It is known that he carries disease from infected animals to healthy ones, and there is some ground for belief that the insect aids the spread of spinal meningitis among human beings.

The eggs of the fly are laid in loose, warm straw heaps and piles of stable refuse. A plague of flies always starts from these sources, and the control of the pest is best managed by scattering the straw early in the spring before the beginning of warm weather and plowing it under, or by burning it when former method can not be applied.

Stable refuse should be scattered at regular intervals of one week or less throughout the season, starting with early spring. In this way the first generation of the pest is destroyed and a plague averted. A recent publication of the department, *Farmers' Bulletin 1097*, gives in detail the life history of the stable fly, methods of its control, and some facts concerning the amount of damage done by the insects. This may be secured on request to Superintendent of Publications, Washington, D. C.

HAND JERSEYS DISPERSED IN OREGON

Dr. H. W. Hand of Orland dispersed his well known herd of Jerseys at a sale held recently at Salem, Oregon. Dr. Hand was influenced to sell in that state on account of the strong place occupied by Jerseys in the Northwest. Included in the sale were a number of well known prize winners and the one time world record cow, Goldie's Nehalem Beauty. The following list details the sale:

BULLS

Blossom's Liberty Bond, July 3, 1917; R. L. Rice, Sheridan, Oregon; \$175.
Blossom's Fox Keep On, October 30, 1919; H. A. Beer, Arcata, California; \$360.
Lolita's Liberty Bond, November 9, 1919; J. R. Hayden, Mohawk, Oregon; \$100.
Agnes' Golden Boy, December 25, 1919; M. Weinacht, Woodburn, Oregon; \$60.

FEMALES

Goldie's Nehalem Beauty, May 8, 1912; Watt & Acree, Hood River, Oregon; \$960.
Imp. Brilliant Spray, September 12, 1909; Shortley Bros., Orcas, Washington; \$230.
Brilliant Jersey Queen, March 18, 1916; Watt & Acree; \$1,000.
Brilliant Spray's Gloriana, November 25, 1918; Fox Bros., Silverton, Oregon; \$425.
Brilliant Spray's Bagatelle, October 10, 1919; W. N. Meserve, Gray's River, Washington; \$275.
Foxhall's Sweet Blossom; March 3, 1918; Watt & Acree; \$405.
Royal Queen's Pretty Girl, October 16, 1914; Watt & Acree; \$300.
Luma's Lola, May 2, 1917; Watt & Acree; \$850.
Birdie's Agnes, September 20, 1916; Watt & Acree; \$480.
Oxford's Daisy Sweet Maid, January 12, 1914; M. W. DeGuire, Silverton, Oregon; \$255.
Foxy You'll Do, February 2, 1913; A. F. Hobart, Silverton, Oregon; \$325.
Belle's Starry Gem; Shortley Bros.; \$90.
Aggie of Tintagel, October 28, 1918; W. F. Kessel, Grays River, Washington; \$255.
Estell of Tintagel, September 24, 1918; W. N. Meserve; \$235.
Maide's Liberty Lass, August 7, 1919; Shortley Bros.; \$165.
Queenie's Liberty, August 2, 1919; M. W. DeGuire; \$355.

CHEAP FEED AND CULLING ARE NEEDED FOR HEIFERS

The importance of providing cheap feed for growing heifers and practicing thorough culling is brought out by the results of feeding experiments recently completed by the dairy division, United States department of agriculture. In these experiments groups of calves were fed from birth to one year and two years of age and a record was kept of all feed consumed.

In one experiment, 11 heifer calves were raised to the age of one year. The average amount of feed consumed by each calf was as follows: Hay, 571.8 pounds; grain, 885.5 pounds; silage, 3,693.1 pounds; milk, 110 pounds; skim milk, 2,414 pounds. Estimating the hay at \$30 per ton, grain at \$6, and silage at \$8 a ton, milk at four cents, and skim milk at three-

fourths cent per pound, the cost of raising each heifer to one year of age was \$72.42.

Five of the calves from the first experiment were then fed for one more year. During this second year each calf consumed on the average, 1,117.8 pounds of hay; 1,221.6 pounds of grain; 8,031 pounds of silage. Using the same figures for computing the cost of the feeds consumed during this second year, the total cost of raising a heifer from birth until two years of age was \$157.96. These figures emphasize the necessity of providing for heifers cheap feed such as pasture and silage, and bring out the importance of carefully culling the heifers to avoid raising those which will prove to be inferior cows.

COW TESTING WORTH WHILE

Practical reports from the various cow testing associations throughout the country show the value of this work of separating the chaff from the wheat in cowdom. The modern cow testing association is the best scientific agency for isolating and eradicating the drones from the herd, while it also is of value as a detector of the highest producing animals. Such studies of the cow's appetite, digestion, and production are the economical and logical methods of increasing the net earnings of the dairy.

One Ohio cow testing association, whose members owned 385 cows last year, reports an association average of 345 pounds of butter fat per cow, and that the present production of the cows is 72 pounds of fat more apiece than it was at the first of the year.

Another cow testing association announces that its expenses during the last five years have been below \$4,000 while the value of the increased production during only the last year has aggregated over \$11,000. This remarkable increase in income is not abnormal for this particular association as during each year the production of the cows has improved and the returns greatly increased. Members from another association report that all other cow owners are feeding the individual animals according to the capacity and production of each cow. This is a remarkable change from conditions a few years back when the cows' feed boxes at mealtime always contained the same allowance of feed.

"There is certainly all the difference in the world between bulls," comments a member of a successful bull club. "Do you recollect that old 'Bonnie' cow of mine whose record was only 537 pounds of fat? I have raised three heifers from her, the best of which produced 715 pounds of fat during the last year, while the other two heifers, which are younger, yielded respectively 363 and 361 pounds of fat. These heifers were sired by different pure bred bulls and evidently the difference in the qualifications of the sires as regards fat production is aptly characterized in the production of their daughters."

HORSE AND MULE POPULATION INCREASING

Despite the claims of truck and tractor manufacturers that horses and mules are destined to disappear they are bringing on the market today the highest prices ever paid and the demand is greater.

As proof of this the estimate of the federal department of agriculture for January 1, 1920, shows an increase of 1,276,000 horses and 785,000 mules over the 1910 census. Besides from January 1, 1910 to June 30, 1919, 1,149,763 horses and 36,836 mules were exported, and the end is not in sight. For predictions by good authorities are for a steady rise in prices. Therefore, breed your good mares to a first class stallion this year.

CLEAN UTENSILS, CLEAN COWS, CLEAN BARNS GIVE CLEAN MILK

Children love milk; so do bacteria. Children grow and thrive on milk; so do bacteria.

The problem of the man who produces milk is to keep it intact for its ultimate and lawful consumer. The bacteria which are most fond of milk are those which law and order are in arms against—tuberculosis, diphtheria, typhoid and scarlet fever.

"Milk, to be free from germs, must be kept in germ free containers," says C. Seymour of Colorado agricultural

college. "Secondly, it must carry no dirt with it from the exterior of the cow, and, thirdly, no dust must fall into the milk after it is drawn."

The department of agriculture recently carried out an experiment on the bacterial content of milk. The milking was done under ordinary unsanitary conditions. These astonishing figures resulted: The cans used were small topped. Sterilizing these cans reduced the bacteria per cubic centimeter from 60,000 to 17,000. Simply wiping the udder and flanks of the cow resulted in the further reduction of the bugs to 3,000.

It was also discovered that by cleaning the stable daily and using plenty of litter for bedding that a minimum of time was necessary to groom the cows.

Milk is the only standard animal food which is consumed raw, and it forms one-sixteenth of the daily diet of every person in the country. Milk is a perfect medium for the growth and multiplication of bacteria.

It is therefore seen that the utmost cleanliness must be exercised in the production of commercial milk.

Clean utensils, clean cows and clean barns will give clean milk.

THE SCREW WORM FLY

Some time ago warning was issued by the division of animal industry of the state department of agriculture regarding the ravages of the black blow fly. Numbers of animals, particularly sheep, have been observed that were badly infested with the maggots of the black blow fly. In many instances if proper precautions had been taken this would not have happened.

We are soon to be confronted with the task of suppressing the activities of another species of insect pest that is more destructive to livestock than the black blow fly; viz., the screw worm fly. This fly is commonly known to stockmen as the "redhead." It is of medium size, has a bluish green body, and on the back between the wings three longitudinal black lines are visible, while the head appears either reddish or yellowish in color.

The resistance of the screw worm fly to low temperature is not great and for that reason it will not make its appearance in great numbers until the weather continues warm. Its field of activities is broad and of a very serious nature. From the human family down to the smallest rodent it carries on its depredations, producing immense damage. When man is attacked the insect usually deposits its eggs in the nose at a time when the individual is afflicted with diseased membranes. Here the eggs hatch in from one to three days, depending on the temperature, and the maggots immediately begin to burrow into the tissues of the nose and throat, producing untold suffering. Fresh wounds on animals are most frequently attacked by this insect, but it does not entirely disregard old sores. A single screw worm maggot is extremely destructive to tissues over a large area.

Carcasses, particularly those not exposed to the rays of the sun, are the favorite breeding places for blow flies. Bury or burn all carcasses and screw worm flies will not be numerous.

The maggots in a wound may be destroyed by introducing into it a small quantity of chloroform or a dilute solution of carbolic acid or coal tar products.

Lambert's
HEALTH FOR CATTLE

REMEDIES FOR
Cow Cleaning,
Breeding and Abortion,
Scouring Calves,
Hog Cholera
An Insect Destroyer
A Poultry Food

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Mountain Raised—Healthy**

100 Cows and Calves

100 Heifers and Cows

Inspect Cattle at Howard Ranch
12 miles Southwest of Chowchilla,
Madera County, Cal., or write

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They will increase cattle profits by adding pounds of beef to every steer sold. For the best of breeding and individuality visit my herd and see the kind that win at the best shows. Prices reasonable. You'll be welcome.

JOHN A BUNTING
Mission San Jose Cal.



ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, or Muscles. Stops the lameness and pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone and horse can be used. \$2.50 a bottle at druggists or delivered. Describe your case for special instructions and interesting horse book 2 R Free. **ABSORBINE, JR.**, the antiseptic liniment for mankind, reduces Strained, Torn Ligaments, Swollen Glands, Veins or Muscles; Heals Cuts, Sores, Ulcers. Allays pain. Price \$1.25 a bottle at dealers or delivered. Book "Evidence" free. **W. F. YOUNG, Inc.**, 244 Temple St., Springfield, Mass.

GOLDEN GLEN STOCK FARM

Walnut Park Noble 142138 is at head of our Golden Glen Jerseys—60 females in herd.

The official test is the instrument through which our Register of Merit animals are to become known to the public. Visitors welcome.

Geo. W. Thomas & Sons, Arlington, Cal.

PUBLIC SALES OUR BUSINESS

We are in the livestock public sale business to stay. We can and do get the high dollar for our employers. We have the buyers with us always. Let us figure your next sale.

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Why Shouldn't He Smile?

A little ingenuity and he has been relieved of those killing, monotonous tasks so common on the farm.

One G-E Motor

is being used to drive a feed cutter, a grinder, and a pump.

The electric way is the modern way, the proven economical way.

The General Electric Company manufactures all sizes of motors for farm use. Information will be gladly furnished by your lighting company, or our nearest office.

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WALTER A. WOOD MOWERS AND RAKES

These are high grade machines, made in one of the oldest and largest implement factories in the world. Strictly independent of any trust. Sold on quality and merit only. Our GIANT ADMIRAL Mower, heavy alfalfa type, has wide tire, steel reaper pattern wheels.

Buy no other. Write for catalog. Call and see them when in the city.

ARNOTT & COMPANY
112-118 SO. LOS ANGELES ST. LOS ANGELES, CAL.

GLOBE "A1" FEEDS

- Judge them on Business Principles!

FEED FOR SWINE,
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PACIFIC NEW AND RENEWED PIPE SAVES MONEY
Renewed screw casing costs from one-half to two-thirds less than standard pipe. Large savings on standard pipe, fittings and valves, special fittings made to order. Pacific Pipe is thoroughly tested and guaranteed for 150 pounds working pressure; asphaltum dipped; serves every purpose. Let us save you money. Write
PACIFIC PIPE CO. 237 HOWARD STREET
SAN FRANCISCO

The Cultivator Costs Only \$1.00 Per Year

Why the Egg Laying Contest?

By Max Kortum

HIGH producing stock is the one foundation for the future welfare of the poultry industry. The mediocre stock of today will soon be a thing of the past, for with the ever increasing price of feed and operation culling of such stock has become an absolute necessity, and we hear or read of it daily in the terms of "Failure in the Poultry Business." The poultryman can be thankful that nature stands at hand to help him out of this dilemma if he will but use her. The law of heredity—that like tends to produce like—is the keystone on which rests final success in the culture of all plant and animal life by mankind. It has been resorted to many years, and nearly all agriculture today thrives on the result of the work that has been done, but from the progress made from year to year it seems that the goal is still far ahead. Selecting and mating the right parents is the secret of this work; the law of nature will do the rest. It sounds simple and is simple to the careful observer and breeder, but the average layman is apt to misinterpret and take this law too much at its face value. It works both ways, and by mating two parents the breeder must always

test that his hens do possess unusually good egg producing qualities, then the public will have a sound basis for their belief, and the breeder on the other hand will be receiving greater and wider advertising than he ever could afford himself. The reports from the egg laying contest are published in all the leading agricultural journals of the state and nation and all extraordinary high records quickly become known the world over. Just think for a moment what this means. It means that for the small cost of entering his birds in an egg laying contest the breeder obtains nation wide publicity if his birds make good. A breeder does not necessarily have to win in a contest to show that his stock is good; this is often a matter of luck for the man who is fortunate enough to pick out just the right birds. And again slight ailments at times may prevent a good hen from doing her best, and this will give the owner a setback in the total production of his pen; but in case of such misfortune he always has the chance of making individual records.

The egg laying contest, however, has another great value besides that of showing the public the quality of a breeder's stock, and that is to help

POULTRYMAN'S CALENDAR—JULY, CULLING THE LAYERS

June, July and August are the best months for culling. By the first of July some of the slackers are beginning to molt. Remove them at once and for good.

The heavy producer is by this time faded in shanks, beak, vent and earlobes, but her comb is still red, her abdomen full, soft and warm. She should continue to lay till September.

All hens with wilted combs, all hens with bright yellow shanks, all hens that stop laying, except for their first broody spell, should be thrown out in July. They are not profitable.

The molting test is the surest of all tests for fecundity. The early molter is invariably the low producer. The late molter is the heavy layer. Have no scruples about getting rid of the hens that molt in July.

bear in mind that he is also apt to be intensifying any bad characteristics as well as the good ones, especially if both parents possess the same weakening or undesirable tendencies. These latter characteristics are frequently latent and only a carefully kept past record of the individual will prove this.

Much work has been done with poultry along these lines with some wonderful results. It was not many years ago that the 200 egg hen was the goal for which breeders were working; then it was the 250 egg hen; and still later the 300 egg hen which some breeders believed never would be gotten. And now we read of a 330 hen. What next? Will it be possible for a hen to lay every day in a year? Who knows! The time will come, and it will not be so many years, when the better commercial flocks will average 200 eggs per hen. The average for this country today is somewhere around 87. Under the pre-war conditions this average could possibly have just existed, but it cannot today. At the present time a hen has to lay almost ten dozen eggs to cover all expenses; this means that a flock has to average around 150 to make the business worth while at all.

Hence the mainstay of the poultry industry today is better stock, and the best stock we have is that selected with the help of the trapnest. It will not be many years when the greater portion of the stock offered on the market will have to carry some sort of reliable pedigree so that the buyer can feel assured that he is getting something which under the proper care will net him a profit. This means that the poultry of tomorrow is today in the hands of the breeder who is trapnesting and doing careful breeding. This man stands at the head of the row, and the egg laying contest is the gateway to his field of business by way of an honest and inexpensive road to publicity.

The general public will not as a rule place too much faith in the words of a breeder himself as regards the quality of his stock, for it has been fooled too often on that 200 egg stock story. But when that same breeder who advertises such high producing stock can demonstrate in an egg laying con-

test that his hens do possess unusually good egg producing qualities, then the public will have a sound basis for their belief, and the breeder on the other hand will be receiving greater and wider advertising than he ever could afford himself. The reports from the egg laying contest are published in all the leading agricultural journals of the state and nation and all extraordinary high records quickly become known the world over. Just think for a moment what this means. It means that for the small cost of entering his birds in an egg laying contest the breeder obtains nation wide publicity if his birds make good. A breeder does not necessarily have to win in a contest to show that his stock is good; this is often a matter of luck for the man who is fortunate enough to pick out just the right birds. And again slight ailments at times may prevent a good hen from doing her best, and this will give the owner a setback in the total production of his pen; but in case of such misfortune he always has the chance of making individual records.

And now we come to what an egg laying contest must be. It cannot be a Tom, Dick and Harry affair, for then we have the same questionable basis as a government experiment project and have an entirely unprejudiced and honest management, backed by the best authorities. The reports go out to the poultry world and must be accepted as authentic. The hens should be given such care in housing and feeding as will give them every possible chance to produce their maximum yield, but no highly expensive methods of feeding or care should be employed. The contest should be run on the same basis as a well conducted commercial plant, and in this way it becomes a model and stands as an example to all other poultry yards.

California has today such a contest, and it behooves every good breeder and poultryman to try to get his stock represented in it. The California Farm Bureau Egg Laying Contest located at Santa Cruz, although

FOR GREATER EGG PRODUCTION
FEED
COULSON'S EGG FOOD
FULL PARTICULARS IN OUR FREE BOOK "CHICKENS FROM SHELL TO MARKET"
Coulson & Co.
PETALUMA, CAL.

in operation but seven months, has already attracted the attention of poultrymen from all over the nation. The records so far established are running in close competition to those being made at other contests in spite of the fact that the average quality of the stock in the contest is not as high as that supposed to be in those contests that have been in operation for years, for, as mentioned before, many of the birds are just picked out of commercial flocks, regardless of any special breeding. Those pens at the eastern contests that are leading the California contest a little are all of the heavier breeds, whereas all the birds in the California Farm Bureau Egg Laying Contest, except for one pen of Anconas, are White Leghorns. The California Farm Bureau Egg Laying Contest is in charge of a board of directors appointed by the Santa Cruz farm bureau, with the poultry division of the university farm at Davis aiding in an advisory capacity. Although the poultrymen of Santa Cruz built and boosted the contest they have nothing to do with its management so far as the care of the hens is concerned. The committee in charge is now considering plans for a contest plant that will accommodate 100 entries, which will mean 1,200 birds. The next contest year will start on the first of next October; entries will be open to all pure bred varieties of chickens from anywhere.

Poultrymen of California, make your slogan "Better Poultry." The time has come when you have to do it.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

By Max Kortum

The 340 contesting hens at the contest laid during the past week 1,347 eggs, a decrease of just 50 eggs from the previous week's production. Percentage of production was 56½ for the week. The seventh month of the contest ended on the night of June 15. A report for this period will be published next week.

High pens for the past week are: Gibson, 51 eggs; Rose, 50; Bellows, 50; Gray, 49; Clark, 49; Wood, 48; Gibson, 48; Barker, 47; Peck, 46; Walls, 45; Wilson, 45; Stephenson, 45.

AMERICAN EGG LAYING CONTEST

By Russell F. Palmer

In spite of the extremely damp and cloudy weather during May the pullets in the American egg laying contest on our experimental farm at Leavenworth, Kansas, made more than satisfactory records. After a careful examination of individual records of each pullet in the contest Prof. Quisenberry, the director in chief, reports the majority of the fowls in a highly pleasing condition; in fact, a condition that should carry a large per cent of them through the hot Kansas summer weather with good producing records. Naturally, the records of many of the larger breeds were somewhat affected last month on account of broodiness, but on the whole this has not proven so hard to deal with this spring as last. An error in addition of totals was made in last month's report, which placed the wrong pen in the lead up to May 1. This has since been found and corrected in auditing.

The following lists give complete condensed figures both for the month of May and since the beginning of the contest. A total of 30,513 eggs have been produced since November 1. This is an average of 113 each for all 270 pullets over a seven months period.

Highest Pens for Seven Months

S. C. White Leghorn, Pennsylvania, 771 eggs; Rhode Island White, Kentucky, 731; S. C. White Leghorn, Iowa, 707; White Wyandotte, Pennsylvania, 695; S. C. White Leghorn, Texas, 693; S. C. White Leghorn, Washington, 674; S. C. White Leghorn, Missouri, 661; S. C. White Leghorn, England, 660; White Orpington, Ohio, 657; S. C. Rhode Island Red, Nebraska, 641; S. C. Rhode Island Red, New York, 641.

Highest Pens for May

S. C. White Leghorn, Kansas, 128 eggs; S. C. White Leghorn, Kansas, 125; S. C. White Leghorn, Texas, 124; S. C. White Leghorn, Michigan, 123; Rhode Island White, Kentucky, 120; S. C. White Leghorn, Ohio, 120; S. C. White Leghorn, Illinois, 119; S. C. White Leghorn, Pennsylvania, 118; S. C. White Leghorn, New York, 118; S. C. White Leghorn, Pennsylvania, 117.

HULLED BARLEY

The latest economy in poultry feed is the hulling of barley. Many growers have felt they secured more satisfactory results in using as a poultry feed by soaking or even sprouting the barley. This was satisfactory to the hens, but rather bulky, and gives an amount of "roughage" which is not acceptable to the poultry constitution, that is, where highest production is secured. This has been overcome to an extent by hulling the barley, with, however, considerable loss in weight and bulk and slight loss in feeding value as it has seemed necessary in removing the hull to take off a portion of the outer coating, or bran, of the barley in order to secure the hull. Now, however, the Poultrymen's Co-operative Milling Association has corrected this by the installation of a machine especially adapted to the work, taking off only the outer or coarse hull. This does cause about two per cent loss in the total protein content of the feed and a weight shrinkage of from 13 to 18 per cent, but the greater value of the remainder is sufficient to justify the loss and the expense of the hulling.

Ventura farmers under the distribution system of the Southern California Edison Company have filed complaint with the railroad commission charging the company with failure to provide them sufficient water to irrigate their land.

Poultry Queries

Conducted by J. A. Koethen

Partridge Rocks

Kindly let me know the name of a breeder of Partridge Plymouth Rocks who has cockerels for sale at a reasonable price.—H. T. R., San Fernando.

Neither the Cultivator's advertising columns nor the list of entries at the last show discloses the name of a Partridge Rock breeder. If any of our readers have birds of this beautiful breed, now is a good time to let it be known.

Sick Goslings

My two months old goslings are sick. Their wings droop, they can hardly walk, and their legs seem to be swelling. They range all over the ranch and have a good ditch of water to wade in. What shall I do for them?—Subscriber, Isabella.

I fear your goslings have developed rheumatism from wading in that ditch. You do not say how cold the water is nor how long the goslings have been wading, but young waterfowl need to be protected from getting wet till their feathers are grown, and running

water is colder than a puddle would be. Confine them in a sunny, sheltered yard, but not without shade, give all the green feed they will eat and twice a day a mash of bran and middlings or bran and corn meal moistened with water till it is crumbly but not sloppy. You might also put a quarter of a teaspoon of Epsom salts for each bird in the drinking water, but your main dependence must be on a warm, dry environment. If their legs swell badly paint the swelling with iodine.

Turkey Troubles

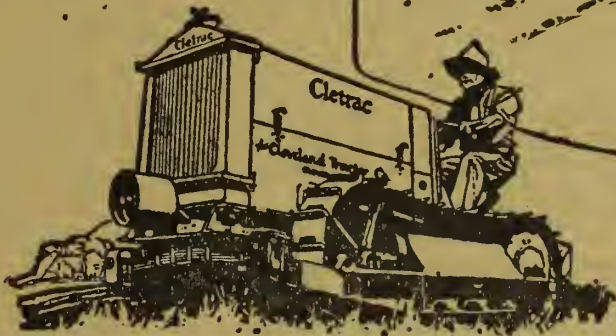
Last week I saw the wings of some of my little turkeys drooping, and when I examined them I found mites on top of the wings in the grooves where the feathers come out. I greased them first with lard and sulphur and afterward with lard and coal oil, but they seem no better. Now one of the older ones that is shooting the red is dumpish and does not care to eat. What shall I do?—Subscriber, Garden Grove.

If you saw any sort of insect crawling on the wings of your turkeys that is enough to make them sick. Lice are something young turkeys cannot stand. Grease is not as good as dust. (Continued on Page 27.)



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TRACTOR



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Speed up your discing work by putting a CLETRAC on the job. This sturdy little tractor, powerful, rapid and tireless, will replace six to eight horses, work twenty-four hours a day if necessary and seven days a week. Used alone or in "fleets," the CLETRAC is the ideal tractor for every size ranch—for every type of work.

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We are offering to the California public the Reliable Blue Flame Brooder. It has a capacity of one thousand chicks. Burns one gallon of common kerosene oil in twenty-four hours, without gas, soot or odor. The most perfect brooding device yet placed on the market. In use, and endorsed by the Oregon Agricultural College, and the Western Washington Experiment Station, and two hundred other satisfied users in and around Seattle. We are western distributors. Have some good territory open. Write for circular. Queen Hatchery, 89 Pike Street, Seattle, Washington.

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A Fireless Brooder with every order of one hundred chicks. We ship in the brooder, thus there is no chance of chilling in transit and you have an excellent way to raise them. We have the following varieties of thoroughbred chicks every week: Anconas, Barred Rocks and R. I. Reds, \$20.00 hundred. Extra fancy dark R. I. Reds and White Rocks at \$25.00 a hundred. White Leghorns \$17.50. We guarantee safe delivery. Every one a strong, healthy chick. Orange County Hatchery, 403 E. Santa Clara, Santa Ana, California.

Spring Baby Chicks For Sale—400,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) Stock. Price during May and June, 25, \$5.00; 50, \$9.00; 100, \$14.00. Special prices 500 and 1000 lots. Safe delivery guaranteed. You pay only for chicks received alive and in good condition; no money in advance, pay on delivery. Shipped safely anywhere west of the Rockies. Finest hatchery in the world. Established 1898. MUST HATCH INCUBATOR CO., PETALUMA, CALIF., 438 Seventh St.

White Leghorns — From the home of heavy layers. Buying carefully selected spring cockerels now is economy. We have them from our choicest pens. All breeders have orchard range. Fall chicks pay big. Free folder tells why. Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, California. Phone 492.

Baby Chicks for August and September delivery. Barred Rocks and R. I. Reds, \$20 per 100. Fall delivery Anconas, \$20; MacFarlane strain W. Leghorns, \$16. Send 25 per cent of amount with order, balance before shipment. Hargett Hatchery, Route 2, Compton, California.

Baby Chicks from my carefully selected, thoroughbred flock of S. C. White Leghorns. May, June and July delivery at \$13.00 per 100. Good, strong chicks at this reasonable price. Write for particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

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S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write Henry Miller, Supt.

Thoroughbred B. P. Rocks, Trapnested Cock and Cockerel matings, 250 egg record and better, mine 210 and better. Fertile eggs, \$2.50 15, chicks, 25¢. Phone 5599, Mrs. M. A. Warren, 36 Little Delmas Ave., San Jose, mornings only.

For Sale—Thoroughbred Brown Leghorn hens, year old in March. Fine cockerels and pullets hatched first of March. Also some R. I. Reds, cockerels and pullets. Eva V. Conklin, 1445 Portola Avenue, Los Angeles, California. Phone 351283.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vadden, Los Gatos, California.

Breeding Cockerels—Barred and White Rocks, Reds, Orpingtons, Anconas, Minorcas, Buff, White and Brown Leghorns. Day old chicks in season. Enoch Crews, Seabright, California.

Buff Orpington, Buff Ducks, Bourbon Red Turkeys, White Guineas. The Ferris Ranch, S. Reservoir, Pomona, California.

White Minorca Baby Chicks and Hatching Eggs — Dark Cornish and Silver Campine eggs. Folder. Leech Poultry Yards, Baldwin Park, California.

For Sale—S. C. White Leghorn chicks, \$11.50 per 100 from Hoganized stock. We ship by Parcel Post C. O. D. Welty's Hatchery, Petaluma, California.

Baby Chicks from selected egg type S. C. White Leghorn hens. Tupman Poultry Farm, Box 7-C, Ceres, California.

LIVE STOCK

BUTTE CITY RANCH

Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Next sale at Ranch, Wednesday, August 11, 1920. W. P. Dwyer and W. S. Gullford, Box C, Butte City, Glenn County, California.

Grape Wild Farm—Berkshires, Guernseys. Big Type Berkshire Boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion. A. B. Humphrey, Prop., Escalon, California.

Carruthers Farms—Live Oak, California. Shorthorn cattle and Berkshire swine of quality and select breeding.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

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TREES

For Sale—Ten thousand one year Sour Seedlings, six inches up to twenty. No better stock to be had. Price \$60.00 the thousand, also 500 ½ inch up Valencias one year, \$1.40 each. 300 pedigreed Eureka Lemon trees ¾ inch up, two years. The above is first class, fine roots. C. W. Wilhite Citrus Nurseries, Home 303, Glendora, California.

For Sale—Macientia Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. Ketscher's Nursery, 1101 E. 4th St., Santa Ana, California. Phone 572WK.

50,000 Florida Sour Orange Seed Bed Trees; 100,000 California Sweet Seedling Seed Bed Trees; Valencias, Eureka Lemons; Supply Co. buds. SOUTHLAND NURSERIES, 1941 East Colorado St., Pasadena, Cal. Phone, Colorado 6352.

For Sale—1000 performance record Eureka Lemon Trees, two year buds. Nursery Colorado and Huntington Drive, Lamanda Park. Paul B. Magee, R. D. 2, Pasadena.

For Sale—Sacks and Burlap for balling trees. J. Ross, 313 N. Boyle Avenue, Los Angeles. Telephone Boyle 1800.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—4 Year Old Manzanillo and Mission olive trees. E. E. Barnes, Highland, California.

Fruit Trees—Berry Plants scarce, order now. Cash Nursery, Sebastopol.

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Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—Entire herd of A-1 Jersey dairy cows, about 33. Address Perry Dresser, Rt. C, Tulare, Cal.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Wineville, California. E. R. Stalder, owner.

Registered Holstein Bulls of various ages for sale. Milbrae Dairy, Milbrae, California.

Sunshine Farm Jerseys — No females for sale. Bulls from high testing cows for sale. E. E. Greenough, Merced.

Reg. Shorthorns—Fair Oaks Ranch, Wilts, California.

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For Sale—Burbank's Early Mortgage Lifter Blackberry Roots. Earliest Blackberry on the market brings big prices. Ripens in March and April. Price \$1.00 a dozen. \$7.50 a hundred. Address D. A. McAleese, 1000 W. Broadway, Whittier, California.

Rhodes Grass—Is making Imperial Valley famous and will make any other section famous, if it is planted, especially if the soil is hard or alkali. Write Imperial Valley Seed House for Literature. El Centro, California.

All Kinds Seeds — Plants and Nursery stock. No. 1 Alfalfa 35¢. Sudan 8¢ and up. Dwarf Milo Maize, Honey Sorghum, Amber Cane. Box 501, Fowler, California.

Pumpkin Seed — Mixed Pumpkin Seed, good germination, 25¢ per lb. Aurora Seed Mill, Stockton, California.

WANTED

Wanted—A working foreman for 35 acre dairy ranch, with 116 acres pasture land. First class wages to a first class man, 40 cows, milking machine, 5 room modern house, good school near, 3½ miles from Santa Ana. Address 1324 Spurgeon St., Santa Ana, California.

Ranch Mechanic—At present employed on a ranch, wants position. Has practical experience with gas engines, pumping plants, tractors, trucks and all makes of cars. Can handle help; keep time and do buying. Box 3, Cultivator, Los Angeles.

Wanted—Dairyman to take charge of herd of about 75 Ayrshires in Santa Barbara County. State experience, wages expected and religious affiliation if any in letter. Box G. B., Cultivator, Los Angeles.

Wanted — to hear from owner of good ranch for sale. State cash price, full description. D. F. Bush, Minneapolis, Minnesota.

Married Dairyman desires position on ranch; purebreds preferred. Educated; lifetime experience. Box S. R., care California Cultivator, Los Angeles.

Wanted—Immediately, experienced bud- ders and tiers. Address or phone Kirkman Nurseries, Fresno.

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I Have the Only English herd of Pure Bred Berkshires in the West. There is not a weakling or a runty pig in all the litters of these English sows, sired by the Champion of England. It has been claimed that the English Berkshires have the largest and strongest litters. The pigs' sire is one of the greatest sons of the famous Epochal. If you want a boar pig that will put bone, heart and vigor into your herd you had better order him now. They are going fast and they are guaranteed to please or your money refunded. Boar pigs \$35.00. Sandercock Land Co., 703 Market Street, San Francisco. In charge of Natomas land sales.

A few choice young boars sired by

"Achlevar" out of Grand Champion. 600-

700 lb. Sows for sale at \$50.00 each.

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Sow Pigs and Boar Pigs sired by Ames Rival 118th, Ames Rival 70th, Ideal Royal Lee, Champion Masterpiece 8th, Escalon Majestic and Achlevar and out of prize winning sows. A postal will bring prices. Geo. A. Stingle, Lark Meadow Ranch, El Monte, California.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calae Orchards, Martinez, California.

Real Good Berkshires, cholera immune Frank B. Anderson, Box 724, Sacramento, California.

DUROC-JERSEYS

Hogs—Duroc-Jersey, big type, Registered. Brookwater blood lines, 6 bred gilts due to farrow August; \$150 each. Will weigh 300 and over; also 5 brood sows, Eastern and California bred, three and four years old; will weigh 600 and over, \$200 each. Must be sold at once. Apply Sells Ranch, P. O. Box 88A, Route 2, Merced, California, or 1010 Claus Spreckles Bldg., San Francisco.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

Bargains in Bred Sows and Gilts—Pathfinder and Great Wonder I Am blood. Derryfield Farm, Capitol National Bank Bldg., Sacramento, California.

L. & M. Ranch, Van Nuys — Buy our young boars by such sires as May Rose King, Winsor's Giant Orion, Orion's King Gano, Top Sensation 3rd.

SWEETWATER DUROCS The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co. Address: R. K. Walker.

Durocs — Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. J. L. Stevenson, Van Nuys, California.

December and March Duroc boars; Pathfinder breeding. Sterling Smith, Route 1, San Diego, California.

For the Best in Durocs write June Acres Stock Farm, Davis, California.

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Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. J. H. Crawshaw, Hanford, California.

The Big-Type Polands direct from Iowa. The best blood lines in the game by the Iowa man. J. L. Dunlap, Pomona, California.

The Grand Champion El Profitto heads our big type Poland Chinas. Letters promptly answered. Viola L. Renwick, Santa Barbara, California.

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My Victor Herd — Headed by Billiken Chester Whites. For quality and big litters. E. E. Fulton, Box 7, Fair Oaks, California.

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White Pekin Baby Ducks—White Pekin Duck Eggs for hatching. 152 East Spruce St., Inglewood.

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White Muscovy (Quackless) Ducks—Eggs, Ducklings, Breeders. Free circulars. Caldwell Farm, Box 274-E, Los Angeles.

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Men With Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write J. H. Yetter, 115 North Broadway, Los Angeles.

Wanted — Salesman who can sell high-grade, dependable nursery stock; exclusive territory; outfit furnished and cash advanced weekly. Commission basis. Address Albany Nurseries, Inc., Albany, Oregon.

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300,000,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book, THE HOMESSEEKER, which tells you how to acquire this land, or send \$2.00 for book direct. The Home-seeker, Dept. M, 813 Grant Bldg., Los Angeles, California.

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Lake-side Orange Grove Only \$6,000, Easy Terms.

10 acres sloping gently to wonderfully beautiful lake; surrounded large shade trees; near city; orange grove 252 trees, 80 grapefruit trees, 15 figs, 8 avocado, also guavas, blackberries, dewberries; 6-room bungalow, broad veranda, over-looking lake; garage, other buildings; only \$6,000, easy terms. Details page 54 Strout's New Catalog Orange Grove and Other Semitropical Farms. Copy free. STROUT FARM AGENCY, 503-E.J., Wright-Callender Bldg., Los Angeles, California.

Ranch for Sale—160 acres ½ mile south of Yermo Division Point, S. L. R. R., formerly called Otis, San Bernardino County. About 30 acres in fence and has been cropped. House and well for domestic use. One deep well for irrigating, complete with 6 inch pump, 20 H.P. engine. Water lift about 20 ft. Watermelons, tobacco, cotton, milo do well here. Now is the time to see it while things are growing. Will sell on easy terms, and might exchange part for good property. Further particulars, address F. C. Brandt, Yermo, California.

120 Acres irrigated alfalfa or fruit land, 52 acres cleared, 36 acres partly cleared, balance timber. Price \$5,000; 2-3 cash, terms on balance. Abstract title, plenty water. No trade considered. Located in Happy Valley, Shasta County, California. Write Box 133, Cottonwood, Shasta County, California.

For Sale—Five acres choicest level nursery land, picked with the intention of putting in a nursery of my own which ill health now prevents me from developing. Good well can be easily connected with power line nearby. For particulars write or call, V. N. Lucas, Corning, California.

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10-20-40-60 and 80 acre ranches, rich, level, plenty water; produce grapes (Thompson seedless), fig and alfalfa land. Price right, easy terms.

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Some of the finest dairies in the state. Chas. McNeely, Alpaugh, California.

\$5,500 for the most beautiful home in pretty Fallbrook, ten acres rich land highly improved. Unlimited quantity of pure soft water, good house, fruits and garden, flowers, good neighbors; an ideal spot, a snap. Write Box 13, Fallbrook, California.

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Buy cheap, good alfalfa and fruit land in the easy lift water district near improved dairy and hog ranches. \$50 to \$75 an acre, one-fifth cash. Send for circulars. The R. & L. Ranch, 611 Fay Bldg., Los Angeles.

Canadian Wheat Land — 160 acres improved, 1½ miles from town of 4000. \$50 per acre. Terms. P. O. Box 98. Merced Falls, California.

If interested in securing farm lands or have same for sale write me. John G. Mee, St. Helena, California.

Diversified Farming Lands—Natoma Irrigated, Sacramento County; terms. Alex. Murdock, 38 S. Sutter, Stockton.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

Best Cheapest orchard berry and range lands. John F. Beckett, Arroyo Grande, California.

For Sale—Paso Robles orchard lands, \$75 acre. J. L. Taylor, Paso Robles.

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If You Want to sell or exchange your property write me. JOHN J. BLACK, 116 St., Chippewa Falls, Wisconsin.

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For Sale—One fine 2 yr. old seven-eighths Toggenburg doe, fresh in September, also 2 seven-eighths Toggenburg doe kids 4 months old. Sutter Rabbitry, Yuba City, California.

RABBITS

Pedigreed Flemish Giants; also utility stock. No fancy prices. Maud Beeching, 1578 W. 46th Street, Los Angeles.

New Zealand Reds—Young stock. Reasonable prices. Josephine Spencer, 1915 21st St. Sacramento

PIGEONS

For Sale—White King Pigeons. Old mated breeding birds, \$3 a pair; unmated birds \$2 a pair. Paradise Valley Poultry Ranch, National City, California.

PATENT ATTORNEYS

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MACHINERY

For Sale—Used ranch material, windmills, pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for our "Special Bargain" price list. Demmitt Co., Upstairs, 120 N. Main, Los Angeles.

For Sale—Good portable bean thresher, a practical outfit in good running condition. Am out of bean business and will sacrifice. Could be used stationary. Frank Goodall, Owensmouth.

For Sale—Bean Tractor in first class condition. Used about forty days. Engine has just been overhauled. Price \$600.00 cash. J. N. Thille, Santa Paula, California.

For Sale—New Beeman Tractor—does the work of one horse. Cost \$450.00, sell at 10 per cent discount. No use for it: have team. Deliver anywhere in Southern California. L. C. Alies, Carlsbad, California.

For Sale—Samson Tractor, Model S.25 G. M. C. 1918, worked 50 days, with 14 inch extension wheels, perfect condition, for \$800.00. F. O. B. Los Alamos. J. de Longueuil, Los Alamos, California.

For Sale—Holt 45 Tractor, two engine plows and tank wagon, all in good condition. Price \$2500.00. Will trade for help. W. R. Mayo, Compton, California.

For Sale—Calif-way milking machine, De Laval separator, James Mills Orchards Corporation, Hamilton City, California.

POULTRY QUERIES

(Continued from Page 25.)

ing for ridding turkeys of vermin, and coal oil is far too severe. Buhach powder is best. Dust them well over and under the wings, over the head and around the vent once a week, and do not forget to dust the mother, for they get the lice from her. The older turkey probably has blackhead, the result of overfeeding at some period of his life. You might try giving him a liver pill at night for a few nights, but he will probably die. The main thing is to keep the others from following his example. If they are on green alfalfa they need very little beside; in fact, they will probably do just as well on alfalfa alone for a few days. At the most a little wheat at night is all they need beside. If you can give them cottage cheese or clabbered milk that will help them to resist the blackhead germs. Feed two quarts a day of the milk for the 42 poulters or as much cottage cheese as they will eat up in ten minutes.

Wry Neck

Two of my hens died today. From the description of "wry neck" in your book I think that was the trouble. Their combs were bright red and their eyes bright, and they seemed healthy till suddenly we saw them twist their necks and act as if they were in a fit. The first sign of illness was a drooping of the tail. Then they went to the nest and stayed there. Could they have been poisoned?—Subscriber, Puente.

Wry neck is the result usually of severe indigestion following the taking of something unfit for food into the digestive tract. It may be a kind of ptomaine poisoning from eating spoiled meat or moldy grain, or from the presence of intestinal worms. Clearing out the intestinal tract with castor oil or a good dose of Epsom salts may give relief but after the twisting is noticed it is usually too late for treatment.

Ruptured Oviduct

Ever since my Rhode Island Red hens, now 14 months old, began to lay there have been cases among them of bloody eggs and ruptured vent. The hen when she came from the nest would be picked to death unless some one happened to be present and removed her, in which event the rupture healed. In two cases, however, the egg passage healed shut, preventing the passage of eggs, and I lost the hens. They have been fed milo and wheat, one quart for each 30 hens, fed twice daily, and a commercial egg mash, with plenty of green, charcoal, etc., and have had range for two months past. Can you make any suggestions as to cause and prevention? I hate to think of disposing of all my older stock. I enjoy the Cultivator very much and have received much valuable information through its columns.—Subscriber, San Diego.

What, you call "ruptured vent" seems from your description to be

rupture of the oviduct, coupled in some cases at least with eversion or prolapse of the oviduct. The immediate cause is usually straining to lay an egg that is too large for the oviduct, though constipation sometimes has the same effect. But back of either of these immediate causes is a congenital weakness of the membranes and ligaments of the oviduct which makes them unequal to the strain of egg production. There are three things you may do: First, lighten up the ration so that the hens will not lay such large eggs. If you are feeding a commercial mash, mix it with bran, half and half. This makes the proportion of meat just half what it was before and does away with the danger of forcing. Feed all the greens the hens can be coaxed to consume, and if they have good range diminish the amount of scratch grain somewhat. Milo probably has nothing to do with the size of the eggs, but it is not considered the best feed for summer in this part of the state. Wheat and barley, half and half, is more satisfactory. Second, make sure that none of these hens are suffering from constipation. This can be done by mixing half a teaspoon of Epsom salts for each hen in moist mash once a week. Give just what the hens will clean up quickly. Third, see to it that no hen that has ever shown symptoms of this trouble is used in the breeding pen. It is not necessary to dispose of all or any of your stock, though it might be as well to market those that have been ruptured more than once or that have not thoroughly healed. Just band all affected hens with a colored band which will indicate that they are not fit for breeders. Such weakness can be eliminated only by proper selection.

ALL NORTHWEST EGG LAYING CONTEST

By R. V. Mitchell, Director

Breed honor roll of the fourth year's contest conducted by state college of Washington at Pullman, November 5, 1919, to May 31, 1920:

White Leghorns

High pens: W. A. Ford, Umatilla, Oregon, 590 eggs; B. C. Young, Bellingham, Washington, 563; H. A. Ismay, Victoria, B. C., 550.

High hens: B. C. Young, Bellingham, Washington, 155 eggs; W. A. Ford, Umatilla, Oregon, 150; B. C. Young, Bellingham, Washington, 138; J. R. McRae, Milwaukie, Oregon, 138.

R. I. Reds

High pens: W. S. C. (not in competition), 368 eggs; W. S. C., 254; J. R. McRae, Milwaukie, Oregon, 230.

High eggs: W. S. C., 97 eggs; J. R. McRae, Milwaukie, Oregon, 96; W. S. C., 95.

R. I. Whites

High pens: F. W. Frederick, Cassidy, B. C., 578 eggs; G. W. Laidlaw, Pullman, Washington, 532; White Bird Poultry Yards, Vancouver, B. C., 526.

High hens: White Bird Poultry Yards, Vancouver, B. C., 151 eggs; F. W. Frederick, Cassidy, B. C., 140; G. W. Laidlaw, Pullman, Washington, 132.

Barred Rocks

High pens: Oregon Agricultural College, 619 eggs; Mrs. H. Kleinsmith, Hoff, Oregon, 501; Mrs. W. M. Roberts, Elmira, Oregon, 437.

High hens: Oregon Agricultural College, 136 eggs; Oregon Agricultural College, 135 eggs; Oregon Agricultural College, 132.

Wyandottes

High pens: A. E. Gronewald, The Dalles, Oregon, 545 eggs; A. E. Gronewald, The Dalles, Oregon, 486; T. Bridge, Vancouver, B. C., 454.

High hens: A. Unsworth, Sardis, B. C., 163 eggs; A. Unsworth, Sardis, B. C., 130; T. Bridge, Vancouver, B. C., 120.

Orpingtons

High pens: R. Johnstone, Kelowna,

B. C., 437 eggs; Mrs. W. T. Thompson, Bozeman, Montana, 419; Mrs. W. T. Thompson, Bozeman, Montana, 286.

High hens: Mrs. W. T. Thompson, Bozeman, Montana, 100 eggs; R. Johnstone, Kelowna, B. C., 100; R. Johnstone, Kelowna, B. C., 99.

Miscellaneous

High pens: Anconas, F. E. Pullen, Whonnock, B. C., 473 eggs; Blue Andalusians, H. S. Cadwell, Spokane, Washington, 276; Buff Minorca, Lester Boyd, Pendleton, Oregon, 267.

High hens: Ancona, F. E. Pullen, Whonnock, B. C., 121 eggs; Ancona, F. E. Pullen, Whonnock, B. C., 105; Buff Minorca, Lester Boyd, Pendleton, Oregon, 95.

EGG DAY AUGUST 21

The third annual celebration of egg day will be held August 21. The Petaluma chamber of commerce is forwarding the movement and invites poultry people, hotels, restaurants and everybody to use more eggs beginning with Egg Day, not only for their food value but in support of the industry at large.

GRADED EGGS BRING HIGH PRICES

Can it be that Canadian citizens are profiting more by the advice of the United States bureau of markets regarding the marketing of eggs than our own people for whose benefit that advice is intended?

Because of the superiority of Canadian eggs, due to grading, packing and shipping methods similar to those advocated by the bureau of markets, Canadian eggs sell for 3 to 17 cents higher in British markets than American eggs.

Canadian eggs are carefully graded as to quality, size and color; packed in clean cases with clean fillers of proper weight, and provided with adequate refrigeration.

The wide difference between the selling prices of American and Canadian eggs should not exist. Canadian hens do not produce better eggs than

American hens, and that being so, all that is necessary for American shippers to secure high prices is the use of greater care in preparing eggs for foreign markets. The same principles apply to eggs marketed at home.

REDUCE EXPRESS ON MEAT RABBITS

The National Fancy Rabbit Club has secured the cooperation of the American Railway Express Company in petitioning the interstate commerce commission for a reduction of the express rate on live rabbits. The Rabbit Club says that prohibitive express rates has been the one big obstacle toward broadening the market for meat rabbits in large cities, as wholesale meat dealers, butchers, and commission merchants must of necessity obtain their supplies of fresh rabbit meat from zones near the large centers of population. Under the proposed change of tariff on meat rabbits, the rabbit will be carried at exactly the same rate as live poultry intended for food purposes. Not only that, the added value of the rabbit as a fur animal becomes a very important item in its use for food—the pelt can be turned into account when the rabbit is butchered, and its sale should defray a great part of the transportation expense.

FORTY-FIFTH ANNUAL A. P. A.

The American Poultry Association holds its forty-fifth annual convention at Kansas City, August 10-14. The publicity committee writes that a program of greatest interest to all poultry fanciers and producers has been arranged. We put emphasis on "producers" for we notice in scanning the program that one item alone indicates the producer is to receive more attention than formerly. This item is: "How to Build Up a High Laying Strain of Standard Bred Poultry," by Prof. James Dryden, is only one of several practical features."



Hens Like Hulled Barley

In these times of high wheat prices, experienced poultrymen are feeding hens hulled barley, instead of wheat.

The lower priced barley contains nearly as much food value for hens as is furnished by wheat—more, in fact, in proportion to the cost.

The barley hulls, however, must be removed without grinding away the rich layers of protein on the outside of the barley kernels. The Poultrymen's Co-operative Association has installed the latest type of barley huller—the largest of its kind in Los Angeles. With this machine, poultrymen are provided with Hulled Barley in which all the elements are fully preserved and hence possesses great value as poultry feed.

California Poultrymen With Egg-Producing Records Are Using P. C. A. Hulled Barley

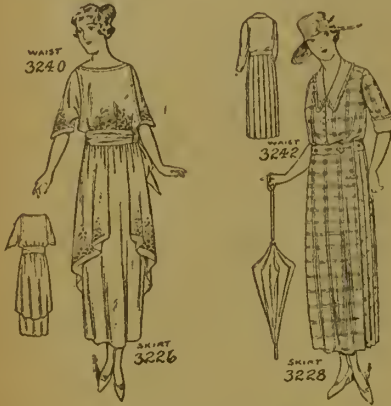
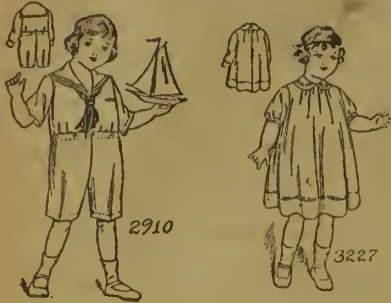
Write your name and address across this advertisement, mail the entire clipping to us and we will send you valuable information on feeding Hulled Barley.

Poultrymen's Cooperative Milling Ass'n.
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LOS ANGELES

For Results Feed **PCA** Products

The Cultivator Patterns



BE SURE TO SEND SIZE

2910. Boys' Suit. Cut in 4 sizes: 3, 4, 5, and 6 years. Size 4 requires 3 yards of 27-inch material. Price, 10 cents.

3240-3226. A Pretty Frock. Price 20 cents. Waist 3240 cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 3226 cut in 7 sizes: 22, 24, 26, 28, 30, 32, and 34 inches waist measure. The width of the skirt at its lower edge is 1 1/2 yards. It will require 8 yards of 36 inch material for a Medium size, for the entire dress of one material. Two separate patterns, 10 cents for each pattern.

3229. Girls' Dress. Cut in 4 sizes: 8, 10, 12 and 14 years. A 12 year size will require 4 1/2 yards of 44 inch material. Price, 10 cents.

2739—Ladies' House Dress. Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 38 requires 7 1/2 yards of 27 inch material. Width of skirt is about 2 1/2 yards at the foot, with plaits drawn out. Price, 10 cents.

3227. Child's Dress. Cut in 5 sizes: 6 mos., 1, 2, 3 and 4 years. A 4 year size will require 2 1/2 yards of 36 inch material. Price, 10 cents.

3242-3228. A Pretty Dress. Price, 20 cents. Waist 3242 cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 3228 cut in 7 sizes: 22, 24, 26, 28, 30, 32, and 34 inches waist measure. The width of the skirt at lower edge with plaits extended is 2 1/2 yards. For a medium size 9 yards of 27 inch material will be required. Two separate patterns, 10 cents for each pattern.

3248. Junior Dress. Cut in 3 sizes: 12, 14 and 16 years. For a 14 year size 4 1/2 yards of 36 inch material will be required. Price, 10 cents.

3235. An Attractive Apron. Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; Extra Large, 44-46 inches bust measure. A Medium size will require 4 1/2 yards of 27 inch material without the sash. Price, 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

How to Order Patterns

Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very latest NEW YORK styles, all patterns ordered are filled in NEW YORK. Therefore, we promise to deliver all patterns ordered within TWO WEEKS; we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT
California Cultivator
Los Angeles

Household Department

A WISH

Oh, for a garden all mine own
Of berry, grape and corn,
And flowers of old-fashioned kind
The table to adorn.

A bird's nest in the border grass,
And robins in the tree,
And all above forever mine,
As far as eye can see;

Where gipsy stars prognosticate
Good things for me in store,
And read into this hand of mine
God's love for evermore.

Oh, for a garden all mine own,
Filled with sweet growing things,
With birds a nest, and one sweet home,
Where love forever sings.

SIR STUPE ID AND MENO FALLS

By Clara Peterson

"DEAR me!" exclaimed Dorance one bright morning when her Stupe was bending over his rosewood desk instead of taking her riding in their new lavender coach. "Dear me! I believe I'd rather have you fat and lazy than attending to everybody's business."

She looked so very pretty pouting that Stupe got up and went over to the window and kissed her. During the year they had been married he had grown slimmer and browner until he was now as handsome as anyone in the world could desire, so Dorance thought. Dorance herself had gained a pound or two. Her eyes were as brown as acorns and her arms shone roundly through her thin white dress.

"It's this way," said Stupe, going reluctantly back to his desk. "Here is this long, complaining letter from the Mayor of Meno Falls. It almost sounds as though he blamed me for his troubles."

"O, I read it when you asked me to," sniffed Dorance. "I think it is a shame that outsiders try to drag you away."

You see, Stupe Id was supposed to govern only the city of Idron, and govern it he did, wisely and well. There was a time—but that was another story.

The two golden heads bent over the letter. Stupe commenced to read at the third paragraph.

"So we have determined to ask your advice. Once this city held its place in the world. Travelers hurried from Idron to us and were glad to come. ("He doesn't care what he says, does he?" smiled Dorance.) Now our streets are almost deserted. The city has not changed at all, yet tourists hurry through to Idron. You can spare us some of them. Will you consent to come at our expense and tell us what to do?"

"I have ridden through there," said Stupe, looking up, "and it was as decent as any city then. I don't know how they expect me to help, but the only thing I can do is go and see."

"I suppose you must," sighed Dorance. "But be back by tomorrow night. Mistress Thornberry is giving a party and your new blue velvet suit is a dream."

Stupe smiled foolishly. It always made him blush to have Dorance talk like that.

So Stupe rode away out of the city on his sleek grey horse, and Dorance sat under the birch trees and made him the dearest shirt of pink striped silk. (Stupe turned pinker than the stripes when he saw it.)

It was a good many miles to Meno Falls and Stupe had not taken the journey often. Once he had been too fat and lazy. After Dorance remedied that he had been too terrifically busy cleaning up his city.

Stupe could tell the minute his own people's land ended. The Idron grass was greener, the Idron road was less dusty, the Idron trees bore more perfect fruit, or so it seemed, than the grass and the road and the trees when Idron was left behind.

After traveling over a flat and beautiful country Stupe came in sight of Meno Falls. It was most attractive from a distance, peeping through the trees. Stupe began to look carefully to either side for, to tell the truth, he had not the slightest idea what he was to say to the Mayor, and he hoped to have an inspiration very soon.

In a short time he came to the first sign of life, a summer hotel set in front of a beautiful grove. There were only a few people about and Stupe drew rein and studied the place.

"It isn't bad," he thought. "I myself stopped there once and at that time it seemed like a palace, but it hasn't changed a bit."

"That's it!" he cried suddenly. "The mayor says the town hasn't changed. While other cities have been progressing Meno Falls has remained the same."

In fact, the hotel, which bore a dilapidated sign reading "Hamden Hostelry," was not now as inviting as the very cheapest lodging house in Idron. On the front veranda were seven great cases of bottles which, from their dustiness, might have been the same ones Stupe had seen there years before. There were dozens of flourishing flower beds, but each was enclosed by a tightly woven fence four feet high.

"Much good it does them to have flowers," thought Stupe. "I'm surprised that someone doesn't take a stepladder and try to get a glimpse of those blossoms."

He took out his leather note book and wrote, "Bottles down; fences down."

Soon his horse was trotting briskly into the city. Stupe began with the first street and rode to its end. Up and down he went, through every lane and highway in Meno Falls. The town was indeed asleep and dreaming. On the main street, which bore the title, "Barbarossa Boulevard," a few lazy loungers stared at the big, handsome fellow in surprise, but as he did not wear a purple robe nor even carry a scepter, not one of those democratic citizens realized that this was indeed His Highness, Sir Stan Id of Idron.

After he had been through the entire place, Stupe reined in his horse on the long stone bridge which looked out over the falls.

"Meno Falls," he said, doffing his plumed hat. "Here's to you, the only moving thing in your city!"

There happened to be an old chair lying aimlessly on the bridge, and as no one was watching, Sir Stan felt as much at home as in his own back yard. He led his horse to a patch of clover, sat down in the chair and, leaning on the railing, looked down into the water.

The bridge was part of Barbarossa Boulevard. To the north the street was lined with sleepy pharmacies and shops, to the south more shops, curtains drawn, some with windows broken.

"Here we are!" said Stupe. "Now what's to be done?"

The water was rushing over the dam with a great splash and commotion and the cool spray felt delightful to Stupe in his sunny seat. The water churned down into a natural basin at the foot of the falls and then divided widely, half to the right, half to the left, leaving a high and dry little island.

"That is the first thing," said Stupe, feeling very proud of himself, for he was young. "Here in the heart of the city I find this island covered with rubbish. It is almost under the main street bridge. It is large enough to be the beauty spot for miles around, the falls behind it, the hurrying water on either side; yet its trees are choked in weeds and the weeds are filled with trash."

He crossed the bridge and followed with his eyes the course of the river. The banks sloped delicately to the water, but instead of tender grass and bushes, clay and sticks ornamented the slopes.

Sir Stupe shook his head. "I'll see the schoolboys about that. It won't take more than a week."

He took out the note book and began his fault finding entries, resting the pages on the smooth rail.

"Every vacant lot seems to hold an old shack or a heap of rubbish. People pay no attention at all to their land which edges the roads. If they cut the grass surrounding the houses they are satisfied. I find several streets which have homes well cared for, but they are as damp and dark as a cave. There is such a thing as too many trees, the branches huddle together as though hiding something. It may be a crime to cut a tree, but half of them shall go—rather a crime than a cemetery. Then again, there are streets which do not know the meaning of shade. His honor the mayor must purchase a carload of saplings. Every vacant lot shall be at-

Threshing Time The Auto-Wheel Coaster

YOU'LL BE "actin' pretty" threshing time if you have

Auto-Wheel Coaster

—because you can do a bondred' little jobs in much less time. Some things you can do quicker are:

Hauling Water. The roller-bearings in the Auto-Wheel make easy—and a lot quicker, too.

Maybe They've Forgotten some tools they need in the field. The Auto-Wheel will haul them and you'll not notice the effort.

And Your Milking. Can you imagine an easier way to carry five or ten gallons at a time than on the Auto-Wheel?

Each Auto-Wheel is built to last. You can bounce over bumps, ditches and ruts, and it will still deliver the goods.

PRIZES FOR LIVE FELLOWS You have a chance to win attractive prizes. The "Auto-Wheel Spokemen" tell about prize contests. Send names of three coaster dealers, telling which handle the coaster with name "Auto-Wheel" on the sides, and we'll put your name on the mailing list.

THE BUFFALO SLED COMPANY. 173 Schenck Street, N. TONAWANDA, N. Y.

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The Stephenson Patent Cooler No Ice Required

Absolutely
Sanitary
Perfect
Ventilation



Awarded first prize wherever exhibited
If not for sale at your dealer's
Write for particulars and prices

L. ANDERSON CO., Mfrs.
Martinez, Cal.

Your Wife Will Know

Get a new pair of Boston Garters and ask your wife to examine them. She will recognize the superior grade of materials used—she will appreciate the careful, painstaking workmanship and will understand why it is that "Bostons" wear so long.



SOLD EVERYWHERE
GEORGE FROST CO., MAKERS, BOSTON

DAISY FLY KILLER PLACED ANYWHERE

ATTRACTS AND KILLS ALL FLIES. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 by EXPRESS, prepaid, \$1.25.

HAROLD SOMERS, 160 De Kalb Ave., Brooklyn, N. Y.

When writing advertisers, mention the Cultivator

tended to by the city; every shack torn down. The merchants must at least keep their display windows filled and attractive; with windows filled the stores will fill too. I shall send one of my advertising men to attend to that. Houses which need paint shall be painted at once. If the owner has not the money he may return it to the city in installments. Each yard and terrace shall be mowed as often as needed. (There must be a number of lazy children here.) We will have some city mowers for them to horrow so there will be no excuse." (Stupe had already made up his mind to put his fee into these city items.)

"And the churches," thought Stupe, resting his silver pencil. "One of them has a sandy, patchy yard. There is no reason why the members should not sod it and plant trees and flowering shrubs. And that other cottage church—I must tell Dorance about that. It is so tiny that it shall be painted at once. I'll donate a stained glass in place of the cracked one, and those empty boxes at the windows shall be filled with Dorance's special roses."

Stupe had become so sure of the change in the city that when someone tapped him on the shoulder and he lifted his head, it was a great shock to see the weedy island and the hopeless streets.

The tapper was the Mayor of Meno Falls. Stupe had once seen him at the city hall in Idron. The mayor was red and puffing.

"Your Highness," he said, "I had not expected you so soon. The town is not always like this. But come—a glass of icy punch after this sun. Did you—have you—any ideas?"

Stupe got to his feet.

"A sleepy day, Your Honor," he replied cordially. "I feel as though I had been dreaming. Yes, a glass of punch, and then—"

* * *

It was a month before Dorance and Stan could get away from Idron long enough to carry over the blossoms for the cottage church. Stupe cast a sly glance at the summer hotel as they entered the city. The dusty cases were gone and so were the fences. In fact, there seemed to be a party in progress for the gleaming flower beds were almost surrounded by silken ladies, strolling happily. Most of them stopped and gazed after Dorance and Stan on their scarlet caparisoned horses.

"I thought I saw Mistress Turnabout in that crowd," said Dorance. "Do you suppose she has left us for Meno Falls? Why, this town isn't half as bad as you said!"

"Perhaps they have had time to do some of the things I suggested," answered Stupe, not very modestly.

"Oh, how pretty!" cried Dorance. "It's almost as nice as Idron. And paint—I haven't smelled so much paint since you started to clean up!"

In fact, Stupe was rather stupefied as he looked around. As far as they could see the grass was cut and people were digging dandelions or planting shrubs. Most of the men seemed to be engaged in painting. The vacant lots were now like short grassed meadows, and in them children were playing gleefully.

"Is it only 30 days?" thought Stupe. They had ridden into sight of the falls and Dorance was exclaiming:

"Oh, Stan, isn't the water beautiful! I haven't been here since I was a tiny girl. I had forgotten all about that dear little island. Isn't this a charming city? We must be more neighborly."

Stupe rubbed his hand over his eyes and looked down at the dear little island as well as he could for keeping his horse and Dorance's out of the way of the crowds in the street.

"Those schoolboys are a quick bunch," he said, for the island was trimmed and garnished. All the wild shrubs were there, the water still rushed along on either side; but the weeds were gone. Here and there were expanses of grass that looked as soft as velvet, and nestling in corners were beds of wild flowers. Pink and purple honeysuckles nodded gently to the spray of the water, and tall ferns swayed back and forth.

Stupe looked again. He glanced up the busy street with its shining windows, then across to where a crowded restaurant showed a newly painted front.

"Let's get something to eat," he said hurriedly. "I feel faint."

ORANGES AND TOMATOES GOOD FOR CHILDREN

Oranges and tomatoes are not only of great importance, commercially, to California, but they are also of the utmost importance in promoting the growth of young children and in keeping them well.

Prof. M. E. Jaffa, consulting nutrition expert of the California state board of health, has recently called attention to the newer discoveries indicating the importance of including these growth promoting substances in the diet of young children. Orange juice, because of its pleasant taste, is deservedly popular. The juices of certain green vegetables also have a beneficial effect in the dietary of the young, but oranges, not only because of their pleasant taste, but also because of their ability to withstand shipping and wide changes of temperature without spoiling, are almost as readily available as canned tomatoes. Fortunately tomatoes can be dried or canned without losing the properties that make this vegetable valuable in the dietary of young children.

California produces an annual crop of oranges valued at \$75,000,000 and a tomato crop that is valued at \$6,000,000. The commercial worth of these products is tremendously overshadowed, however, by their importance in promoting the growth and health of children, thus making them better American citizens.

INDIRECT LIGHTING PROTECTS EYES

Would you sell your eyes? Of course you wouldn't. But unless you are an exceptional person you are wasting them very rapidly.

Not long ago we substituted the electric and gas light for the old fashioned coal oil lamp. We think we have wonderful lighting systems. According to Forrest Knapp of Colorado agricultural college, the glare due to the use of the incandescent lamp is so great that it may counteract all of the good effects of increased intensity of illumination. Did you ever notice any discomfort from having an electric light in your field of vision? Do your eyes become tired more easily at night than in the daytime?

There are two main ways in which modern lighting is done—directly and indirectly. With indirect lighting the source of illumination cannot be seen but the light is reflected from the walls and ceiling, but when direct lighting is used the source may be seen. The latter is the more common.

If our eyes hurt, we get a larger globe and move it closer to our work. Theoretically this should be done. But how about experience?

It has been proved that after three hours work the efficiency of the eye is but little less when indirect lighting is used. The efficiency of the eye after three hours work in daylight is about 98 per cent. When an indirect light is used the efficiency is about 97 per cent. Not much difference. But when direct lighting is used this efficiency drops to about 15 per cent.

The intensity of illumination has little effect when indirect lighting is used, but a very great effect when the source of light is in the field of vision. The number of indirect lights does not decrease the efficiency to any noticeable degree, but when direct lighting is used the efficiency drops rapidly with an increase in the number of lightings units.

Save your eyes.

CANNING SUGAR BILL CAN BE CUT

It is possible to can fruit and have it keep, without any sugar. This does not produce the best flavor or consistency in the fruit. Excellent canned and preserved products may be made with a much smaller amount of sugar than is commonly used, adding corn or malt syrups in its place. The following proportions for syrups for canning and preserving have been tried and found good:

Thick: 1 cup syrup (white), ½ cup sugar, 1½ cups cold water. Medium: ¼ cup sugar, ¼ cup syrup (white), ¾ cup water. Thin: ½ cup sugar, 1 cup syrup (white), 3 cups water. One cup of honey may be used in place of one cup of sugar.

Creaking doors, windows and drawers may be stilled by rubbing with hard soap.

BUTTERFLY SALAD

On a foundation of lettuce leaves place a slice of pineapple, cut in halves with rounded edges together, which forms the wings of the butterfly. Cut stuffed olives in thin slices, and place on pineapple to form spots. After removing the seed from a date, place the date on top of the pineapple for the body. Thin strips of pimento radiating from the body make up the antennae. Whipped cream salad dressing is put on top of the body.

Whipped Cream Dressing

Two teaspoons mustard, salt to taste, 4 teaspoons flour, 3 teaspoons powdered sugar, few grains cayenne, 2 teaspoons melted butter, yolk 2 eggs, 2/3 cup hot vinegar, 1 cup thick cream.

Mix dry ingredients, add butter, egg and vinegar slowly. Cook over boiling water, stirring constantly, until mixture thickens. Cool, and add to heavy cream, beaten until stiff.

Parker House Rolls

Four cups scalded milk, 6 tablespoons butter, 2 teaspoons salt, 2 yeast cakes, 4 tablespoons sugar; flour, dissolved in ½ cup lukewarm water.

Follow the directions for making any light bread, until time for shaping.

After the last rising, toss on slightly floured board, knead, pat and roll out to one-third inch thickness. Shape with biscuit cutter, first dipped in flour. Dip the handle of a case knife in flour and with it make a crease through the middle of each piece; brush over one-half of each piece with melted butter, fold, and press edges together. Place in a greased pan, one inch apart, cover, let rise, and bake in a hot oven 12 or 15 minutes.

Quite frequently after the rolls start to bake I brush them with milk having a little sugar in it, which gives them a glaze.

MENDING BROKEN DISHES

New tableware costs real money nowadays, and frugal housewives are giving more thought to mending broken plates, cups, saucers, howls, etc., than they did when new pieces could be bought for a few cents. A clean break can be easily and securely mended.

Dishes that frequently go into hot water to be washed should be mended with waterproof cement. A cement that is soluble in water will not long hold the pieces together. Not all cements are waterproof by any means, although very satisfactory for sticking things not to be subjected to too much moisture. Most waterproof cements are pyroxylin compounds. Pyroxylin is made of cotton. One would naturally suppose that a stickum made of animal matter such as hoofs, fish bones etc., would be more water resisting than one made of fleecy cotton, but they are not.

BREAD AND CAKE BOXES

Nearly every farmer's wife owns a japanned bread box and cake box. They are usually brown with gilt lettering. There was a time when this tinware didn't cost much money. If a box rusted out it was carelessly tossed on the rubbish pile and a new one purchased. But price one of these boxes now! You will think twice before you chuck it.

And really it isn't at all necessary to let it get into a condition that will suggest discarding. If the japanning shows signs of wear, go to the store and buy a small can of colored enamel. Clean the surface of the box and apply a thin coat of the enamel with an ordinary varnish brush. The rust will immediately be checked. That will be much cheaper than a new bread or cake box.

PREDICTION DISPROVED

He (after popping the question)—Why are you crying, dearest? Did I offend you by my proposal?

She—Oh, no, dear; it's not that. I am crying from pure joy. Mother has always told me that I was such an idiot that I wouldn't get even a donkey for a sweetheart, and now I've got one, after all.

THE DIFFERENCE

"Have you paid your income tax?" "I rather think it was the outgo one I settled."

VOCATIONAL NAMES

The Call—Are you known as Mrs. Freemeter, your husband's pen name?

The Poet's Wife—No; I'm known as Mrs. Smith; that's my washtuh name.



Aeroplanes

Developments in aeronautics have found us ready with a grade of Zerolene for each type of engine.

Thousands of gallons of Zerolene Liberty Aero Oil gave service to the U. S. and Allied Governments during the war.

There are grades of Zerolene for the Correct Lubrication of your automobile, truck and tractor. Ask your dealer or our representative.

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(California)



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The Wonderful Attractions of British Columbia

Few countries possess all the conditions for happy, prosperous living as does British Columbia. The varieties of climate and soil offer inducements for almost every branch of agriculture. Whether in the warm interior valleys, the rich grazing table lands or the fruitful lowlands of the coast or Vancouver Island, the advantages offered for

Dairying, Fruit Growing and Stock Raising

are such as must appeal to those who wish to improve their circumstances and at the same time live in a country of delightful climate, magnificent scenery, varied resources, progressive people and abundance of opportunity for development. British Columbia—the playground of America—is already famous for the production of its orchards, fields and dairies. Now is the time to

Learn about this wonderful Province and share in its possibilities. Its industrial life—mining, lumbering, fishing, manufacturing, transportation—assures a ready market at good prices for all the farmer can produce. Schools, churches, railways, roads, telephones, all the conveniences of an old land await you in this new Province of Opportunity and Success.

For illustrated literature, maps, etc., write Department of Immigration, Ottawa, Can., or

Gilbert Roche,
3-5 First St., Sheldon Block,
San Francisco, California.
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One Man Saws 25 Cords a Day

The Ottawa Log Saw falls trees or cuts off stumps level with ground. Saws up logs, cuts up branches, ice cutter, runs pump jack and other belt machinery. Mounted on wheels. Easy to move anywhere. 10 Year Guarantee. 30 Days Trial. Write for Free Book and Cash or Easy Terms. OTTAWA MFG. CO., 2741 Wood St., Ottawa, Kans.

Los Angeles Markets

Los Angeles, June 30, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 61 cents.

Dairy Exchange prices last week on extras:

June	23	24	25	26	29
'20	61	..	60	..	61

CHEESE

Brokers' prices:
California flats, 30 per lb.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 48 per dozen; case count Prod. Exch. closing price, 46 per dozen; pullets, Produce Exchange closing price 41 per dozen; pewee pullets, 30.

Dairy Exchange prices last week on extras:

June	23	24	25	26	29
'20	47	..	48	..	48

POULTRY

Price to producers: Hens, lt., 18; heavy, 24; colored, 28; broilers, 25@28; roasters, 38; old roosters, 14; fryers, 32; ducks, old, 17; ducklings, Pekin, 3½ up, 20; others, 17@20; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47; pigeons, doz., 1.00.

Belgian hares, live, 16; old, 9.

LIVESTOCK

Los Angeles, June 29 — Weighed and delivered off cars without food or water: Hogs (hard-grain, 125 to 175 lbs., 15.50; 175 to 225 lbs., 16.50).

Cattle (on foot, gross weight)—Steers, good, 9.50@10.00; medium, 9.00@9.50; cows, good, 8.50@9.00; medium, 8.00@8.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.50.

Sheep—Ewes, 8.50@9.00; lambs, 11.50@12.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, June 29 by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

New stock: Supplies liberal, market steady; Local Early and White Rose, No. 1's, mostly 2.25@2.50; No. 2's, 75@1.50 per lug, according to size; 100 lbs., sacked, No. 1's, 5.75@6.25.

Carlots: Supplies liberal. Market steady. Sales to jobbers: New stock: White Rose No. 1, sacked mostly 5.50@6.00 per cwt.; lugs, 2.20@2.35.

Onions: Supplies of Wax, liberal; Yellow, light; wide range in quality; some badly decayed; demand and movement slow; market steady. New stock: Coachella Valley: Wide range in prices; Bermudas, best, 1.25@1.50 per crate; lugs, 75@90; Crystal Whites, per crate, 1.25@1.50; lugs mostly 85@90; sunburned and decayed stock at all prices; poor stock cleaning up.

Carlots: Demand and movement slow. Wide range in condition, poor stock cleaning up, market steady. Coachella Valley: Standard crates Yellow Bermudas and Crystal Wax, sales to jobbers, best, 1.00@1.25; poorer low as 75; soaked Yellow Bermudas mostly 1.85@2.00 per 100 lbs. Garlic: lb., 25@30.

VEGETABLES

These are the actual prices obtained June 29 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Artichokes: Delta, best, lb., 12@15. Asparagus: Supplies liberal. Market steady. Delta section: Best 12@15; local, 17@20.

Beans: Ky. Wonder, 6@9. Beets: Doz., 40@50; sk., 2.25@2.50. Cabbage: Supplies moderate, market strong, movement good, wide range in quality. Best mostly 2½@3½ per lb., per field crate, best 2.75@3.25.

Carlots: Supplies of shipping stock light. Demand good, movement limited, market strong, few sales. Carloads f. o. b., usual terms. Cannonball and Winningsstad, per ton, mixed cars, 40.00@50.00.

Carrots: doz., 35@45; sk. 2.40@2.75. Corn: Local, 1.25@1.50 per box. Cucumbers: Market steady; local, best, lb., 50@75.

Egg Plant: Best, lb., 8@15. Lettuce: Local, cr., best, 75@1.00. Carlots: Few shipments, mostly on consignment. Quality generally poor, market steady, few sales mixed cars mostly, 1.75 per crate.

Peas: Northern: lb., 9@10. Spinach: Doz., 20@30; lb., 2. Squash: Local summer, large lugs, 60@80; flats, 50@60.

Tomatoes: Imperial and Coachella, supplies moderate; market steady; cr., best, 2.00@2.50. Turnips: Per dozen, 30@40; per sack, 1.00@1.25.

DECIDUOUS FRUITS

These are the actual prices obtained June 29 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apricots: Local lugs, 1.15@1.50. Bananas: lb., 11. Blackberries: Supplies light; per crate, mostly 3.00@3.50.

Cantaloupes: Market weaker; supplies heavy. Imperial Valley: Standard, mostly 3.50@4.00; Ponies, 3.00@3.50; flats, 1.25@1.50.

Carlots: (Direct wire from Brawley). Haulings decreasing. Demand light, market firm, prices higher. Wide range in quality, condition generally good. Carloads f. o. b., cash track. Standards: Salmon Tings, 2.00@2.50, mostly 2.25@2.40; ponies, 50 lcs, mostly consigned.

Cherries: Supplies liberal; market firm; various varieties, best, mostly 15@18 per lb.; poorer, low as 10.

Gooseberries: lb., 10@12. Grapes: Thompson Seedless: lb., 12@15. Peaches: Supplies liberal, wide range in quality. Various varieties, lb., 5@7.

Plums: Best, lb., 5@9; poorer, low as 3. Raspberries: cr., 3.25@4.50. Rhubarb: Local, 1.00@1.25 box. Strawberries: cr., 3.25@4.25. Watermelons: Supplies liberal. Mostly 2@3 per lb., according to size.

Carlots: (Imperial Valley Section). Demand and movement good, market weaker. Carloads f. o. b., cash track—Brawley and El Centro—Angelinos and Klondykes, 25.50@32.50 per ton; Excels mostly 35.00@40.00 per ton.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.25@2.75; special-packed brands, 3.00@3.25.

Lemons: Market unsettled, wide range in prices. Local Stock: packed, 3.75@4.50; loose, 1.25@2.25.

Oranges: Supplies liberal, market firm. Valencias: packed special brands, 126's, 5.50@5.75; 150's and 176's, 5.75@6.00. Local packed, mostly 4.00@4.50; larger sizes, low as 3.00. Packing house cuts, 1.00@2.00 per lug.

HONEY

Old honey practically exhausted, new supply light; few sales; demand good; movement limited. Carloads f. o. b., usual terms. New crop orange, 21; Hawaiian lt. amber, 17½. Old crop white amber sage, 19; wh. alfalfa, 19½. Beeswax, 42.

HAY

Alfalfa Growers of California, under-date of June 30, says:

The market for alfalfa hay this week showed a continued active demand in all parts of the state with prices well maintained at previous levels. The movement of hay is growing in volume but is still considerably lighter, especially towards the big markets, than usually at this time of the season. Almost all shipments go to fill sales previously made, so that daily shipments to be sold on track after arrival here, remain comparatively very small. Buyers, therefore, depend less on track purchases and buy instead for direct shipment to them as needed. This undoubtedly has a stabilizing effect on the market and is, therefore, beneficial to buyers as well as to growers. A somewhat disturbing feature, in view of the short production this year, is the fact that considerable quantities of hay are being sold for shipment out of the state in the shape of meal; prices paid for hay for this purpose range from \$18 to \$25 per ton, loose to the grower. There have been received on the tracks in Los Angeles, approximately 1,300 tons of hay of all grades during the week ending Saturday, June 26, which include 150 tons held over unsold from the week previous.

The market has held steady with prices approximately as follows: Choice alfalfa, 40.00 per ton, No. 1 dairy, 36.00; standard dairy, 32.00; stock alfalfa, 29.00.

GRAIN AND FEEDS

Barley: A little weaker, especially in spot stuff. Milo and mill feeds are a little stronger. There is a great range in price because of vast difference in quality. Forty-nine lb. bright barley is readily commanding 3.30, while 41 lb. barley, more or less stained, may run as low as 2.82½. Milo: Good bright, Imperial milo is commanding 3.55 and Eastern milo is running as low as 2.92@2.95.

Wheat: Utah-Idaho Milling, 6.00; feed wheat is running around 4.45@4.55.

Corn: Sacked, Yellow, 3.85@3.91½. Price bid local grain exch. cwt., June 29: General trend of market downward, especially on barley.

Barley: 2.86½@2.91½. Corn: Yellow, 3.770. Milo: Carlots, 2.87½; Eastern, 2.92½. Wheat: Mixed feed, 6.40@6.52½.

San Francisco Markets

San Francisco, June 29, 1920.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	.....	61				
Prime Firsts	.....	Nominal				
June	22	23	24	25	26	28
'20 ...	60	60	59	59	60½	61
'19	..	55½	55½	55½	56	56½
Rcts. wk. ending June 28, 3,705 cents.						

Rets. wk. ending June 28, 3,705 centsals.

CHEESE

Dairy Exchange quotations:
Jack, full cream23@26
Cal. Y. A.35
Ore. Trips32
Cal. Flats34½

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:
Extras51½
Extra Pullets43½
Undersized33

Extras past week and year ago:
June 22 23 24 25 26 28
'20 .. 46 46½ 48 47½ 49½ 51½
'19 .. 54½ 55 54½ 53 53½

Rets. wk. ending June 28, 397,284 doz.

POULTRY

Wholesale prices are:
Leghorn, 23@25; large, 33@35; foosters, young, 45@50; old, 18@20; broilers, 25@30; fryers, 33@35; turkeys, live, 37@40. Ducks: Indian Runner, 21@23; Pekin, 22@25. Squabs, 55@60; pigeons, doz., 2.35@2.50.

Belgian hares, live, 15@17; Jack rabbits, dozen, 1.50@3.50.

LIVESTOCK

Western Meat Company prices are:
Cattle: Grass steers. No. 1, weighing 1,000 to 1,200 lbs., 9½@10½; do, 1,200 to 1,400 lbs., 8@9; do, second quality, 7@8; thin, 6@7. Bulls and stags: Good, 3½@4; fair, 3@3½.

Cows and heifers: No. 1, 7½@8½; second quality, 6@7; common to thin, 2@4. Calves: Lightweight, 10@11; medium, 8@9; heavy, 7@8.

Lambs: Milk, 10@10½; yearlings, 7@8½. Sheep: Wethers, 7½@8; ewes, 6@6½.

Hogs: Weighing 100 to 150 lbs., 15; 150 to 225 lbs., 15½; 225 to 300 lbs., 15; 300 to 400 lbs., 14.

Virden Packing Company quotes prices on livestock, weighed and delivered off cars at its plant, South San Francisco, as follows:

Cattle: Good steers, 1,000 to 1,100 lbs., 10@10½; top steers, 1,100 to 1,200 lbs., 9@9½; good heifers, 1,200 lbs. and over, market price; good cows and heifers, 7½@8; No. 2 cows and heifers, 6½@7; good bulls, 4½@5.

Calves: Light, 13@14. Hogs: Top packer, hard and well finished, 100 to 150 lbs., 14½; 150 to 225 lbs., 15½; 225 to 300 lbs., 14½; over 300 lbs., 14; under 100 lbs., 13½.

Ewes: Full wool, 7@7½.

Wethers: Full wool, 8@8½.

Yearlings: 9½@10.

ONIONS

Onions: New reds, 70@80; whites, 75 cr.; green onions, 1.40@1.75. Garlic, new, 9@11.

VEGETABLES

Wholesale selling price:

Asparagus: lb., white, 6½@7½; graded, 10@12.

Beans: lb., String, 8@12½; Wax, 7@8.

Cucumbers: Eng., doz., 75@1.00; other, 1.00@1.50 per bx.

Corn: Sack, 5.00@6.50.

Eggplant: Livingston, 10@15; So., 9@13.

Okra: lb., 1.00@1.25.

Peppers: Bells, 15@20 for large, 5@10 for small; Chili, 12½@25.

Peas: lb., green, 2½@4.

Radish, 7@9 doz. bunches.

Spinach: lb., 4@5.

Squash: Summer, cr., 50@75; Sacramen-

to, lug, 1.50@2.00.

Tomatoes: cr., 1.00@1.75.

DECIDUOUS FRUITS

Apricots: Imperial Valley, Los Angeles lugs, 5@10 per lb.; 1.25@1.50 per crate.

Bananas: lb., 8@9½.

Cantaloupes: Ponies, 3.50@4.00; standards, 4.50@5.00; flats, 1.50@1.75.

Cherries: Black, 1.50@1.75 per drawer; loose, white, 3@5; blacks, 6@12½ lb., according to quality; Royal Annes, lb., 10@14.

Currants: 50@75 dr.; 6.00@8.00 ch.

Figs: 1.00@1.25 for white and Brunswick per box of one layer.

Gooseberries: lb., 5@7.

Loganberries: Red, dr., 50@75.

Peaches: boxes, 75@1.00.

Pineapples: Doz., 2.00@3.00.

Plums: Apex, 1.25@1.50 per crate; Beauty, 1.50@2.00; Climax, 1.50@2.00; Cly-

man, 1.25@1.50.

Raspberries: dr., 1.00@1.25; cr., 2.00@2.50.

Strawberries: Peninsula, dr., large, 75@1.25; small, 60@90.

Watermelons: Imperial Valley, lb., 2@4.

Honey Dew: cr., 2.50@3.00.

CITRUS

Box: Lemons, standards, 2.50@5.50; lemons, 1.25@2.00; grapefruit, 2.00@3.50; navel oranges, 4.00@6.00.

BEANS AND PEAS

California Bean Growers Association, San Francisco, June 28:

The market remains unchanged, except there is considerable inquiry for July, August and September business, indicating that trading will shortly be resumed.

Quotations this date:

Large Whites	.....	6.25@6.40
Small Whites	.....	5.75@6.10
Pinks	.....	6.30@6.50
Cranberries	.....	6.75@7.00
Black Eyes	.....	8.25@8.50
Red Mexicans	.....	8.50@8.75
Red Kidneys	.....	14.00@14.50
Bayos	.....	10.25@10.50

HOPS

1919 crop, 85@1.00 per lb. Prices to growers for 1920 crop, 65@80 per lb.

HONEY

Reported by Rafael & Wing:

Very little honey arriving. Not enough sales to establish prices. White orange offering in this market at 20@21. No change in wax. It is bringing from 40 to 42. From all indications, there will be a very good honey crop from the San Joaquin and Sacramento valleys. The sage crop in Santa Clara and San Benito counties is practically a failure. Some Honolulu honey offering, but not enough to affect the market.

GRAIN

Wheat: No quotations obtainable.

Oats: Red feed, 3.10@3.20.

Corn: California Yellow, 3.80@3.90 per cental; California milo maize, 3.45@3.50.

Barley: No. 1 feed, 3.05@3.15.

HAY

Under date of June 26, A. W. Scott Co. says:

Receipts past week 1688 tons. In San Francisco prices of hay are much lower and the market continues in duldest condition for many months, consumers and dealers declining to pay the prices asked. A much greater proportion of new hay is now coming in and old hay will be a thing of the past in a few days. Trading in the country has been likewise extremely light and in nearly all sections they have a local supply that is used up first and this naturally will change hands before outside purchases are made. Alfalfa is in light supply and prices are weaker and lower in all sections.

We quote today wholesale prices in carload lots (old crop) as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.)

Old Hay:

No. 1 Wheat or Wheat and

Oat hay35.00@38.00

No. 2 Wheat or Wheat and

Oat Hay32.00@35.00

Tame Oat Hay33.00@38.00

Stock hay20.00@25.00

No. 1 Barley straw, bale70@1.00

New Hay:

Wheat hay (light 5 wire bales) 26.00@28.00

Tame Oat hay26.00@28.00

Wild Oat hay20.00@22.00

Barley hay20.00@22.00

Alfalfa hay first cutting20.00@25.00

Alfalfa hay second cutting24.00@28.00

Alfalfa Growers of California quote

prices for Northern Districts:

No. 1 Dairy Alfalfa32.00

Standard dairy31.00

Stock hay27.00

Citrus Markets

Los Angeles, June 30, 1920

Valencias, in fact all orange varieties, are bringing big prices in Eastern markets. Present estimates show 8,500 to 9,000 cars of Valencias remaining in the state for shipment, and a careful survey is now being made so that exact amount can be known. Central California has cleaned up orange shipments for the season. A bumper crop of Navel and Valencias is indicated for next season. The June drop has been exceedingly light.

Hot weather has ripened cantaloupes very rapidly. The recent hot spell in Fresno seriously cut down the fresh fruit output. Tokay grapes were the heaviest sufferers. It is now estimated that from 40 to 50 per cent of the crop was damaged. Emperors also suffered heavily; Malagas least with a possible 10 per cent.

Lemons from the Mediterranean are invading markets as far West as the Mississippi since the American dollar is worth three or four times the Italian equivalent. Italian shippers are throwing as much of their fruit as possible into this market. A quarter of a million boxes of lemons are now afloat and 50,000 boxes are now being auctioned in New York. California lemons are packed and ready to send on to Eastern markets in case of hot weather creating heavy demand.

Shipments

Shipments of oranges to date from Southern California since November 1, 1919: Oranges, 23,069 cars; lemons, 5,885; total, 28,952. To same date last season: oranges, 26,437; lemons, 7,206; total, 33,643. From Central California to date this season: Oranges, 5,370; lemons, 288; total, 5,658. To same date last season: Oranges, 3,698; lemons, 251; total, 3,949. Northern California this season: Oranges, 261; lemons, 23; total, 284. To same date last season: Oranges, 244; lemons, 2; total, 246.

AT THE AUCTIONS

bride business was obviously intended as an evasion of the gentleman's agreement, which will not work anyhow, as the Japanese government cannot control Japanese subjects in foreign countries. It did once. It still tries, with less success year by year.

"It is not generally understood that Japan not only does not recognize naturalization of its born subjects in foreign countries, but claims as its subjects children of Japanese parents wherever born. The child Japanese population of this state is increasing very rapidly, and every Japanese child born here is claimed as a Japanese subject, the constitution of the United States to the contrary notwithstanding.

"Our people have only good will to the Japanese. We make no claim that our race is 'superior' to any Oriental race and will raise not the slightest objection if Orientals claim to be our superiors. It is an academic question in which we take no interest. And neither, for that matter, does the Japanese government. The term is used to camouflage the desire for peaceful penetration.

"If the Japanese laborers will go away and stay away the two nations will always be friends. If they persist in coming here, as they seem to, we have no choice but to exclude them by name. We will not have them."

cess of paring without appreciable increase in waste over that which would occur if the potato were perfect. Loss of outer skin (epidermis) only shall not be considered as an injury to the appearance.

"Free from serious damage" means that any damage from the causes mentioned can be removed by the ordinary processes of paring without increase in waste of more than ten per cent by weight over that which would occur if the potato were perfect.

tons of unshelled and 300 tons of shelled. The Japanese peanut crop is normal this year, and the unshelled crop promises to yield about 25,000 tons.

Clarke County, Washington, has more than 600 boys and girls enrolled in agricultural clubs.

WEATHER REPORT

San Francisco, California, June 26, 1920.

Stations	Rainfall			Temp.	
	Wk.	Season.	Norm.	Max.	Min.
Eureka	.00	23.93	48.01	62	44
Red Bluff	.00	11.26	25.01	106	62
Sacramento	.00	8.88	20.09	108	54
San Francisco	.00	10.46	22.27	74	51
San Jose	.00	8.83	18.79	94	48
Fresno	.00	8.23	9.68	110	61
San Luis Obispo	.00	14.86	20.51	82	48
Los Angeles	.00	12.52	15.64	76	57
San Diego	.00	9.91	10.01	70	59

Federal Grades for Potatoes

Recommended by United States Department of Agriculture

STANDARD grades for potatoes were recommended by the United States department of agriculture and the food administration on September 10, 1917. The specifications were determined by thorough investigations conducted by the bureau of markets.

In order to reduce waste and conserve transportation facilities during the war emergency the food administration issued a rule, effective January 31, 1918, requiring the use of the United States potato grades by licensed dealers. The results obtained were so satisfactory that when this regulation was canceled on December 10, 1918, the use of the grades to a large extent was continued voluntarily. The universal use of the standards during the war emergency afforded the investigators of the bureau of markets an excellent opportunity to study in detail the various specifications and determine whether any changes were desirable. As a result a few changes were recommended on February 10, 1919.

Because of the large, bright, smooth potatoes grown in some regions, especially in sections of the Western states, those interested demanded a grade with higher requirements than those of U. S. Grade No. 1, in order to provide for stock of high quality, which is sold to a special class of trade. To meet this demand the U. S. Grade Fancy now is recommended, in addition to U. S. Grade No. 1 and U. S. Grade No. 2.

This recommendation does not mean that all crops of potatoes should be sorted into three grades. A large percentage of the commercial crop in most of the potato producing sections of the country should meet the requirements of U. S. Grade No. 1, and this grade will provide for most of the trade demands. Potatoes of better than average quality can be carefully graded and sold as U. S. Grade Fancy, while smaller potatoes, or those of inferior quality, can be marketed as U. S. Grade No. 2. It is probable that many of the commercial potato producing sections will have little use for the U. S. Grade Fancy.

Observations made in the producing sections show that there is a tendency to regard sizing as the only essential to proper grading. It should be emphasized that in addition to proper sizing by hand or machine, defective stock must be removed in order to meet grade requirements.

U. S. Grade Fancy

This grade shall consist of sound potatoes of one variety which are mature, bright, smooth, well shaped, free from dirt or other foreign matter, frost injury, sunburn, second growth, growth cracks, cuts, scab, blight, soft rot, dry rot, and damage caused by disease, insects, or by mechanical or other means. The range in size shall be stated in terms of minimum and maximum diameter or weight following the grade name, but in no case shall the diameter be less than two inches.

In order to allow for variations incident to commercial grading and handling, five per cent by weight of any lot may vary from the range in size stated, and in addition three per centum by weight of any such lot may be below the remaining requirements of this grade; but not more than one-third of such three per cent, that is to say, not more than one per

cent by weight of the entire lot, may have the flesh injured by soft rot.

U. S. Grade No. 1

This grade shall consist of sound potatoes of similar varietal characteristics which are practically free from dirt or other foreign matter, frost injury, sunburn, second growth, growth cracks, cuts, scab, blight, soft rot and damage caused by disease, insects or mechanical or other means.

The diameter of the potatoes of the round varieties shall not be less than one and seven-eighths inches, and of potatoes of long varieties one and three-fourths inches.

In order to allow for variations incident to commercial grading and handling, five per cent by weight of any lot may be under the prescribed size, and in addition six per cent by weight of any such lot may be below the remaining requirements of this grade; but not more than one-third of such six per cent, that is to say, not more than two per cent by weight of the entire lot, may have the flesh injured by soft rot.

U. S. Grade No. 2

This grade shall consist of potatoes of similar varietal characteristics which are practically free from frost injury and soft rot, and which are free from serious damage caused by sunburn, cuts, scab, blight, dry rot or other disease, insects or mechanical or other means.

The diameter of potatoes of this grade shall not be less than one and one-half inches.

In order to allow for variations incident to commercial grading and handling, five per cent by weight of any lot may be under the prescribed size, and in addition six per cent by weight of any such lot may be below the remaining requirements of this grade; but not more than one-third of such six per cent, that is to say, not more than two per cent by weight of the entire lot, may have the flesh injured by soft rot.

Definition of Grade Terms

As used in these grades:

"Mature" means that the outer skin (epidermis) does not loosen or "feather" readily during the ordinary methods of handling.

"Bright" means free from dirt or other foreign matter, damage or discoloration from any cause, to an extent such that the outer skin (epidermis) has the attractive color normal for the variety.

"Smooth" means free from second growth, growth cracks and other abnormally rough surfaces.

"Well shaped" means the normal, typical shape for the variety in the district where grown, and free from pointed, dumbbell shaped, excessively elongated and other ill formed potatoes.

"Free" means that neither the appearance nor the physical structure has been appreciably damaged by the causes mentioned.

"Diameter" means the greatest dimension at right angles to the longitudinal axis.

"Soft rot" means a soft, mushy condition of the tissues from whatever cause.

"Practically free" means that the appearance shall not be injured to an extent readily apparent upon casual examination of the lot, and that any damage from the causes mentioned can be removed by the ordinary pro-

TELLS HOW BANKERS CAN HELP FARMING

Secretary Meredith has sent the following telegram to W. F. Keyser, secretary of the Missouri Bankers Association:

"While I found it impossible to accept an invitation to attend the meeting of the bankers of Missouri in annual convention this year, I wish to take this means of commending them for the interest they have shown in agriculture in the past and to solicit their continued cooperation in the campaign for 'better farming, better business and better living.' There is much that the local banker can do to stimulate better business methods on the part of the farmers. He can also be of material aid to the extension of agencies of the United States department of agriculture and the state college of agriculture in reaching farmers with results of research.

"The increased demand for food by our increasing population must be met in the future largely by producing more per acre. Unless this is secured through the more general adoption of improved methods the increased production will result in ever increasing cost per unit of product. I wish to commend especially the work of the agricultural commission of the American Bankers Association. Its work is a recognition of the solidarity of the interests of agriculture and of the financial institutions of the United States. It is very gratifying that the bankers of the country, through their agricultural committees and commissions, are taking an active interest in the work of the department of agriculture and state colleges of agriculture. The bankers of Missouri can be of great service to agriculture and to the nation by supporting in every way the efforts of these two great agencies to aid the farmers of your state in the solution of the difficult problems confronting them. I wish for the bankers of Missouri a most successful meeting."

CALIFORNIA BEANS

About a dozen years ago California began sending out new varieties of beans that at once became popular in the states east of the Rockies. A boy in Ventura County walking through his father's pole Limas discovered two distinct types of bush Limas. These were fostered, the seeds sown and came true to type. Now they are known as Fordhook Bush Lima and Improved Bush Lima. A few years later a seed specialist at Carpinteria began selecting large Limas having a strong green tint and breeding from these fastened the color permanently. He then selected those having other excellent points aside from the green tint, and now one of the largest Eastern houses catalogues the "Carpinteria Lima" as "the very highest quality pole Lima in cultivation today."

JAPAN'S PEANUT CROP

According to a recent cablegram from Consul Robert Frazer, Kobe, Japan's probable surplus of peanuts exportable to the United States from the current crop will amount to 800

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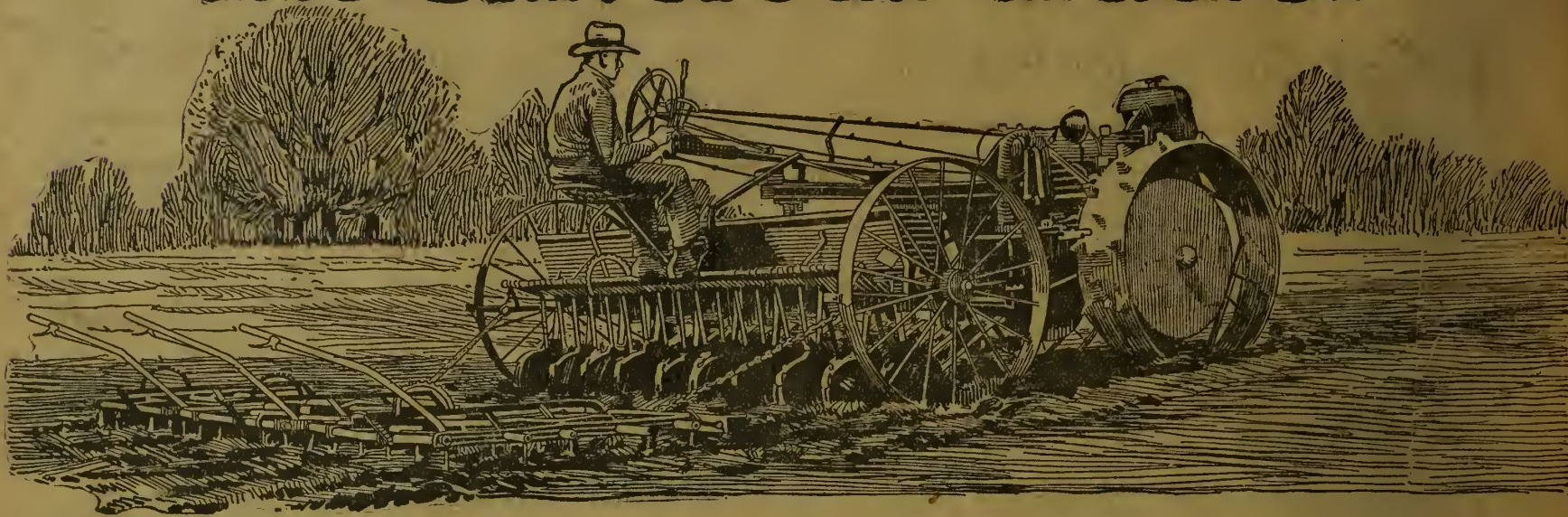
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The Moline Tractor will do for you what it has done for others. It does two big things to increase profits—

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- Decreases the cost of production.

Increases production by enabling one man to plow more, harrow more, seed more, cultivate more, mow more, harvest more, than possible under other methods.

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- Saving horses because it does all field work, including cultivation.

Thus the profit from the Moline Tractor is two-fold—it increases income and decreases expenses.

There is another phase of great importance aside from its money-making ability. The Moline Tractor makes farming more enjoyable—98 per cent of owners who have reported to us say so. It puts more speed into and makes easier many operations that have been drudgery.

The Moline Tractor is a powerful factor in keeping the boys on the farm.

Moline Plow Company
Moline, Illinois

Branches at Atlanta, New Orleans, Dallas, Oklahoma City, St. Louis, Poughkeepsie, N. Y., Baltimore, Los Angeles, Stockton, Cal., Spokane, Portland, Salt Lake City, Denver, Kansas City, Omaha, Minneapolis, Minot, N. D., Sioux Falls, S. D., Des Moines, Bloomington, Ill., Indianapolis, Columbus, Ohio, Jackson, Mich., Memphis, Tenn.



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San Francisco

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July 10, 1920

No. 2

Alkali and Some Other Soil Problems Discussed

By Prof. J. W. Nelson



VENTURA County has a live farm bureau. The members have live soil questions. They solve them when they can. When they can't they go to the university and say, "Come over and help us." So Nelson, the soil expert, came, and President John Eastwood of

the farm bureau took the trouble to get for Cultivator readers a very complete report of what Prof. Nelson said about soils in general and Ventura soils in particular. The initial picture was snapped by the Cultivator camera man, showing Prof. Nelson in characteristic pose, leaning on his soil auger.

I want to say right here that Ventura County farmers, as an average, are the best tillers in the United States. However, I do not know but what some of you are cultivating at least a third more than you need to. Some authorities say that after you get a good dirt mulch on the surface that is all that is needed, that impenetrable layer through which moisture cannot pass readily, and after the ground is in that condition working it over does no harm or no good. We have been doing that thing for years and years and have machinery all adjusted to that particular type of agriculture. I do not know whether or not we are getting maximum returns from it, maybe we are, maybe we are not. Test this system of drainage, this system of crop rotation, introduction of more desirable varieties of crops, control of moisture supply, proper consideration of organic matter, use of commercial fertilizers in an intelligent way.

In all big combinations the big profits lie in taking advantage of little, fine points and if they did not take advantage of these fine points I think many of

them would be broke today. They are nothing compared with this industry. Do you know that the capital invested in agriculture is about 75 or 100 times that of all the other big industries combined? When we think of the railroads, of the steel plants, the packing houses, we consider them big factors in the nation, but their capital is insignificant, is nothing compared with the capital invested in agriculture. They seem important because they are organized, are taking advantage of all the fine points. We have that before us in agriculture. Let us study out a plan, let us organize. I wish you could see this the way I think I see it. I believe the farm bureau movement is the biggest thing ever developed in this land for the farmers. It is the biggest chance in the world to do something for ourselves. I wish Ventura County were a little stronger in that line. There are many problems here to be solved. For instance, you do not have so many beans this year because you had trouble in handling last year's crop, the price is not good. How are you going to make the price good? By getting together, studying market conditions, working out the proposition from the production to the time the beans reach the consumer. The success of every specialized farming industry in this state is entirely due to business organization of the farmers.

We can help you work out your problems. We have drainage engineers who could come down here and look over this land and it will not cost you a cent. We are very glad to give you all possible support. You can call upon both the state and federal service for all we can give you in that respect. We need the products, you need the money. The problems before you need attention from an organized body of men. One farmer cannot get very far alone, but the whole body, well organized, moving together, can accomplish almost anything, as has been seen in other lines of industry.

I am greatly interested in soil problems and such like, but at the present time --(Continued on Page 42).

Firestone

LAST year Firestone lifted the 30x3½-inch tire out from all the sizes made and focused attention on it—as the *only tire size capable of quantity production*. And not only the tire user but the whole tire industry responded.

Firestone built an exclusive factory devoted to this size—and worked out a specialized way of manufacturing this tire in quantity—without a backward move—every tire good.

Today—while others are centering on the tire for owners of small cars, the Firestone 3½-inch is out in front with a highly specialized and bed-rock economical method of manufacture.

Firestone is two years ahead because Firestone saw two years ahead—and you owners of light cars get the benefit.

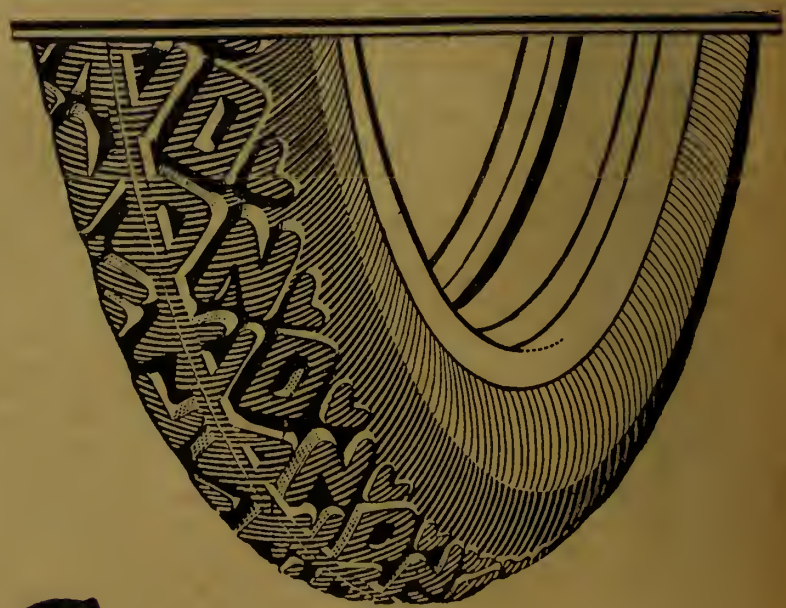


30x3½

(non skid)

\$22.50

Gray Tube \$3⁷⁵
Red Tube \$4⁵⁰



Most Miles per Dollar

California Cultivator

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Los Angeles, July 10, 1920

One Dollar Yearly



CONSTRUCTIVE thought cannot build upon the premise that present economic or political conditions satisfy a people restless under an intolerable cost of maintaining life or burying the dead.

Intolerance is a spirit fostered by capital and construed as stand pat patriotism. Every advance of wage secured by threat or strike is within a few months more than met by higher living costs. The allies of the Reds are those swollen with profits and watered stocks who refuse a compromise, will not reform, and continue the control of the necessities of life which all must have.

Production is faltering, our very reserve bank system has failed production in its hour of need, and it remains to be seen if the recent effort to lower prices on luxuries through withdrawal of credit on basic production, has not started the first stone of the avalanche of panic.

There is still time for the people and the country to travel a safe road to contentment and prosperity. Primer principles of economics and Christian ethics would remedy our ills, but the Golden Age is not yet here. Many of our profiteers have heeded the warning. The menacing growl from injustice has reached many banks and financiers and made them tolerant, but our food control is of bolder build, greater nerve and coarser fibre. A grasp and sway over the markets is still maintained, with daily increasing cost, which is merely added to food prices, and the spirit of the black book and reprisal is rampant for those who are in the way. No saving impulse minimizes serious blows at essential production and in this late hour of the country's needs the cattle industry, already crippled, has been called upon to meet increasing loss.

The effort to find a common ground between contending forces seems hopeless. But is it? Can we forget our prejudice and inclination, our raw edged nerves, our violent disagreement, our mounting debts, and firmly face our problems? Let us try and take the farmer's viewpoint. He subscribes to no destructive doctrine. The farmer is the one conservative of the nation, the home builder, the taxpayer, the corner stone of national well being, the defender of liberty when Paul Revere sounded his midnight call and when the Prussians threatened the freedom of the world.

Production is faltering. Lack of stability as much as lack of profit is responsible for lowered production. Millions of people have quit farming and stock raising already, and more millions are trying to, but this is no hopeless situation which we cannot remedy through constructive laws where needed and application of those now on the statute books. Wine ferments before it clarifies, bread seethes and bubbles in the making. A healthy open kick or crab hurts nothing and clears the air. The British tars were famous for their "grouch" at the time they won their brightest laurels.

On all sides we can see encouraging signs. We hear a well known old guard politician stating there is a tendency for too much government and too little representation. He tells

us that complicated and permanent bureaucracy and Prussian autocracy involve support of identical principles. We hear of a well known corporation lawyer asking for fair play in the trial of agitators whom he must personally dislike and despise. We hear the soldier son of a fearless ex-president exert a plea for a bunch of radicals elected to a state legislature. All these are little things but they show a broad and healthy trend. The American people can be depended on to follow their destiny and to reconstruct national economic problems upon lines which will stimulate production if they are allowed to be articulate.

Political chicanery robs them of their birthright of liberty and self government through diversion of their votes to ineffective channels, but our evils of boss rule, trust domination, wasteful government, unjust burdens upon basic production, and other evils are realized because the national conscience is sensitive and the national ideals are exacting. Look abroad and consider the plight of other people. Comparatively we are well governed, comparatively we are nationally and individually as pure as the driven snow when conditions in other countries are impartially reviewed.

We are a lusty nation and have not reached our full growth or strength. We have not reached our zenith nor that period of decay which destroyed the greatness of many nations in past history. The decline of every nation started with neglect of essential production, crowding into cities, replacing work with luxuries. We have a touch of the destructive malady, but the constitution and the good sense nationally to throw it off with work and fair returns for that work as a panacea.

The very elements of strength of this nation and the hope for the future lies in the present discontent with existing conditions. If men supinely accepted as inevitable the present distribution of political and commercial power and economic returns, with production thankful for its meager portion, we would have cause for fear of the future.

Labor has asked distribution on a new scale, constantly enlarging and increasing its demands. Payment has so far come entirely from production as manufacture and marketing have kept in advance of labor's demands. Capital has been badgered with unreasonable wage demands and threats until the sense of security and stability has become a hope instead of existing fact, and the result has been the wild scramble to get all they could while they can, called profiteering. Labor is dissatisfied today when it is reaping returns neither production nor capital could allow permanently. The labor union man is merely a percentage of the population. He isn't the people. The great farming and producing class outnumber him by millions. The union labor men and the farmers together would

Getting Together

By A. L. Spellmeyer

be the vast majority, but still there would be many millions entitled to representation. The farmer is dissatisfied, and most stock growers are broken men now, and it's these men who must work and produce before the union man has anything to eat. Fill the national larder first, safeguard its replenishment, and then you labor men and capitalists can fight it out with votes and due regard for the peace and rights of those other equally patriotic citizens.

Nationally we are one great family, and we have our quarrels, but don't bring in outsiders. The tactics of the foreign Red disgust and anger our 99 to one majority, and that ought to rule. We have seen nothing in the soviets to emulate or admire, and while our profiteering element is criminally inclined and grossly shortsighted to provide material for agitation, still even this profiteering is preferable to many foreign customs prevalent in Russia and the Orient. Condemnation of honest criticism and the effort to misname it as unpatriotic secures no result. Confusion of issues and temporary diversion of public investigations does not secure a permanent relief nor help reconstruction. Capital has inherited no divine right to place its wishes above the will or best interests of a people. Order depends on law, stability depends on order, and capital must have stability. Our great representatives of capital should be scrupulous in their observance of the spirit of law as expressed by existing government, as the observance of law means the existence and safety of their investments.

If the signers of the Declaration of Independence had been afraid to voice their thoughts we would have no free country now. Our national wealth and power are facts realized by the world, our potential economic strength greater than that of any other nations. In the recent war we have proven we are a fearless, active country, ready to risk and win when the need arises, a mass of brawn sensitive to a threatened loss of liberty, and not a hulking bulk of inert money worshippers.

The labor man, the farmer, the manufacturer and the merchant must have capital, and capital is merely the aggregated savings of a people invested in banks, which is finally manipulated through intricate machinery. The individual dollar is weak, but the bulk of many dollars is mighty and may enslave the multitudes who own it if manipulated by men whose only god is greed. All dollars are cautious and cowardly, yours, mine, labor's, capital's. Dollars require surety and stability before they will invest. Dollars hope for large profits but demand stability and fair interest.

Blind hatred of capital can bring no stability. A people quarreling and seething with dissension bring no inviting welcome of a safe haven for these dollars. Money is afraid, in big lots or in small. It's put in a sock

instead of being engaged in healthy work, producing something and causing a turnover to the benefit of its owners and humanity at large.

If a panic should come to the country tomorrow it could only be short lived, while national demand far exceeds supply. The threat is a far worse menace than the realized fact would be. But we may be hungry, and we surely will have high living costs if we don't get down to work and encourage our essential production. When we produce more goods than we can sell, at home or abroad, then we can expect hard times, but that's some time off, as there is shortage of everything from big steers to water meters and from autos to money. Ill timed efforts have called cattle loans, forcing prices down, making inevitable less cattle later and higher prices. That is the endless circle, and we are told this was done to make the meat price lower to consumers. A conspiracy to promote agitation would not have had any greater success than the blundering of a bureaucracy in fooling with the economic machinery, removing the cottar keys and nuts in a repair effort, and then putting on the power. More production is the remedy and key note for lower living costs, and that production must have its profits, two cottar keys and double nuts to insure that healthy stimulating profit. Making the path between producer and consumer shorter, paving it with stability and safety, will help, then inevitably greater production will bring lower costs of food, economic security and city prosperity.

All this wild socialistic theory of Marx and others is based upon hatred and tinged with impractical brains. Marx could not even meet the issues of practical life in his time nor provide adequately for his wife and babies. We must have capital, the aggregated savings of a people, and when we hate it we merely hate ourselves. We must stabilize our money, capital, our concentrated credit, our whatever it may be called, through safety, and correct improper handling or abuse of the power it gives. We want the hundred cent kind of capital and should gladly pay it six per cent, but we don't want the 35 per cent kind we have right now which, owing to insecurity, demands its enormous interest or hides in its shell. Our value units merely represent so much purchasing power which enable us to eat, clothe ourselves, educate our children, provide for old age and attempt to safeguard the well-being of the coming generation.

Who cares if wheat is a dollar a bushel or five, if meat is two cents a pound or 50, if the cost of every element entering into the production of that wheat or meat is proportionate?

Work, stimulated production through fair profits, and stability for capital to make possible more production, more irrigation and power projects, more railroads, would bring us all more prosperity and economic health. There is a common ground for agreement if we will all use our possibilities of compromise, restrain our greed, curb our hatred and go to work.

Difficult problems are ahead but this country has its destiny and will fulfill it. Salvation comes through travail of spirit, the child arrives after labor. We have much to hope for, and if the present discontent has helped us understand the other fellow we can be thankful for it and eventually secure the fulfilment of our national hopes and ideals.

Agricultural News Notes of the Pacific Coast

Northern California

The Ward nurseries at Eureka have been purchased by Seattle florists.

Directors of the Placer County farm bureau will meet at Loomis on July 24.

The thermometer reached 115 in the Sacramento Valley during the recent hot wave.

Chico, Butte County, reports damage to apricots from recent hot spell and north wind.

The Glenn-Colusa reclamation district has advertised for bids for construction work.

A farm center poultry culling demonstration was held at Chico, Butte County, last week.

Experienced packers are wanted by fruit growers of Placer County. Some inexperienced help can also be used.

Grace Brothers of Santa Rosa are putting in a fruit and berry dryer. It is 160 by 200 feet and is built of cement.

Boys' and girls' agricultural clubs in the Durham district of Butte County will raise pigs and calves in their coming contest.

The Colfax, Weimar and Applegate farm bureau centers of Placer County joined in a Fourth of July picnic at Woolley Flat.

Farm Adviser Harrison of Yuba County has asked the supervisors to require licenses of all persons desiring to spray orchards.

Farm adviser of Placer County is collecting and shipping to cold storage fruit for the Placer County exhibit at the state fair.

Almond growers of Durham, Butte County, recently listened to talks by Professors Taylor and de Ong on almond cultural problems.

The gasoline situation is reported much better in the Sacramento Valley due to the lessened demand for gasoline for harvesting machinery.

Manager Sheehan of the Grape Growers Exchange says there will be no drop in the price of grapes from the \$65 a ton set by the exchange.

Hayward, Alameda County, apricot growers say they are getting no offers from canneries. Peaches are being contracted at from \$100 to \$125 a ton.

For failure to supply irrigation water to his rice fields P. N. Ashley of Oroville has recovered \$1,800 damages from the Sutter-Butte Canal Company.

Farm Adviser Sullivan and his assistants have completed a "farm and crop map" of Sutter County showing location of farm centers, principal crops and orchards and soils in different sections.

The California highway commission has agreed with Mendocino County to construct three bridges across Long Valley Creek and one across Outlet Creek, the county to pay \$20,000 to the commission.

The members of the Castro Valley farm home department are responsible for a very successful picnic at which they entertained the members of all the farm home department centers in Alameda County.

The secretary of the Japanese Association of Northern California has just returned from a visit to Japan and says that Japan will have no rice to export the coming season in competition with the American grown product.

Central California

The dairymen of California met at Modesto June 26.

Another big fish cannery will be built at Monterey.

Tulare will hold its county fair at Visalia, October 9-16.

The Fresno County farm bureau held a hog auction on July 9.

Fruit driers installed at Lodi are ready for the season's grape crop.

Modesto's June shower held up harvesting for a day or so but did no material damage.

The California Peach Growers report gratifying number of signers of renewal contracts.

The board of supervisors of Tulare County has contributed \$1,000 to the premium fund of the county fair.

Monterey and Santa Cruz Counties report a short crop of Newtown Pippins. Bellflowers will give a better than average crop.

Onion growers of San Joaquin County are unable to harvest their onions at present prices and are compelled to disk them under.

The cannery at Hinckley, Fresno County, will start on peaches. Delay in delivery of fuel oil made it impossible to begin on apricots.

The first car of apricots for the cannery of the California Cooperative Association at San Jose was shipped from the Stanislaus Growers Association.

Stanislaus County will have a display at the state fair at Sacramento for the first time in several years. County Horticultural Commissioner Rutherford will have charge of the exhibit.

Farmers in the Acampo section of San Joaquin County have signed agreements that they will not sell lands to Japanese, Armenians, Turks, Greeks or Hindus.

The Santa Cruz News is urging that restriction be placed on abalone fishing. The News states that the abalone meats have become so popular that this shell fish is in danger of being exterminated.

The California farm bureau marketing association reports top prices at recent sales: Tegner, June 2, 187-210 pounders, \$14.10; Fresno, June 18, 208 pounders, \$15.65; Bakersfield, June 19, 208 pounders, \$15.55.

It is reported that Japanese associations of the Valley are collecting a large fund with which to print and distribute propaganda to offset the sentiment in California against their acquiring farm lands.

By majority of nearly eight to one the voters of the Fresno irrigation district authorized its establishment. This district takes in 246 acres immediately adjoining Fresno. It is one of the units of the Pine Flat project.

The Tulare Register says that reports from sections about Tulare show there has been a rise in water level in practically all of the wells. The snow on the mountains has melted gradually and the gravity flow is said to be remarkably good.

Over 500 persons visited the W. Sam Clark fig ranch near Sultana, Tulare County, on Sunday, June 20. The principal subject discussed during the orchard demonstration was pruning of Adriatics to bring down cost of picking and also to increase crop yield.

Southern California

The cannery at Banning has begun on apricots and cherries.

Two hundred acres of barley grain was burned at San Jacinto last week.

El Cajon, San Diego County, wants to have an agricultural course in its high school.

The Elsinore cannery will not operate this season because of the short apricot crop.

The Yucaipa Apple Growers Association has decided to install a sizer in its packing house.

There is a proposal to establish a summer hotel on the summit of Mount Baldy 10,000 feet above sea level.

The Ventura County farm bureau is considering the wool situation and the possibilities of a state wool pool.

Demonstration of dust spraying for control of insect pests was made in the orchard of J. T. Walthall at Hemet on July 6.

A party of cotton growers of the Imperial Valley is making a tour of cotton growing fields in the Salt River Valley of Arizona.

The Covina Poultrymen's Association held a meeting on June 23 at which Cornele G. Ross of Pomona was the principal speaker.

Hemet canneries are exceedingly busy places. Apricots are averaging well in size. Jam and marmalade are made from the small fruit.

The regular annual meeting of the California Lima Bean Growers Association will be held at Oxnard, Tuesday, July 13, at 10 o'clock.

Malaga grape shipments will start from the Imperial Valley about the middle of July. Carloads of Thompson Seedless are already moving.

Professor R. H. Vaile of the Riverside experiment station has been holding demonstrations in Riverside County on moisture penetration and irrigation.

Thomas Rawson of Rawson Valley near Hemet is said to be the largest bee owner in Riverside County. He estimates his 1920 crop at 2,500 cases, all of which is contracted at 24 cents a pound.

A. M. Nelson, for several years county development agent of Imperial, has died. Mr. Nelson was a very young man but had already done much for the valley in his official capacity. He served with the overseas forces during the war.

The San Diego County highway commission has advertised for bids on construction of the Coronado-Chula Vista road, the Julian road from El Cajon to Foster, the Mission road at the north end of Poway grade, and the Wynola-Julian road.

An Illinois visitor to Brawley says that he visited every hotel and eating place in the town and couldn't buy a cantaloupe to eat. He said: "I come here and want cantaloupes and watermelons and I see them shipping millions of them but I can't get one."

The Pacific Electric railway has applied to the railroad commission for permission to increase all city fares outside of Los Angeles to seven cents and in Los Angeles to create two zones in the present five cent limits, the inner or five cent zone to extend 2½ miles from the center of the city, the outer zone fare to be ten cents.

The Coast and General

The Hood River, Oregon, county fair will be held September 17 and 18.

An effort is being made to increase dairy herds in Kitsap County, Washington.

The National Apple Shippers Association will convene in Chicago August 11-14.

Skagit County, Washington, will hold its county fair at Burlington August 9-14.

Twelve cents per pound is being paid for cherries at the Yakima, Washington, cannery.

Cotton crops of Arizona have had ideal weather this season. The growth has been rapid.

The annual picnic of the Clarke County, Washington, farm bureau will be held August 19.

Shipments of cantaloupes from the Salt River Valley of Arizona began on the last day of June.

The cantaloupe crop of the Salt River Valley of Arizona is reported as having a heavier set than usual.

Canadian wheat growers have made a profit of 40 cents a bushel on their original government guaranteed price.

Arizona reports summer showers have set in over the ranges and stock are already showing great improvement.

The Deschutes County, Oregon, fair will be held this year at Redmond at the same time as the Redmond potato show.

The Oregon Growers Cooperative Association now has 1,300 members representing 26,000 acres of fruit and berries.

Hood River Valley, Oregon, claims to have 20,000 acres of orchard fruits marketing through the Fruit Growers Association.

Members of the farm bureau of Clarke County, Washington, will make a two days excursion through prune orchards of the county.

The Arizona Cattle Growers Association and the Arizona Wool Growers Association closed yesterday a two day convention at Flagstaff.

The Oregon Duroc-Jersey Swine Breeders Association held its annual picnic at Salem on June 5. More than 100 breeders were present.

Eastern Oregon sheep owners have begun bringing in flocks for summer pasture on logged off lands in the Hood River national forest.

At the recent annual meeting of the Fruit Growers League of Jackson County, Oregon, W. H. Bingham of Medford was elected president.

Apple shippers from the Wenatchee district of Washington are busy with railroad officials trying to secure adequate transportation facilities.

The Colorado Potato Shippers Association held its third annual meeting at Denver, July 2 and 3. Transportation problems were the most serious among those discussed.

According to report of the state department of horticulture the Wenatchee district of Washington is the only one that will produce as large a crop of apples as last year.

A series of farm bureau fairs will be held by nine different sections of the Clarke County, Washington, farm bureau in the fall just preceding the Western Washington fair at Puyallup.

A Small Evaporator for Household Use

By W. V. Cruess, Fruit Products Laboratory, University of California

THE evaporator described has been designed for household use in drying fruits and vegetables on a small scale. It will hold from 25 to 50 pounds of fresh material at one loading. It may be built by any one who is able to use a hammer and saw. All of the materials needed will be found on the farm or may be purchased at the nearest hardware store.

The drier is a little too large to be conveniently used over the kitchen stove and is designed to be operated by a small gas plate or ordinary coal oil heater. It has been found best in practice to operate the drier independently of the kitchen range because for

Door

The door is made up of the following materials: Two pieces 1 inch by 1 7/8 inches by 14 1/4 inches; two pieces 1 inch by 1 7/8 inches by 32 inches; five pieces, 3/8 inch by 6 inches by 18 inches; one piece, 3/8 inch by 2 inches by 18 inches; three small hinges; one small hook clasp. Above the door is nailed a piece 1 inch by 4 inches by 18 inches to brace the frame and a piece 1 inch by 2 inches by 18 inches below the door for same purpose.

End

The end opposite door is made up of: Two pieces, 1 inch by 1 7/8 inches by 14 1/4 inches; two pieces, 1 inch by

boxes to raise it above the level of the stove used as source of heat.

Asbestos

The legs, the lower parts of frame, and door and lower six inches of inside walls must be covered with heavy asbestos to prevent the drier taking fire during use. This precaution is necessary. See photograph.

In Room 204 of Hilgard Hall at the university at Berkeley is located a drier built after the above specifications. Those interested and who are within reach of Berkeley may see this outfit and thus obtain a clearer idea of its construction. The drier was made of rough materials, by inexperienced labor and represents a result that any one should be able to duplicate or improve upon.

Trays

The trays are made up as follows: Size 13 3/4 inches by 24 inches over all; two pieces, 1 inch by 3/8 inch by 24 inches; two pieces, 1 inch by 3/8 inch by 11 3/4 inches; two pieces, 1 inch by 3/8 inches by 13 3/4 inches; two pieces, 1 inch by 3/8 inch by 22 inches; one piece, ordinary door screen, 13 3/4 inches by 24 inches. Eight trays should be made. First cut the screen to size indicated above. Place two pieces 1 inch by 3/8 inches by 24 inches on work table and the screen over them. Across ends over the screen nail the two pieces 1 inch by 3/8 inch by 13 3/4 inches. Between these end pieces and over the side pieces nail the two pieces 1 inch by 3/8 inch by 22 inches.

keep operator informed of temperature conditions.

Operation

Apricots and peaches are pitted, pears peeled, cored and cut in quarters and lengthwise, and apples peeled, cored, and sliced about one-quarter inch thick. To preserve the natural color fairly well, dip the prepared fruit in a dilute salt solution containing three tablespoons (level) per gallon of water, leaving the fruit in the brine one minute. Do not rinse it. If a bleached color is desired spread the fruit on the trays and stack the trays in the drier placed on ground in the open. Cover top of drier opening and temporarily the openings around bottom of the drier with boards or burlap. Place small pan of burning sulphur on the ground and close door. Leave one hour. Dry as directed below.

Prunes, Thompson Seedless and Tokay grapes are dipped in a boiling lye solution contained in an agate (not aluminum) pot. This solution contains one level teaspoon of lye per gallon. The time of dipping for prunes is about 30 seconds, and for the grapes above given about five seconds; long enough to crack the skins. Rinse in water and spread on trays. Muscat grapes are similarly dipped but a lye solution containing five level tablespoons of lye per gallon of water is used at boiling point about 20 to 30 seconds and the grapes rinsed in water.

Potatoes, carrots, beets, turnips are

most fruits the drier must be operated 12 to 24 hours at one time and the use of the range for heater interferes with the preparation of meals or when used between meals causes the expenditure of an excessive amount of fuel. Only a small amount of heat is needed for the drier.

Size

The drier stands 42 inches high; of this height, 36 inches is made up of the walls and top, while six inches represents the legs. It is 32 3/8 inches long by 18 inches wide over all, and of 14 1/4 inches by 30 inches inside dimensions. It carries seven tray runways spaced four inches apart. Each tray is 24 inches by 13 3/4 inches over all. The bottom of the drier is open except for a piece of sheet metal 11 inches by 18 inches, hung in this opening to act as a heat distributor. The top is closed except for an opening 14 1/4 inches by four inches near door end. One end of drier is formed by a door, and one end is closed.

Thoroughly dried non resinous wood should be used. Redwood is very good for the purpose.

Sides

Each side consists of the following materials: Two pieces, 1 1/2 inches by 1 1/2 inches by 30 inches for top of frame; two pieces, 1 1/2 inches by 1 1/2 inches by 41 1/2 inches for sides of frame; two pieces, 1 1/2 inches by 1 1/2 inches by 27 inches placed six inches from bottom; six pieces, 3/8 inches by 6 inches by 30 inches; seven pieces, 1 inch by 1 inch by 29 1/2 inches for tray runways.

Assemble the frame. Cover with the 3/8 inch by 6 inch material and four inches apart on center. First runway is placed six inches above bottom of lowermost 3/8 inch by 6 inch piece.

1 7/8 inches by 36 inches; six pieces, 3/8 inch by 6 inches by 18 inches; one piece 1 inch by 1 7/8 inches by 18 inches placed below last 3/8 inch by 6 inches piece to brace legs. The 3/8 inch by 6 inch material of sides, end, and door form the inside walls of drier, the frame is to the outside. See photograph.

Top

The top is made with an opening equal to inside width of drier and with four inch wide opening which is located four inches from door end of top. The following pieces are used for the top: Two pieces, 1 7/8 inches by 1 inch by 14 1/4 inches; two pieces, 1 7/8 inches by 1 inch by 30 inches; three pieces, 3/8 inch by 6 inches by 18 inches; two pieces, 3/8 inch by 4 inches by 18 inches.

Legs

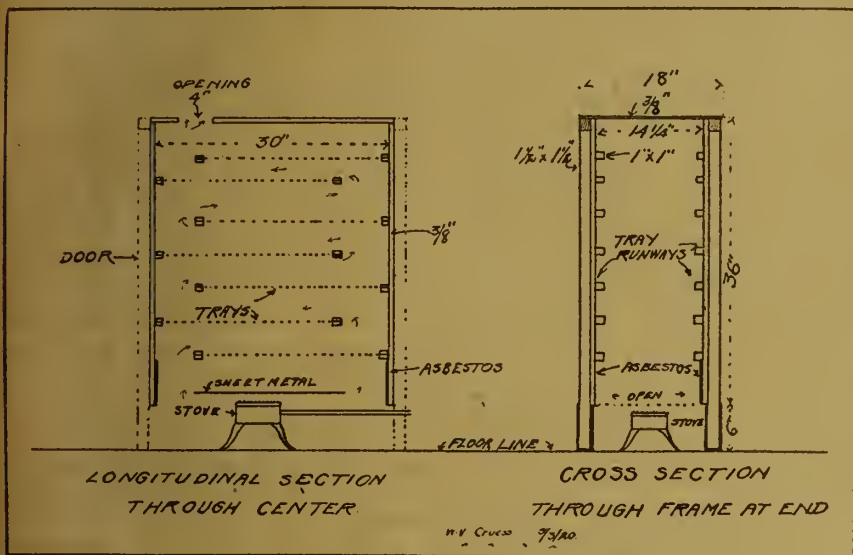
The four pieces of 1 1/2 inch by 1 1/2 inch by 40 inch material forming frame of sides project six inches below the bottom of the drier and form the legs.

Radiator

A piece of sheet metal about 11 inches by 16 inches by 18 inches is hung from its four corners by wires, looped over nails driven to the frame. This sheet metal should rest about one inch below bottom of lowermost 3/8 inch by 6 inch pieces forming sides of drier. It is used to distribute the heat evenly.

Heater

A small gas plate or coal oil heater or very small "air tight" wood or coal burning style of heating stove or small ordinary heating stove or large kitchen range may be used as source of fuel. It will be necessary in most cases to place the drier on bricks or



Photograph of Completed Drier

Showing tray, tray runways, and heating system consisting of piece of sheet metal and small gas plate. A coal oil heater or air tight heating stove may be used instead of gas plate.

Turn tray over and nail to the ends the two pieces 1 inch by 3/8 inch by 11 3/4 inches. See photograph for appearance of finished tray. This makes a reversible tray three-eighth inch deep and 24 inches by 13 3/4 inches over all.

Thermometer

Purchase a 75 cent dairy thermometer at the nearest drug store. Use it on lowermost tray at all times to

peeled, sliced and dipped in boiling water one minute. String beans are prepared as for the table and are dipped ten minutes in boiling water; peas, five minutes; corn, ten minutes on the cob; then is cut from the cob. Dried corn is a pleasing product.

Place loaded trays in the drier with end of topmost tray placed against door; second tray against rear wall of drier; third against door and so on (Continued on Page 42)

Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock
 Rural Californian, Established 1877
 Combined with California Cultivator 1914
 Livestock and Dairy Journal, Established 1901,
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Saturday, July 10, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

USING POWER

The labor situation "is getting no better fast." There is, however, vast improvement in the manner of the farmer's accomplishing the impossible. Notwithstanding the shortage of gas, there is a vast increase in the use of gas engine power on the farm. The shortage of hydro-electric power has caused great increase in the use of the internal explosion engine, but much of this increase would have come in any case. The car window view up through the great valley shows literally hundreds of combined harvesters and threshers operated by tractors. In one grain section we recently noted five of these great outfits in one view.

The use of gas is economical; it is effective; it is necessary.

STOCKYARDS WOULD HELP

All is not going well with the livestock men of this state. The general situation can be summed up in mighty few words. Few men are making any profit out of their operations. Dairymen and pork producers are actually going out of business at a sacrifice, and their brothers in distress, the cattle men and the sheep men, can't!

The above statement is no mere

facetious remark; it is the cold fact. High feed and labor are forcing many a dairy cow to the shambles and high feed is putting a lot of hog raisers out of business. On the other hand the cattleman, loaded up with fat steers, carrying the heaviest overhead charge ever written against any former market crop, fails to interest buyers at prices considerably lower than have been offered during the past two or more years, and the sheep man is up against the proposition of having no market for his wool and little or no demand for his lambs.

That such a situation is temporary goes without saying. At the same time that does not help out right now. Eventually our livestock resources and

FUNDAMENTAL EVIL OF JAPANESE LAND OCCUPATION

A statement written by United States Senator James D. Phelan for readers of the California Cultivator. Senator Phelan writes that as soon as possible "I will send you an article on the occupation of farm land by the Japanese in California, whither I go tomorrow." This letter was written early in June and things have been moving in Senator Phelan's home town, which is now quieter, and we hope we may soon hear from him.

The tone of these few words is such that we are expecting a most frank and convincing statement from the senator. We wish all statements touching upon this vexing question might be as fair and contain as little which will generate race prejudice as does Senator Phelan's statement.

My objection to the occupation of the soil of California, either by ownership or lease, by the Japanese agriculturists, is fundamental. I am aware of the shortage of farm labor and of the flattering statistical showing which is due in a considerable measure to the activities of the Japanese. But we can better afford to have less production and more genuine prosperity. A prosperous state is one which supports a patriotic population, homogeneous in character, contributing to the social and religious life, upholding American institutions, and ready with their lives to hold their ground and defend their flag. When any element enters into the community which disturbs its equilibrium, weakens its system, or threatens its life, no mere production of wealth for a short time or a long time can compensate the state for the loss. A foreign substance has entered the body politic which can not be assimilated. It deranges the human economy and, unless encysted, causes disease and ultimately dissolution. For example, a Japanese family takes a farm from a white family. The white family contributed to the community life in all its branches and the proceeds of its labor circulated freely, carrying benefits wherever they went, and still remaining in the community. The Japanese are unsocial, yet gregarious, deal with one another, and send back to their country the net results of their thrift. Their presence and their impossible competition not only expel the whites but prevent other white people from settling in and developing the state. The amazing growth of the Japanese by immigration and by a high birth rate easily forecasts the ultimate fate of California, which, unless there be remedial laws, will become an Oriental colony. It would be better for the fields to remain uncultivated until a desirable population is attracted than to foster an evil which, like the genii of old, will rise to slay us.—James D. Phelan. June 8, 1920.

practices will be adjusted to fit conditions — nothing being more certain than that producers will not continue to produce at a loss.

How the adjustment will be made remains to be seen. There are several angles that may be taken advantage of, but one thing is certain, we must seriously consider the problem of more stable and satisfactory markets for our livestock. The time is at hand when we must lay aside our prejudices and set about developing markets at our principal killing centers that will at least give us as fair a run for our money as producers in other sections enjoy. With practically 90 per cent of the livestock of the United States going through union stockyards, it would seem that such a plan of selling must be the most satisfactory. We are further inclined to that feeling when we note that many of our producers who talk loudest against such a plan are themselves shipping out of the state to points maintaining stockyards.

The Cultivator is prepared to admit that certain evils can develop around packer controlled stockyards, but we believe that such evils are not to be compared with those operating under our cumbersome system. It is a lot easier to wallop a producer on his home range and with no one looking on than it is on a big open market — at least the temptation is greater.

Frost protection was the subject of discussion at the last meeting of the Riverside Citrus Center at Fairmont Park.

RICE VS. OTHER CROPS

Driving along the bank of the Sacramento River something over a hundred and fifty miles north of the city of Sacramento we recently saw pumping plants, the installation of one of which cost around a quarter of a million dollars, and these plants were lifting and pouring upon rich lands many rivers of water from the one great Sacramento. The wealth of this wonderful river and its meaning to this state was made very plain by these rivers of water and by tens of thousands of acres of lands covered by these waters and through which the wealth bearing rice was showing. In one district alone there are between 110,000 and 120,000 acres covered with

Valley from using the waters of the Sacramento River. The order was signed by Judge A. B. McKenzie and is effective at 8 a. m. July 12. The city's suit was based on the contention that use of the river's water was depriving the city of Antioch of an adequate water supply.

"Judge McKenzie set the time for a hearing to show cause why the order should not become effective for 10 a. m. July 8.

"Among the 330 defendants to the suit are nine irrigation districts and 20 agricultural companies. The irrigation districts are the Willows, Jacinto, Providence, Princeton-Cadora-Glenn, Maxwell, Compton-Delavan, Cordua, Honcut-Yuba and Sutter River."

Some of the Antioch and other delta users of the waters of the Sacramento claim their rights to the waters of the river were established 50 or 60 years ago. This priority cannot be denied by the upper water users, but they do set up the claim that the production of \$25,000,000 worth of one crop means much to California and that while its use should not be denied to those whose rights were established many years ago, the use of a great river of water to hold back the tides of the Pacific is an awful waste, and suggest that there should be some system of locks devised for the Sacramento River which might enable the use of these wealth giving waters and at the same time prevent the tides from carrying salt waters to productive land.

IMMIGRATION OF JAPANESE

That the number of Japanese in this state is increasing and that some illegally here have been ordered deported is shown by the census and by reports of the commissioner of immigration. That the figures proving these facts have not always been used correctly is shown. The California Cultivator has endeavored in treating this subject to handle it as a purely economic question concerning the people of this state and this country. We have appealed for a cool discussion of the facts and what it means to the state economically to have within it a race which cannot and probably would not wish to be assimilated. We desire to refrain from statements which would lead to conditions like those which prevailed during the anti-Chinese demonstrations of some years ago. We have repeatedly said that there is no question of superiority or inferiority. In fact, we have often stated, in effect, as we quoted last week from the San Francisco Chronicle:

"We make no claim that our race is 'superior' to any Oriental race and will raise not the slightest objection if Orientals claim to be our superiors. It is an academic question in which we take no interest. And neither, for that matter, does the Japanese government." But our desire has been to show the facts as to conditions, and in doing this in our paper of nearly a year ago we quoted from some other paper which purported to give an official statement by Commissioner of Immigration Caminetti to the senate. This statement we made as having been reprinted by the Sacramento Bee. Editor McClatchy of that paper has written, asking as to the source of this quotation and stating that it is in error, for his paper never quoted it as given.

At this distance it is impossible to say where these figures were obtained other than at the time we were making hundreds of clippings from papers from all parts of the United States. The reprinting of this statement has called forth the following from John P. Irish from which we quote:

* * *

In your issue of January 31 you (Continued on Page 46.)

water and growing rice. This use of the waters of the Sacramento covers a period of but few years, in fact, only three years in nearly every case. The wealth created in these fields has called for comment of the economists of the state and nation. The state produced in 1915 considerably less than a million bags; in 1919, over three and a half million bags, these commanding from six to eight dollars per bag, or well up towards 25 millions of dollars. The present year's planting has been the greatest ever.

Now comes the rub, however, in the water to make these fields profitable. The taking of these rivers of water from the Sacramento, together with the light early snowfall in the Sierra Nevada, have caused the serious condition which is confronting the farmers and fruit growers of the lower Sacramento delta lands. The waters of the river are so low that navigation is practically discontinued above the city of Sacramento. The tidewaters of the Pacific are thus permitted to bring their salt water farther up stream than has ever been known. The growers of pears and other fruits, of asparagus, spinach and potatoes, are forced to accept the alternative of withholding water from their lands or destroying the crops with the salt water. To secure relief they have gone into the courts and, as quoted by the daily press:

"The city of Antioch, Contra Costa County, on July 2 secured in superior court a restraining order forbidding 330 rice growers of the Sacramento

Growers Discuss Pathology of Citrus Trees

AT the Porterville meeting of citrus growers the methods advocated by P. A. Boncquet, plant pathologist of Tulare County, were explained by Mr. Boncquet and endorsed by many of the growers present. Horticultural Commissioner Charles F. Collins was unqualified in his approval. The condemning of winter cover crops, and of some cultural and pruning methods was not unanimously endorsed.

The meeting was called by the county pathologist in conjunction with the Porterville chamber of commerce of which R. H. Morrison is secretary and manager. Mr. Morrison presided at the meetings.

Mr. Boncquet's first talk had to do with soil and nitrification. Nitrification is not possible in soil compacted and water logged, nor on the other hand if entirely dried out. Two plowings per year were recommended. Once in fall while soil is dry "plow very deeply, at least 12 inches. Leave lumps. Do not cultivate. Plow again in spring, not quite so deeply. Do not plow deeper, nearer the tree, than the rim or drip of tree. Do not cultivate. I do not believe in dust mulch. Never use sub-surface packers. Irrigate often; every week if possible but very shallow. The orange is a surface feeder. No winter cover crop, but for summer plant cantaloupes." Some were present who had tried cantaloupes but were unable to get them to grow because shade in bearing orchard prevented. There were none who had succeeded.

One method of procedure advocated for bog soils was the use of sulphuric acid in dilute solution.

By P. A. Boncquet

The soils here spoken of are the "Porterville adobe," the "Olympic adobe," and the San Joaquin sandy loams as indicated on the California soil map edited by the bureau of soils. The soil samples were taken in the neighborhood of Lindsay. It was also in the Lindsay orange district in the orange grove of Dr. C. B. Root that the first practical results from use of sulphuric acid were obtained. The results have been so remarkable, so rapid, and so convincing, for the betterment of the groves, that at present more than 1,500 acres are under the sulphuric acid treatment.

Colloids of the Soil

A colloid is of the nature of gelatin or jelly. There are colloids which when they are dry have the property of again becoming soluble in water. They are called reversible colloids. There are other colloids, which when they become totally dry, fall in powder and become insoluble.

Sulphuric acid destroys the protective colloid and gives reasonable soil management opportunity to bring the soil back to fertility. From sticky and viscous the soil becomes finely granulated, the air and the water penetrate easily, the roots of the trees can function again.

Results Obtained

This crumbliness of the soil after the sulphuric acid treatment can now be examined and investigated in our experiment of last fall. The soil in question was not different from many other soils where the puddled condition can be observed. Today the soil which was treated is crumbly for about a foot and a half in depth. So perfect is the crumbly nature that it can be lifted with the foot without losing its structure even when plenty of moisture is in the soil.

Other Effects

Sulphuric acid converts the black alkali to white alkali and thus renders it possible to wash out the salts from the soil. Black alkali is eight times more toxic to the plant than white alkali; consequently sulphuric acid increases the fertility of a soil by the mere fact that it renders the soil a better habitat for plant life.

Sulphuric acid liberates the phosphoric acid in the soil, renders it soluble and available. The potassium salts are likewise disintegrated and become more abundantly available.

Effect on Plant Growth

Sulphur in the form of sulphuric acid is a plant food. It was generally

assumed that the soil contained always a sufficient amount of sulphur as plant food. The fact that the addition of sulphuric acid immediately stimulates plant growth, seems to do away with at least the generality of that assumption.

On addition of sulphuric acid to the soil in very dilute solutions the orange trees gain new vigor. The yellow and mottled leaves become an intense and heavy green. The growth of the trees where the experiment was started last fall has been three times the growth of previous years. I am even of the opinion from what I have seen that sulphuric acid does cure certain kinds of mottled leaves. Where the sulphuric acid was applied last fall the trees have set a heavy crop.

Sulphuric Acid and Nitrification

Sulphuric acid in dilute solutions has a wonderful effect on the nitrifying power of the soil. The fact that the colloidal matter is precipitated and the soil becomes more porous would naturally lead to such results, but the actual test of the increase in nitrification has demonstrated that the intensity of the bacterial action can be doubled for one and the same soil. I am now conducting field experiments to corroborate these findings under field conditions.

Mode of Application

The application of sulphuric acid presents quite a number of difficulties that actual experience alone could bring to our attention. Before everything it should be applied in a very dilute solution. If the solution is too strong it becomes toxic to plant growth and will certainly hinder instead of stimulate it. In all our experiments we have not had a single case where even the slightest damage has been done but we have all the time insisted that the solution should be very dilute. It takes for some of our soils more than ten tons of sulphuric acid per two acre feet of soil to neutralize the total carbonates. It is only when all the carbonates have been changed to sulphates that the soil can become theoretically acid from the sulphuric acid. In my experiments I have used only 200 to 300 pounds of sulphuric acid per acre. All the desirable results were obtained with that small amount. In the main I consider that 200 pounds of sulphuric acid per acre applied in two successive irrigations will change the colloidal nature of the soil to about a depth of one foot.

How to Dilute

The sulphuric acid is run in the water a cubic centimeter per miners inch, per minute, hence, to nine gallons of water one centimeter of sulphuric acid is added. I have tried as much as ten cubic centimeters per inch without any effect on the plant, but I judge that the concentration is too strong where the water is free from carbonates and where the soil has most of its carbonates converted to sulphates.

In the beginning of the experiment I used glass syphons to distribute the sulphuric acid in sand box to distribute the sulphuric acid in the water. The point of the glass tube was so drawn out as to have the required volume of acid, but the air bubbles in the sulphuric acid soon collected in the syphon. This necessitated the very unpleasant work of amorphing the syphon. Thereupon Warren Towt, a progressive grower of Lindsay, devised a more practical way. A brass bung was made and covered with tin. Two block tin tubes were soldered in. To one a glass stop cock was attached. The other tube was so arranged that it relieved the vacuum in the drum as rapidly as the acid was drawn off. The whole drum was placed on a rail above the sand box. The bung then turned down, the glass faucet regulates the inflow, according to the number of miner's inches. The second block tin tube is turned on top of the drum.

Possible Results

I expect the reinvigoration of our side hill orange orchards. These groves have been and many are still producers of the most wonderful Navel oranges grown. The bringing back of these orchards to their initial productivity will mean a new stimulus to the orange industry. The

dry bog hill sides are practically frost free. The fruit on those hills is thin rinded and smooth. The sugar content and the luscious Navel taste is most intense. These soils are eminently fertile, but the accumulation of the colloids to a depth sometimes of two or three feet made them an impossible habitat for the roots of the Navel tree. The soil became impervious to water and to air; its management became well nigh an impossibility even in the hands of the most energetic and most intelligent grower. Sulphuric acid will help the plow, the subsoiler, the spring tooth harrow. It will help the irrigator, it will reduce the cost of orchard management and make the soil again the best soil for orange groves.

The practical results now obtained are proof that these expectations are justified. Even critics not ready to accept the theory but thoroughly versed in dry bog conditions could not help but admire the results. The soil treated last fall acts like a sponge to water, is resilient to the foot, does not bake hard, does not run together from the water, there is no plow pan.

The soil is in the best condition for nitrification up to a few inches from the surface. The trees are covered with new growth. The crop is abundant.

SEVERE INJURY TO PEACHES BY THRIPS

What is apparently a new species of thrips is doing great damage to peaches in the deciduous fruit sections of San Bernardino County. Harry S. Smith, in charge of the office of pest control, made a survey of the problem last week at the request of Geo. P. Weldon, pomologist of the Chaffey Junior College of Agriculture. So far no satisfactory means of control have been worked out, but Mr. Weldon is now engaged in making life history studies upon which the necessary control measures may be based.

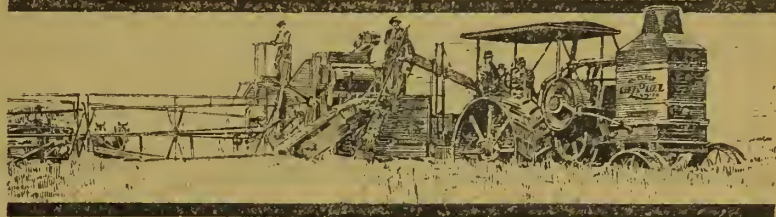
Reports from Akron, Ohio, state the demand for automobile motor truck tires at present shows an increase of more than 200 per cent above the output a year ago.

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Dried Fruits and Vegetables

By Ernest Brauntton

At Burbank in Los Angeles County, onions and cabbages are apt to be blown about the country. This is not because of wind velocity but the reason of the dryness of the vegetables. The dehydration plant of the Burbank Canning Company has been in full swing only since May 22, but an extension of the main building has already been found necessary, another drying unit is being installed, and before another week passes the capacity of the plant will have been doubled.

Manager C. R. Henderson showed a Cultivator representative through the plant from reception of the fruit from the grower's truck to the dried product ready for shipment. The first run was made on rhubarb, requiring six to eight hours to dry. The stalks are cut into pieces an inch in length. In curing the natural color and aroma have been retained. The second product processed was cabbage, requiring the same time in drying as the rhubarb. It is first run through a slaw cutter and the finished material is as white and light as soft pine shavings. It would easily blow away if exposed to a good breeze.

The third run was of Coachella Valley onions, and these dry as white and light as the cabbage. They also are dried in from six to eight hours. They have a mild nutty flavor that is quite attractive. One does not notice any onion flavor until thoroughly masticated. Then comes the recoil and one realizes the sliced chaff still is onions. The full strength of taste and smell is revived by cooking.

The Apricot Season

On June 26 the plant started on apricots and will continue as long as the fruit is available. This processing requires nearly twice as long as for the vegetables, or ten to 12 hours. Some very large and fine apricots have been dried but the great advantage of

such local plants to the fruit grower is that he may here market his second grade and overripe fruit. The product, in appearance at least, is superior to the sun-dried, the color being much brighter.

The fruit is halved and pitted by a crew of girls, just as in a cannery. It is then run into a steam blancher for from three to five minutes, which opens the pores and sets the color. From here the trucks are run into the dehydrator, the last lot pushing former lots farther into the dry air, for the hot air moves in the opposite direction from the feeding of the fruit, so the driest fruit first meets the hot current. The temperature stands at about 160 degrees Fahrenheit. It is quite pleasurable to see this fruit so quickly and cleanly dried, away from the dust and dirt so often incident to sun drying.

The consumer, of course, soaks the fruits before cooking, as is done with all dried fruits, but onions, cabbages, etc., readily return to their original form and value in the cooking process. The writer saw both the vegetables mentioned perfectly recovered in cold water.

The late world war was responsible for the scientific development and perfection of dehydration and has left it as a heritage for peace. Dried vegetables will be largely used on steamships, in mining camps, fishing camps (as in Alaska) and all centers of activity far removed from the truck farm. They also reach the housewife thoroughly prepared for cooking. All agricultural products may be perfectly processed, and the fact that plants may operate every day of the year in California is no doubt largely responsible for the increasing number of dehydrators being installed in this state. With one in every locality the farmer need not let his produce rot in the field because of low prices in the shipping market.

Pickling Olives

A bulletin has just been issued by the United States department of agriculture on "A Chemical Study of the Ripening and Pickling of California Olives," written by R. W. Hiltz and R. S. Hollingshead.

Following a general description of olive culture and varieties in California, the olive picking season, changes in composition of the olive during ripening, and methods of pickling, this bulletin reports the results of an extensive investigation, undertaken in 1914 and continued through 1916, to determine whether immature olives were being pickled and sold as ripe, and also whether inferiority was being concealed by a process of coloring.

The plan of the investigation was to follow during successive seasons the development of the fruit on marked trees of different varieties and in different localities, recording changes of composition and physical characteristics, especially color, to determine possible differences between the immature and ripe fruit, and the relationship between color and maturity of the fruit. The laboratory methods of examination consisted of a physical examination of the samples as to color, flavor, ease of cleavage of the pulp from the pit, short diameter, number of olives per pound and percentage by weight of pits; and a chemical analysis of the flesh and of the pits. Different lots of olives were followed through the pickling process and examined in a like manner.

The results of the examination of the fresh olives showed that during the ripening, after the pit is formed, the pits remain practically constant while the growth in the flesh continues. This is accompanied by an increase in moisture content and in oil, the latter increasing at first rapidly and then more slowly. The color changes noted were from a green in September to a dark purple in December or January. The olives with the deeper colors were usually larger and heavier than the others from the same tree or grove and had the most oil and solids in the flesh. This was not always true, however, in compar-

ing olives of the same variety from different groves or localities.

Data obtained on pickled olives showed that the process had little effect on the size of the olives or on the percentage of pits. The solids-not-oil showed a notable decrease from the fresh fruit, and the oil a corresponding increase, rising from about 60 per cent on the dry basis for fresh ripe fruit to 70 or 72 per cent for the same after pickling. The color changes during processing were very marked, green or yellow olives often forming a blacker final product than purple olives. The best color was developed in olives showing some red at first, the fully ripe purple olives tending to lose their color and become brown or tan.

The conclusion drawn from the results of this investigation is that the best index of maturity for olives, both fresh and pickled, is the percentage of oil in the fruit flesh. A minimum oil content of 17 per cent in the flesh is recommended as a tentative standard of maturity for Mission olives and other common varieties except the Manzanillo, for which a standard of 15 per cent is recommended, and the Ascolano and Sevillano. The latter have to be gathered when relatively immature and should not be sold under the designation "ripe." It is emphasized that the proposed standard must be applied with caution because of the great variations noted in the composition of olives of the same variety grown in different localities. It is thought, however, that the data presented will make possible the detection of fraud in the pickling and coloring of immature olives to simulate pickled ripe olives.

FROST PROTECTION OF LEMONS

Messrs. Shamel, Scott and Pomeroy of the U. S. department of agriculture are co-authors of a report on frost protection in lemon orchards, a ten cent publication which may be had by writing Superintendent of Documents, Government Printing Office, Washington, D. C. The bulletin touches on

methods of orchard heating, objects of investigations, plan, behavior, heated and non-heated plats, comparison of injury in different varieties, and other valuable data. The authors summarize:

"Extremely low temperatures during December, 1912, and January, 1913, caused serious damage and loss to unprotected lemon orchards in many sections of Southern California.

"Detailed records of the proportion of merchantable and frozen fruits produced in five heated and five non-heated acre plats of Eureka and Lisbon lemons during the calendar year 1913 and in two comparative plats during the calendar year 1914 in the Corona lemon district are presented in this bulletin.

"These data show that in orchards which were protected with an adequate supply of heaters during the cold weather of 1912-13 a large percentage of merchantable fruit was saved and harvested throughout the year.

"In orchards which were not heated a large proportion of the lemons picked during the first six months following the freeze were frozen or unmerchantable, and the trees did not return to normal production until a year had elapsed.

"Non-heated orchards which had received good care prior to the freeze of 1913 and also during that year had returned to normal production by the beginning of 1914, and the heating during the cold period in 1913 had practically no effect on the second season's crop.

"In unprotected orchards, under comparative conditions, a greater amount of injury was found in the Eureka than in the Lisbon variety. The differences were not sufficiently great, however, to warrant the conclusion that there is any considerable difference in the hardiness of the two varieties. Such differences as appeared were entirely due to differences in the habit of growth of the two varieties, the Lisbon having denser foliage."

DRYING APRICOTS

For the benefit of new members, or rather those new at the game of drying apricots, the Prune and Apricot Growers gives in *Sunsweet Standard* the following drying suggestions:

It is not easy to write directions explicit enough that a novice can pick and dry 'cots without danger of costly mistakes. Nevertheless, some general directions may help in the absence of an experienced director.

Apricots ought to be entirely ripe when picked for drying. When over-ripe and very soft they fail to hold their shape and make slabs, which are good fruit but unsightly and lose market value.

The lug boxes of 'cots are brought from the orchard to the cutting shed. The tray, usually three by eight feet, is placed on wooden horses of convenient height and the 'cots emptied on the tray, a box at a time. Beginning at one corner of the tray with a little box in which to drop the pits, cut each 'cot in halves with the pit removed and lay the halves with the cut side up as close as they will lie till the tray is covered. A second tray can be set on the first and filled, and so on till too high for convenience.

The trays are then piled on a field car so the ends overlap back and forth, called staggering, that the sulphur fumes may the easier get between the trays to all the 'cots. Put from 15 to 20 trays on the car and run it into the sulphur house, which should have but very few cracks for smoke to escape, yet if the house is too tight the sulphur will not burn. In an iron dish or hole in the ground, under and far enough below the trays to avoid setting them afire, put from four to six pounds of sulphur and light it with a match and piece of paper.

Close the door and leave for three or four hours, or until the sulphur fumes have penetrated the entire fruit, which can be told by cutting a half.

There is little danger of sulphuring too much. If the sulphur is lighted in the evening the 'cots can be left in the house all night.

Spread the trays on the dry ground with sides touching and a pathway left at the ends. The time to dry depends on sun and wind. When the 'cot has a leathery feel (in the cool of the day) and is not easily mushed between the fingers, it is probably dry enough to stack the trays and let them cure a few days in the shade.

There is one investment that a large percentage of both prune and apricot growers have made and never regretted, namely, an investment in trays and other drying facilities. The establishment of a dry yard establishes an insurance of marketing opportunities. In a few districts where the growers are not so equipped they are decidedly at a disadvantage, having no recourse from green sale. When prices and market opportunities are better known there will come the necessity of deciding between drying or green sale. In apricots especially the decision is in many instances difficult and influenced by conditions not at first considered.

As we make sale for canning purposes we are required to pick the firm fruit, whereas riper specimens are suitable and better for drying purposes. During the last few days if the ripening fruit hangs on the trees it gains very largely in sugar content and consequent weight so that it is impossible to compare and figure dried tonnage from a cannery sale. Some growers have figured that ripe apricots picked for drying purposes will weigh up to as much as ten per cent more than the same apricots picked green for shipping or canning. Taking this situation into consideration we can moderate the five or six to one shrinkage of drying when we compare dried and green sale opportunities. In addition to this the cannery picking

requires more careful supervision and labor—to some extent more expensive. On top of this we have one other item to be considered; namely, the expense of cutting and drying. As another item in favor of drying, we should not lose sight of the consequent pit production and the excellent market that has developed for this product.

SUMMER SPRAY FOR RED SPIDER

Prof. de Ong is recommending summer spray for the red spider pest. He writes:

"Use of sulphur, either as dust or liquid spray, will check the summer form of red spider on plum and prune trees. Farmers are advised to apply the spray at the first sign of infestation.

"The mixture should be made of two gallons of concentrated lime-sulphur solution combined with five pounds of cooked flour paste, into which five pounds of fine sulphur has been stirred. This will make 100 gallons of spray mixture at a cost of about 80 cents or \$1. A thorough drenching of the trees requires about eight gallons per tree. Use this spray only on almond trees; it is too strong for prune or other orchard trees."

The Oroville plant of the California Olive Growers Association has been taken over by the California Packing Corporation.

COMMERCIAL EVAPORATORS

Three small commercially built evaporators will be installed at the University of California farm, under the joint supervision of the division of viticulture and fruit products and the division of pomology. Tests during the coming fruit season are to be made for comparison with the University of California farm evaporator by Professors W. V. Cruess, A. W. Christie and F. E. Neer.

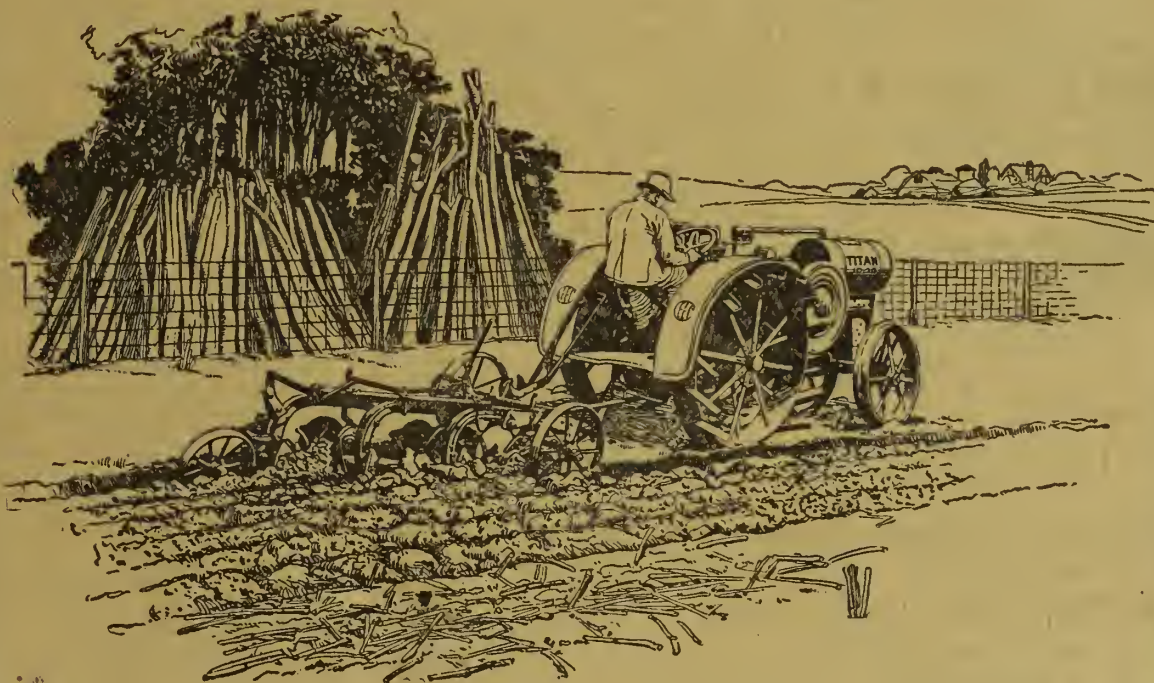
Accurate comparisons are planned to be made upon the yields obtained in the various evaporators, quality of the product, fuel consumption, cost of operation, and between sun drying and artificial drying. The season will be started with apricots and will be continued with peaches, prunes, grapes, pears and apples.

ASSISTANT SECRETARY OF AGRICULTURE

Elmer D. Ball of the Iowa agricultural college has been appointed assistant secretary of agriculture.

"The department of agriculture and the agricultural interests generally are particularly fortunate," said Secretary Meredith, "in securing the services of a man who has such a wide knowledge of the agriculture of the country and who is so intimately familiar with the problems that the farmers have to solve."

Canners are paying \$110 a ton to Fresno County growers for cling peaches, \$70 for Lovells, and \$60 for Elbertas.



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SMALL EVAPORATOR

(Continued from Page 37.)

down to the lowermost tray, which is against the door. This leaves a six inch space between each tray and wall or door making it necessary for the rising hot air to travel across each tray or a total distance of over 15 feet to reach the outlet of drier. Start the fire and so regulate it that the lower tray is maintained at 140 degrees Fahrenheit to 165 degrees Fahrenheit.

When lower tray is dry, remove it; shift the other six trays down one tray and insert a fresh tray on the topmost runway (that is, if there is still more product to dry). When lowermost tray is dry, proceed again as just directed.

Probable Cost

It should be possible to build the drier complete without stove for not to exceed \$15. The cost will be less if scrap lumber from "about the place" is used; and more if it is necessary to buy a small heater and to use new lumber. One man's time for eight hours was needed to build the drier in use in our laboratory.

For further information on methods of drying, the reader is referred to Farmers' Bulletin 984 of the United States department of agriculture, Washington, D. C., obtainable free of charge on application to the above department.

ALKALI AND SOME OTHER SOIL PROBLEMS DISCUSSED

(Continued from Cover)

my particular work is not exclusively in that line. However, what spare time I have I generally give to the study of any problems that are presented to me along that line. I have spent 20 years looking at things from the field point of view. As has been said, I have had the pleasure of mapping the soils of Ventura County and also of about 85 per cent of the agricultural regions of California. The idea of that work is that we believe different species and varieties of plants have a soil and climatic environment in which they reach their greatest perfection. We as farmers in the past have not given much attention to that idea, thinking most of the time that most any species of plants will grow under most any conditions, but we have lived in general agricultural days and have not given a great deal of attention to specialized lines. We are gradually approaching European conditions and conditions where we have got to get down to business farming and know how to get the fullest returns from the soil. When we do that we will be face to face with the fact that there are certain soils that are not best adapted to certain crops, and it is up to us to try to locate in different sections of the country the different kinds of soils and then work with the farmers to see if we can finally locate the types of crops that do best on those particular soils. The idea of soil mapping is to show the different kinds of soils and then study the chemical and physical properties to see what bearing they have upon the crop, the idea being to try to work in time down to that range of crops that will give as near 100 per cent as possible.

I feel that about 90 per cent of the citrus orchards are only about 60 per cent normal; that is, the crops are only about 60 per cent of what they should be. Forty per cent, in my estimation is almost the difference between success and failure. Of course many orchardists are taking advantage of most of the information they can get in order to make the best of their land. They are a little more up to date than farmers in other lines. In far too many cases the farmers are getting out of the soil only from 40 to 60 per cent of its possibilities, and in analyzing the thing down it is very evident that that difference of 40 to 60 per cent below efficiency decides the question of success or failure, and this is the thing we are working on, trying to analyze conditions so as to be able to know how to get maximum returns.

In mapping this great region here we found that in past ages the ocean cut back to the hills and this was a bay with a shallow depth of water. In this bay was deposited sediment washed down from the high land, which finally filled it up, and the grad-

ual uprising of the coast region and the alluvial deposits have left this great delta through here. It is a recent body of soil. It is a soil that is still in the process of formation. You know that in wet weather there are streams that cut across sections of this county and deposit fresh sediment, so we call this recent soil, as compared with older deposits on the high lands. Recent soils have a uniform cross section; that is, except for the different stratifications caused by water action. The older soil in the uplands is entirely different. It was laid down uniformly, but time has acted upon it to change it very materially and much of the fine material has been carried down to the lower levels, which has caused a heavy subsoil. In the upland areas the heavy subsoil is not deposited by water but carried down by the percolating action of water, while on the low lands the only heavy subsoil is the plow pan or that deposited by water. These soils also differ in that their mineral composition has not been materially changed. The gypsum, lime, etc., has not had time to be washed out and they are usually well supplied with lime, while the uplands have, naturally, lost most all of their soluble minerals. Those soils, being more thoroughly drained, lose their water more quickly and are unable to support much of a growth of native vegetation, so in many instances they are relatively deficient in organic matter. In my survey I did find some upland soils that were dark colored, but that was due to another reason of which I will speak later. The general tendency of upland soils is excessive drainage, removal of excess salts, removal of alkali, while low lands contain all their own salts plus some accumulation from the uplands carried down by water. These soils are in their infancy. In the hardpan stage the soil is on the decline.

In our experience in mapping soils we found there are two things responsible for dark colored soils and the dark color in soils is always related to the organic matter present. If a soil is dark colored it is pretty safe to assume it is high in humus content. Soils in a semi-arid country, deficient in rainfall, low in lime, are usually deficient in organic matter. Some of these upland soils are black and contain humus, and that is simply due to the great excess of lime. We have found strips of upland soil black and rich in humus, while almost adjoining them would be soil deficient in organic matter. It looked strange to us and we thought by analyzing the soils we might be able to solve the problem and thereby be in position to suggest something to increase the fertility of soils. We found upon analyzing the dark colored soils an exceedingly high lime content—from ten to 30 per cent—and practically every particle of the native grasses grown upon such soils was converted into humus, which is the staple form of organic matter. Lime had the power of converting the organic matter into humus, while the other soil low in humus was low in lime and the organic matter was oxidized and passed directly back into the air and the soil received no benefit. It was the same as it was 10,000 years ago, except that it had gradually lost its fertility, while the other body of soil had converted the organic matter into humus, increasing its water holding capacity, and was capable of holding its supply of winter rainfall at least two months longer, simply because the added organic material gradually worked down until the soil became dark colored way down deep and produced several times the amount of vegetation that the other soil did. In producing fertile soil, I consider the two big things are control of soil moisture and the organic matter. These two things are the very heart and life of successful and enduring agriculture in the semi-arid West, and if we as farmers can control those two things it will be possible to attain maximum production with minimum outlay and still maintain the fertility of the soil.

Let me draw attention to a picture to illustrate the difference between the two soils. Suppose we could take a cubic inch of soil and magnify it to a cubic mile. We would see about 30 to 50 per cent of the total volume of that area in air space, called pore space. That is the area in which the air circulates through the soil. We might be able to walk down and take a look around. If we looked up

through the one kind of soil, low in organic content, we would see only small deposits of organic matter clinging to a large number of big boulders. In that mass of material we would see struggling creatures wallowing about seeking for something to devour and work on. Those are the bacteria of the soil, of which there are about 100 varieties. They would be feeble and inactive, not able to do what they wanted to do in that soil, subdividing very slowly; in other words, marking time, waiting for an improvement in conditions enabling them to perform their natural function. We would also notice in that mass of material the air would be about as free and fresh as the air we breathe, an unfavorable condition for plant growth. It has been found that in fertile soils the soil atmosphere is so dense that a human being could not live in it. In other words, soil atmosphere must be highly charged with organic acid or carbon dioxide and other gases if it is going to be favorable for plant growth. That condition would not be present in poor soils. Further, we might see that the rainfall passing down through that mass of material would be just about the same quality of water as found at the surface, an unfavorable medium for the solution of plant food. In other words, it would be perfectly fresh water, incapable of dissolving plant food. That combination of conditions would not bring about conditions favorable for plant growth; plants would starve even though there were thousands of pounds of plant food near by. I might mention conditions now developing in the western part of Kansas, which is a dry farming area dependent upon a limited rainfall, where they must grow such crops as can mature with the amount of rainfall received. The soil is being robbed of its organic content until within the last 50 years it has declined 30 per cent. A careful examination of crop yields in a five year period has shown that the crop yields in that area have also gone down 30 per cent and it is not unreasonable to suppose that in the next 50 years the western half of Kansas will have gone back to the pasture stage. So, in parts of Nebraska and North and South Dakota. An analysis of the soils in the western half of Kansas shows that they contain enough potash and phosphoric acid to mature an unlimited number of crops, yet the plants in that area are starving for potash, starving for phosphorus because they are not available.

Let us look at that mass again. In the soil relatively well supplied with organic matter we will find the interstices between the soil grains filled with a spongy mass of material called organic matter. In that we would see countless millions of these bacteria wallowing about, digesting and working in that material, looking for leguminous plants to store up nitrogen; where there would be one in the other place there would be at least a million over here, and they increase by the million every 24 hours until the soil is a mass of life and action, which is what we would call a perfect laboratory soil, operating 100 per cent under nature, and we must approach that condition as nearly as possible if we expect to get 100 per cent from the soil. Over here we have the unfavorable condition which often accounts for the 40 per cent deficiency which I mentioned and which we need to make up the profit in agriculture. In the ideal soil the soil air, passing down, soon becomes charged with carbon dioxide, a by-product of bacterial action, the soil water becomes an active solvent, releasing plant foods in sufficient amounts to supply the requirements of the most exacting crops. There is the condition we need if we expect the best results—that is the thing we want to work to.

We as farmers, I think, in the past have been too much inclined to depend upon hearsay, the experience of our neighbors, which is of course often very valuable, and our own casual observations above ground. We have not looked beneath the surface to know what is going on. That is the thing we should do more, and I predict that in the next five or six years we will know much more about what goes on beneath the surface of the ground. In the last year farmers in this country have lost thousands of millions of dollars because of failure to act on the regulation of moisture conditions in the soil. Most of the damage in the fruit orchards has been

due to deficiency of soil moisture in late fall and early winter. We have been thinking that after the fruit was harvested the tree could take care of itself until the winter rains. As a result in these dry years conditions have become so unfavorable that we have lost thousands and thousands of dollars, purely as a result of failure to supply the tree roots with moisture at a critical time. It is just as necessary to irrigate during the fall and early winter as it is during the time the fruit is setting. People are becoming alarmed and are beginning to seek a remedy. We have been judging from surface conditions. We have been supplying water according to the apparent needs of the vegetation above ground, while it should be added according to the needs of the soil, not according to the indications on the plants above ground. I suppose 99 out of 100 farmers have been deciding when to irrigate by scraping with the foot a foot or so below the surface, or waiting until the plants wilt. I want to say that when a tree begins to wilt it is already calling for a supply of water and it began to suffer before it began to wilt, and as soon as it begins to wilt and every day the wilting continues it is passing through a period of shock, attempting to adjust its functions to meet the scant supply of moisture. In delaying that one irrigation the tree has passed through a three, four or five day period of shock. Now, we apply water to that orchard, say, five or six times during the year and if we wait until the tree wilts, it has passed through several periods of shock, which certainly reflects through the whole physiology of the tree. Take a condition of that sort through a period of years and it will result in dead wood, stubby growth, not sufficient vigor to put forth buds for the next year and generally an irregular and declining orchard. An accumulation of a number of small factors through several years is responsible for most of the troubles in our orchards. It is very much like an individual doing a full day's work on a full day's ration and at periods of every ten or 15 days the ration is cut down one-half and he is still forced to go on and do a full day's work. You know what condition he would be in in a very few months. He would gradually decline because he could not keep up on that deficient ration. It is identically the same with the plant, it must be given a proper supply of moisture if it is going to give maximum returns.

In the application of water we should get into the soils to know when we should irrigate. We now have worked out in the laboratory what we call a maximum, an optimum and a minimum or wilting point in soil moisture. The optimum content is when plants are doing the best possible work. In Los Angeles County, where I have been conducting some moisture tests, we went into an orchard where after the long, cold spring the trees were late in coming out, the bacteria was not manufacturing much nitrogen and this particular orchard was at that time in what we call the optimum moisture condition, the ideal condition, and the trees were begging for the nitrogen and the soil was in condition to deliver it in maximum amounts. The orchardist put on an acre foot of water, lowered the temperature, checked the bacteria and set the whole orchard back two or three weeks. He should have kept the water off for several more weeks until the soil went down to the wilting point. This was lack of proper knowledge of soil conditions. We have those conditions all worked out and our experience is available to all, which is one of the beauties of the farm bureau movement throughout the state. The federal service and the University of California are back of this movement. We as farmers have great possibilities for doing something for ourselves and I will guarantee that any community that will get right down and work as one man, support the farm bureau movement, take advantage of everything it has to offer, will accomplish astonishing things in a short time.

I am one of you, I have farmed all my life, and I say to you farmers we have got to organize. The rest of the world is organized and we are the only fellows who are still struggling about and have not got our bearings. There are big problems ahead of us. There are problems that are absolutely vital to the welfare of this in-

dustry. Soil fertilization and soil moisture are only two of a thousand important problems of agriculture. The way to handle problems is to work together with the farm adviser.

To study moisture conditions of soils you should have a soil auger. Every farmer and particularly every orchardist should have one. I consider it is a most important investment. Every orchardist ought to go over his orchard four or five times between irrigations, to see how the moisture content is holding up, to see if the soil is delivering water to the plant roots. In an orchard in the South I saw a man putting enough water on his orchard to wet the soil ten feet deep in the upper part of the orchard to get three feet on the lower part. The roots of the trees in the upper part were rotting, were just about drowned, and he was killing his orchard. All this because he was ignorant of the simple principles of soil moisture control. He had never looked below the surface. He had added water at definite periods according to the calendar and had not considered the soil needs. When the soil was saturated, he was irrigating, and as a result chlorosis was spreading right down his orchard.

The intelligent consideration of soil moisture conditions is a definite factor in the West. We ought to add just the amount of water necessary to give 100 per cent returns, if possible, and if you take a soil auger and bore down you can in a very short time by feeling that soil tell the moisture content within one per cent, tell if it is at the wilting point. When there is 15 per cent moisture in light soils no water is needed for a week or ten days, until the moisture content is down to four, five or six per cent, when it is time to prepare for irrigation. We should study nature's methods and keep nature's factory going 24 hours per day.

There is one worry you people here have and that is alkali. You are down on a low, flat plain only a few feet above sea level, where the water table is always high. We made a soil map of all of this region and made an alkali map. We found on a big area of this county, which is fine bean land, the finest in this alluvial delta at the present time, two per cent and over of alkali from two and one-half to three feet below the surface. Under present conditions, with the water table where it is, this alkali will be held in the lower levels and will not cause serious trouble, but it is there in large amounts and if conditions ever become favorable for the rising of the water table that alkali is very soluble and can do nothing else but come to the surface of the ground. If it comes up one foot more bean culture is gone. That is one thing that the soil auger brought out and chemical analysis verified the field observations. The alkali is here and the soils are highly charged with soluble salts, and under favorable conditions the water table can easily rise a foot, and if it does the land will go back until some relief is given. On this particular field I mentioned the chemical analysis showed very little alkali at the surface, but every foot we went below the surface the alkali increased until at four feet there was plenty of it. There is just enough there to be a material factor in getting maximum returns from this ground. Something ought to be done to relieve the situation. With the information we have at the present time, we feel pretty confident that condition can be relieved. These soils need drainage. I do not care what the surface conditions are. It is not the moisture now that is doing the damage, it is the moisture at other times of the year. The water table is down all right now, but it is when it is up higher that small amounts of salts are being unloaded year after year until the soils are becoming charged with alkali, and in a very few years they can accumulate a sufficient amount of alkali to prevent the growing of crops. A little overirrigation on lands higher up will carry the salts to the low lands and raise the water table. You need relief through a part of the year when there is surplus water. Soils should be kept in what we call optimum moisture content as much as possible. The open spaces in the soil should not be filled with water. The plant stops growing until the surplus water is removed.

I am confident from analysis of conditions that we are wasting at

least a hundred million of dollars a year in commercial fertilizers. Nine out of ten farmers do not know whether their lands need phosphorus or not. They have added commercial fertilizers because someone else told them to. We have been doing too much of that. We ought to ask nature. Farming should be considered a business and nature is what we are dealing with and we should analyze conditions ourselves and nature will tell us within three or four years just exactly what is needed to get maximum returns. Use a soil auger, analyze soil conditions, study soil methods, carry on a little series of plot experiments to see what the soil will respond to. Nature will tell us exactly whether she is going to respond to phosphates or nitrates. If not, keep them off and save money. We should add fertilizers according to the needs of the land. This is another factor in that 40 per cent deficiency. I am confident we can increase crop yields 30 to 40 per cent if we will just get down and analyze nature's conditions.

The farm bureau movement is your own movement absolutely. We are paid to give our time and energy to help you solve these problems. There is not a scientific thought that comes out that cannot be gotten to the farmers within a very short time.

I might say more about the underground conditions. Our alkali problem here is serious and we need to get concerted action. Tens of thousands of acres in the San Joaquin Valley have been absolutely destroyed and are worthless until they are reclaimed. The situation is also serious in parts of Kern and Tulare Counties. They have had three successive dry years in those regions. In normal times the rainfall is just sufficient to wash the excess salts down into the water table, cleansing the soil once a year, but now after three years of deficient rainfall when there has not been enough rain to carry the excess salts down they have accumulated on the surface. I saw as much as 20 acres in one orchard where every tree was killed, simply by the rise of a little excess alkali. This could have been avoided if the farmers had looked ahead and avoided that possibility. It is a mighty serious problem with those people. That problem is universal in this state. It is possible to organize a system of drainage whereby this condition can be relieved. Your soils here are of light texture, the water passes through them readily, and the normal rainfall is high enough to remove 90 per cent of the alkali in two or three years. Your problem is simple compared to what it is in most places. You need concerted action. One man cannot reclaim his farm successfully. It is just like killing the squirrels on a ten acre tract while there are thousands of acres around to stock it up again. It is not a success when worked that way. It needs to be a big, general plan worked out for the entire delta region. The good farms are going to benefit indirectly. You are limited by the success of your neighbors. This region is one of the finest and most fertile little areas in the country, but I am confident you can increase your returns 100 per cent by a system of cropping, drainage and proper handling of the soil.

MEETING OF CITRUS GROWERS

Proper methods of fumigating citrus trees for scale pests will be the topic at a meeting called by County Horticultural Commissioner H. J. Ryan of Los Angeles County at the Covina Grammar School, Citrus Avenue, Covina, on Thursday, July 15, at 2:30 p. m. The gathering is to afford an opportunity for citrus growers, fumigators and expert investigators to discuss the best methods of obtaining results with the \$750,000 spent annually for the fumigation of citrus orchards in this county.

R. S. Woglum, entomologist of the United States department of agriculture, in charge of citrus fruit insect investigation work in Southern California for the United States bureau of entomology, will speak on "Recommendations for Fumigation Procedure," and it is expected will announce some of the results of his practical experimental work of the past season.

J. R. La Follette, foreman of pest control for the Leffingwell Rancho at Whittier, will talk on "Results of Three Years' Fumigation at the Leffingwell Rancho."

It Takes Water To Produce Milk



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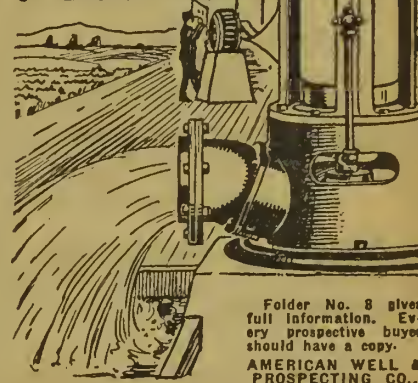
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Swarming and Its Control

By Geo. W. Price



THE normal colony of bees in the spring consists of a queen and several thousand workers. As the young bees begin to emerge the quantity of brood is increased and it gradually keeps on increasing as the bees bring in more nectar and pollen. Soon the hive is nearly full of bees and brood. The queen then starts to lay in the drone cells. The colony keeps on increasing until it is too large for one hive. The bees then begin to build queen cells. A queen cell is different from other cells in that it is larger and hangs on the comb vertically. The same egg that produces a worker could produce a queen. The queen larvae receive special food, however, and that is what makes the difference. When the larvae are grown to full size they are sealed up. The colony is then ready to swarm, and at a favorable time the old queen and most of the bees leave for new quarters.

Bad weather during the swarming season may stop swarming, as bees will not swarm unless the weather is nice. It is very seldom, however, that there is much bad weather at swarming time.

The swarm, on leaving the hive, circles around in the air a few minutes and then clusters a short distance away. There it remains for a short time before flying away to the new home. They seldom get a chance to go farther, however.

If increase is not desired, the swarm may be returned, without the queen, to the old hive and all the queen cells destroyed excepting one good one.

When increase is desired the old hive should be moved to one side and the swarm hived in a new hive on the old stand. This forces the field bees of the parent colony to join the swarm. The supers on the old hive should be removed and placed on the new one. It is a good plan to destroy all queen cells but one in the parent colony, or else destroy them all and requeen. Otherwise the colony may cast another swarm.

Swarms should be hived on full sheets of foundation rather than drawn comb. Then the honey brought in is stored in the supers, just where it is wanted. As the foundation is drawn out in the brood chamber, the queen occupies every cell as soon as it is built, so there is no honey stored there for some time. Of course there is not much brood reared, but it is not needed at this time.

Many of the best beekeepers clip one wing of each of their queens. Where this is done the swarm issues just the same, but the queen, being unable to fly, flutters around on the ground in front of the hive. The swarm goes a short distance, but upon discovering that the queen is not present, returns to the hive.

While the swarm is gone, the queen is caught and caged, the old hive removed to a new location and a new one put in its place. When the swarm comes back and the bees start to enter the hive, the queen may be freed among them.

Where the old method of hiving swarms is used, it is a good plan to have some kind of a swarm catching device on a long pole to reach swarms that cluster up high. A bushel basket on a long pole will do.

In preventing swarming, much depends on whether the apiary is run for comb or extracted honey. It is much easier to prevent swarming when running for extracted honey. Then there is a big difference in colonies. Some colonies go through the season and never seem to think of swarming, while others seem determined to swarm no matter what is done to stop them. It may be necessary to dequeen this kind of colony. Dequeening will usually stop swarming when all else fails. It is not generally used, however, except as a last resort, because a queenless colony does not seem to work as well as one with a queen.

The season seems to have some effect on swarming. The bees would much rather work in frames than in comb honey sections so the extracted honey producer does not have as much trouble as the comb honey man. If he adds extra supers as fast as the

bees need them and gives plenty of shade and ventilation there will not be much swarming. Of course, the room should be provided just before the bees need it, and not withheld until they are crowded, or they may start queen cells.

Some beekeepers use the Quinsby hive which takes a frame 18½ by 11¼. The users of this hive claim that it gives the bees and queen so much room that they have very little desire to swarm. Anyone who tries this hive usually finds this true. Others use a two-story Langstroth brood chamber. This extra story should not be put on until the lower one is almost full of brood. It is a good plan to take a couple of frames of brood from below and put them in the upper story, putting frames of empty comb in their places. The queen goes above much more readily when this is done.

About a week before the honey flow begins the frames should be sorted, the sealed brood put in the upper story and the queen and the rest of the frames in the lower one. A queen excluder should be placed between the two stories. The brood hatching out in the upper story gives room for the first honey that comes in, and the queen usually has room enough to lay in the lower one.

In the production of comb honey it requires considerable skill to keep the colonies strong and busy in the supers, and prevent swarming at the same time. The small sections are unnatural and the bees sometimes sulk for a few days before beginning work in them. During this time queen cells may be started. It is a good plan to have a few sections that were not completed the year before and put two or three of these in the center of each super. The bees will start work in these partly drawn sections sooner than if the super contained only sections with foundation. Another plan is to put a shallow extracting frame full of comb on each side of the super. As soon as the first honey comes in the bees store it in the comb and then the work spreads to the sections.

Plenty of shade helps to prevent swarming. Of course natural shade is the best and quite a few apiaries are located in orchards. Where there is no natural shade it is a good plan to use shade boards made of rough lumber. These may be placed on top of the hives or at the side.

Ventilation also helps to prevent swarming. During the honey flow the entrance should be the full width of the hive and if the weather is very warm it is well to raise the hive from the bottom board with seven-eighth inch blocks at each corner.

A colony with a young queen seems much less inclined to swarm than one in which the queen is a year or more old. Many of the best beekeepers requeen with young queens just before swarming time. When this is done laying queens should always be given as brood rearing will be suspended for a time if virgins are used.

Manipulation of the supers so that there is no break in the work helps to prevent swarming and also stimulates storing. If only one super is given and no more added until it is completed, the bees will become crowded and may start cells. After work is well started in the first super another should be placed underneath it. When work is well begun in the second super and the honey flow promises to continue a third super may be given, placing it next to the brood chamber, the first super next, and the second one on top. Toward the end of the flow the supers added should be placed on top. Then the bees do not use them unless they need them. Otherwise a lot of sections might be left unfinished.

Probably the plan most used to prevent swarming is that of cutting out the queen cells. This necessitates going over the colonies every week or ten days. Where one has a great many colonies to care for, this makes considerable work so the plan is more adapted to the small beekeeper. The strong colonies should be looked over a little before the time they are expected to start cells. It is not necessary to look over the whole apiary, for if the strong colonies have not

started cells the medium and weak have not done so. If cells with eggs or young larvae are found, they should be crushed with the end of the finger or hive tool. It is not necessary to cut them clear out. When cells are found in the strong colonies, the whole apiary should be gone over and any cells crushed. In about a week or ten days the apiary is gone over again. Some colonies will be found to give up the notion of swarming after the cells have been killed once or twice, while others have no intention of doing so. Some other method, possibly dequeening, must be used on these latter.

Some effort has been made toward eliminating swarming by breeding from those colonies which show the least tendency to swarm. Many beekeepers, after years of careful selection, find that they have greatly reduced the percentage of swarms. Of course, they have not done away with swarming entirely, but it may be that some day a strain of non-swarming bees will be developed.

CALIFORNIA NATIVE LILIES

In the Garden Magazine for April H. E. Gilkey of the horticultural department, University of California, has the following notes on our native lilies:

"The lilies of Western America form an interesting and charming group. The majority thrive in our gardens, if stable manure is kept away from them. For barbaric splendor plant the Leopard lily (*L. pardalinum*) and the Humboldt lily. Their warmth of gold and copper and vermillion gives a dash of color and life to a shaded, somber hillside that is worth any effort. If you have a bit of canyon, plant them both.

"*Pardalinum* can be obtained in some deep vermillion and crimson shades that are extremely beautiful. It may be that one of these will some day prove to be the source of the big red lily the world is looking for. When ordering *L. Humboldtii* be sure to specify the variety *magnificum*, as it is a sure bloomer and a vigorous grower; the flower, heavily blotched with orange and vermillion over a gold background, is hardly so beautiful as the chaste, clear orange blossom of the type, but you are certain to have flowers when you plant it.

"Several of the Pacific Coast lilies excel any other group in the genus for grace, delicacy of coloring and exquisite fragrance. *L. washingtonianum*, the Redwood lily (*L. rubescens*) and *L. Parryi* are a beautiful trio of shade lovers. Give them plenty of leaf mold and good drainage, but give them lots of water, too. All three are deliciously fragrant. *Lilium Parryi* may well rank as one of the sweetest of all flowers.

"The Washington lily and the Redwood lily are tall growers with regular whorls of leaves arising at uniform intervals along the stalks. Both are trumpet shaped, opening white or pinkish and fading to a wine purple with age. The latter has segments recurving more closely at the tips, and fades to a deeper wine color. The Mountain Lemon lily (*L. Parryi*), is more rare, shorter, and does not bear a great number of flowers like the others. It is a true trumpet shape, and in color a beautiful glowing lemon, often unsullied by a single tinge of foreign color, and yet again faintly spotted with brown.

"Other California lilies worth mentioning are *L. parvum*, from the Sierras, with tubular erect flowers in orange or yellow, and *L. Roezlii*, a good yellow Turk's cap. The long lost *L. Kelloggii* is a gem, like a miniature Leopard lily, but with a ground color of bluish white dotted lightly with crimson. I have seen it but once, but I shall always remember it as among the daintiest flowers."

CALIFORNIA ROSES

In the advertisement of one of the largest plant establishments in the United States we note an offer of four new roses produced in California—Los Angeles, Mrs. S. K. Rindge, Miss Lolita Armour, and William F. Dreer. Of these the first named was first introduced and is therefore least in price. But a footnote to the advertisement offers "One each of this set of four California introductions for \$14." California products bring the top prices.

ANNOUNCES COST OF PRODUCING WHEAT

The cost of producing wheat of the 1919 crop was as low as one dollar a bushel on just two farms out of 481 included in a cost of production study just completed by the United States department of agriculture. On 20 farms it was \$5 or over. The bulk of the farms produced wheat at a cost somewhat less than midway between these two extremes. The average cost per bushel for all farms was \$2.15. At such price half the farmers in question would have lost money on their wheat.

Fourteen representative districts in the Wheat Belt were visited by the field men of the office of farm management in making this investigation, a preliminary report of which has just been issued. Nine winter wheat areas were surveyed in Kansas, Nebraska and Missouri, and five spring wheat areas in Minnesota, North Dakota and South Dakota. For winter wheat 284 records were taken, for spring wheat 197.

Winter Wheat \$1 to \$8.20

In the winter wheat areas costs ranged from \$1 a bushel for two farms to \$8.20 on one farm. The average cost was \$1.87. If the price received had been \$1.87 more than half of these winter wheat growers would have produced wheat at a loss.

In the spring wheat areas the aver-

age cost was much higher, \$2.65, the range running from \$1.10 for one farm to \$5 or over for 17 farms. If the price received had equaled the average cost, between 50 and 55 per cent of these spring wheat growers would have failed to break even.

Yields averaged 14.9 bushels per acre for the winter wheat farms and 8.4 bushels for the spring wheat farms, and the cost per acre, \$27.80, for winter wheat as against \$22.40 for spring wheat.

"Necessary Price" Considerably Above Average Cost

Department specialists in cost of production studies point out in this connection that for the farms covered in this investigation the so-called "necessary price"—that is, the price necessary to give the producer a fair degree of certainty of making a profit, would be found at a level considerably above that of the average cost of production. For example, to allow a profit on 80 per cent of the wheat produced on the farms covered by this study the price would have to be about \$2.60 as compared with an average cost of \$2.15. At a price covering the average cost plus ten per cent, 75 per cent of the crop would be covered, but 40 per cent of the growers would still fail to break even.

Mexican cotton pickers are arriving in Imperial Valley cotton fields.

NEW PUMPING PLANT AT CUCAMONGA

A new pumping plant producing 675 gallons of water per minute has just completed the necessary tests for John B. La Fourcade who is the largest raisin producer in the Pomona Valley. The plant is located near Cucamonga at the owner's raisin packing house. Considerable interest attaches to this pump in that it is declared to be the deepest pump installed west of Texas lifting such a great quantity of water. The pump is lifting the water 470 feet which was unheard of up to within a few years ago. In the past the cost of raising water from such a depth has been prohibitive, but this water is being delivered on the land at a cost per inch which is much less than most water companies are charging today. In order to support the enormous weight imposed upon the pump head by the lifting of this 470 foot column of water a heavy duty equalizing ball thrust has been installed. This pump by its successful operation has demonstrated that it is possible to raise water economically from great depths, making possible the irrigation of land which up to the present time has laid virgin. A 125 horse power motor delivers the power by belt through the pump head. The pump is of the turbine centrifugal type.

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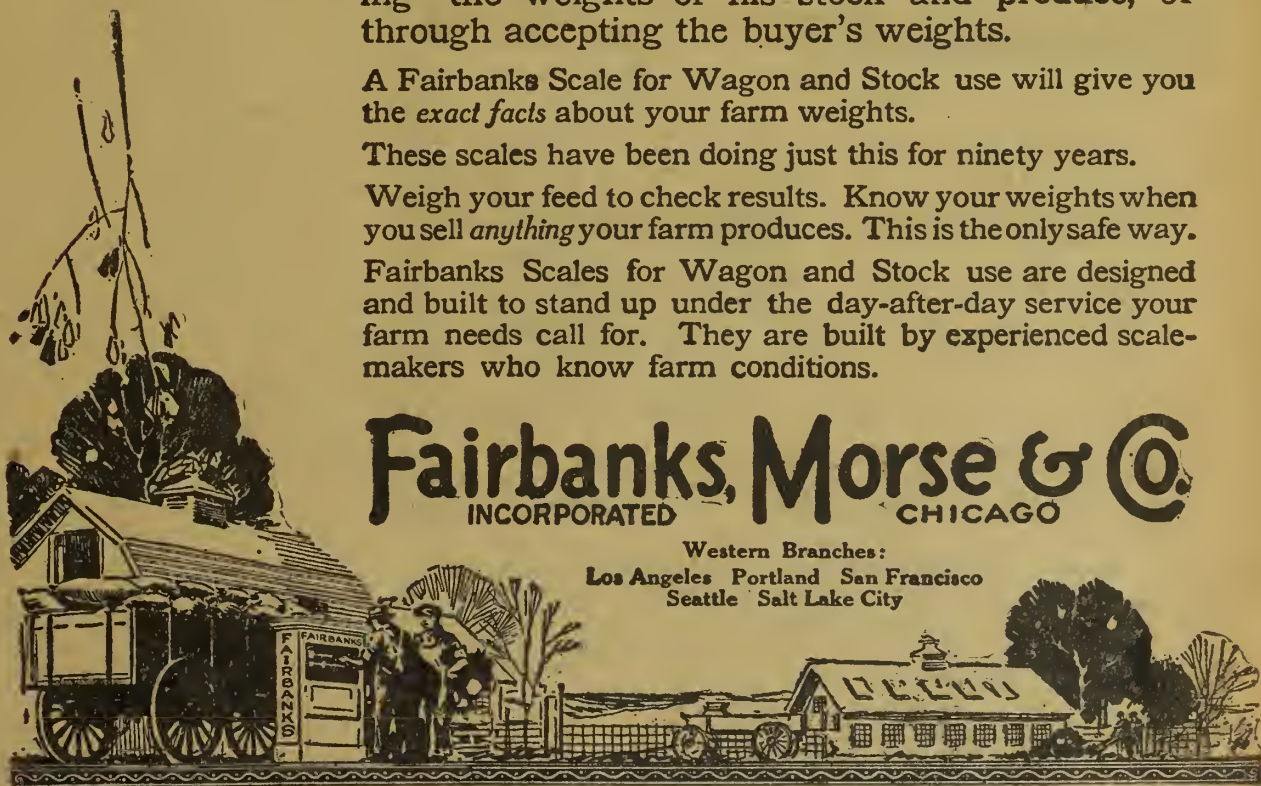
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IMMIGRATION OF JAPANESE

(Continued from Page 38.)

published some matter from me on the Japanese question, to which you replied.

In my communication commenting on an editorial in the Los Angeles Times, I said: "The Times says that in spite of the gentlemen's agreement the Japanese come in here by tens of thousands yearly — where does the Times get that stuff? Certainly not from the official records of the federal immigration service."

To this you replied: "If Mr. Irish had read The California Cultivator of October 25, 1919 he would have seen there a statement given to the federal senate by Commissioner of Immigration Caminetti and signed by John W. Abercomble, assistant secretary of labor, that during the 12 months ending June 30, 1919, the agents of the federal government apprehended 9,678 Japanese who were in the country illegally and secured their deportation. This we followed by this bit of pertinent comment by McClatchy of the Sacramento Bee: 'Those figures refer to the ones caught and convicted. It is fair to assume that at least an equal number escaped detection and were added to the constantly

swelling Japanese population of the Pacific states.'"

Now the above matter has done duty as foundation of the charge that is repeated by the board of control and all the anti-Japanese agitators who are stampeding the people by lying. I secured a letter from the commissioner of immigration denouncing the statement as false. This I published, properly charging Mr. McClatchy with endorsing a lie, quoting your publication of his "pertinent comment."

To this Mr. McClatchy replies in the Stockton Independent of June 21 that he never made the "pertinent comment" you quoted and defies anyone to find it in the Bee.

Mr. McClatchy then adds this: "As a matter of fact the Cultivator has misquoted the Abercomble statement, which will be found at page 7 of the hearing before the senate committee, and is to the effect that during 11 years ending June 30, 1919, a total of 4,869 aliens who entered the country without inspection were apprehended and deported."

Now, sir, you have published what is proven to be untrue, and to strengthen it have quoted Mr. McClatchy in a "pertinent comment" that he never made. What are you going to do about it?

* * *

We are going to do as we have done above, acknowledge the error and make correction and publish the above which carries the statement as to immigration as it should have been made. At the same time we are going to appeal to Colonel Irish and to everyone discussing this subject to handle it in a way so as to create a friendlier feeling between the two races and less of race hatred and prejudice. The Japanese themselves would not tolerate a condition in their own country which they are asking Americans to be content with in this country.

As a model in convincing argument and as a plain and patriotic statement

we commend the communication written for Cultivator readers at the request of the editor by Senator Phelan. This statement appears in box on this page.

Certain it is the sane reasoning which must ultimately decide this question is not advanced by circulars such as "The Anti-Japanese Pogrom" by Col. John P. Irish. This circular abounds in such expressions as "Lie in both versions," "falsehoods," "correct the lie," "stampede the state by lying" and other similar expressions.

The Cantaloupe Season



THE opening of the 1920 cantaloupe season finds higher prices prevailing than ever before; a threatening shortage of cars, especially of the improved refrigerator type; a planted area exceeding that of last season by more than 7,000 acres; and the Imperial Valley section of California leading all rivals in early shipments.

Crop conditions, generally speaking, are reported to be good in the early shipping sections of the West, and the quality of melons appears to be excellent. Growers in the Imperial Valley are meeting the car shortage by allotment of available cars according to acreage. Reports are to the effect that this system has so far produced good results and that the crop probably will be moved without great loss, as the weather seems to favor a prolonged shipping season.

West Increases Acreage

The story of the early cantaloupe market in recent years has been largely the story of the Imperial Valley, for this section has the early market practically to itself. Shipments from the valley have increased rapidly in recent years, far exceeding any other cantaloupe growing district. Last season carlots of this stock were sent to 200 cities, not including many local diversions. The cities of Chicago, New York, Pittsburgh, and Los Angeles were the principal receiving centers, with a dozen other large cities receiving from 100 to 300 cars each. Distribution was liberal in the East and West, but generally lighter in the North. The short but active shipping season for the valley usually extends from the first week in May to the middle of July. This season, however, if the present weather conditions continue, shipping may extend into August.

During late years the center of cantaloupe production has been moving steadily westward. Having but one-fourth of the total acreage in 1915, California this year has nearly one-half. Arizona likewise increased its plantings 50 per cent during the same period and New Mexico increased its acreage from 500 to 5,270. Arkansas within the same length of time more than doubled its cantaloupe area.

The forecast of the United States bureau of crop estimates for cantaloupe acreage in 1920 was 70,820 acres compared with 62,365 acres in 1919, an increase of 13.6 per cent. Eleven states show an increase while six show a decrease. This gain of 7,000 acres in California was nearly equivalent to the total net gain in all commercial cantaloupe states.

Prices Open Higher

Prices for this season's Imperial Valley crop opened higher than in 1919. Sales to jobbers started at \$12 to \$15 for standard crates of 45's early in June, compared with \$6.50 and \$15 last year, but declined to a range of \$4.50 to \$6 by the middle of the month, the markets becoming generally firm at about that range. Sales at California shipping points began at \$2.80 to \$3.75, f. o. b., cash track, declining to \$2 and \$2.25, only to recover by the middle of the month to \$2.50 and \$2.75, with a strong market tone and growers reported holding for higher prices.

In 1919 California standard crates of 45's opened in producing sections at \$2.25 to \$3.50 early in June, declining by the middle of the month to \$1.50 to \$1.90, but afterwards showing a tendency to recover in part. Much of the crop was shipped unsold. The 1918 opening range was \$2.35 to \$3 and the low price reached for stock from the Turlock section late in August was 70 to 80 cents, wagonloads, trackside.

This circular opens with: "Let it be repeated that the present anti-Japanese agitation, like the anti-Chinese movement of years ago, has the same psychology as the Russian anti-Jewish pogrom, which always starts with the lie that Jews have murdered Christian children to use their blood in the rites of the synagogue."

We think Colonel Irish is going rather farther than his warmest Japanese supporter would ask in endeavoring to secure a truly patriotic settlement of this vexed question.

In 1917 the early price was \$1.25 to \$1.90 and the lowest figures were 60 cents to \$1.35, wagons, track side, September.

In connection with prices in 1919, it is interesting to note certain data compiled by the local field agent of the bureau of markets. Last season the production cost was estimated to be \$1.18 per crate on the average. The freight charge to Chicago was \$1.26 per hundred pounds and to New York \$1.56. Icing charges vary from \$2.50 to \$3.12 per hundred pounds. On the basis of these figures a jobbing price of \$3.40 per crate in New York and \$3.05 in Chicago would show a profit of ten cents per crate to the grower. The jobbing prices, however, exceeded these figures in most markets except in late June. Inferior grades sold for much less.

Gains in Carload Movement

Carlot shipments, like acreage, have shown a pronounced upward trend during recent years. In 1919 they reached the total of 21,954, an increase of approximately one-third over 1918, and of fully one-fourth over the average of 15,625 cars for the preceding five seasons. But gains in shipments were more irregular than gains in acreage because of unfavorable crop seasons or marketing conditions. Thus in 1917, with an acreage almost equal that of 1919, carlot shipments were only 12,627, compared with 21,954 in 1919.

Local reports indicate that a late, cold growing season in the Eastern states makes conditions seem somewhat unfavorable. In Georgia the crop was on June 1 reported officially as being 72 per cent of normal as compared with a 10-year average of 79 per cent. In Stanislaus and Merced Counties, California, from which cantaloupes enter the market after the crop of the Imperial Valley, the season is reported about ten days late, but the plants bloomed well and are in good condition.

UNIVERSITY TRAINED MEN ARE IN DEMAND

That the demand for men well trained in agriculture is greater than the supply is again illustrated by the experience of the department of horticulture of the University of Missouri during the month of May. During that one month it was asked to suggest men for professional positions in horticulture whose total yearly salaries would aggregate \$25,000; and this was in addition to a number of requests for men trained for practical positions. Not a man was available for a single one of these openings. Of course many of the positions demanded men with not only university training, but with more or less experience after graduation; but the demand, nevertheless, was for university-trained men. Temporarily industry may offer those of college age attractive wages, but every high school graduate should have brought to his attention the fact that further preparation in college or university still pays.

THE UNSIGHTLY INSANITARY MANURE PILE

The uncovered manure pile is a grave menace to the health of all who live within its influence, due principally to the well established fact that the common housefly deposits its eggs, feeds and reproduces its countless millions within the artificial incubator created by the unprotected open pile. It should be understood in this connection that insect life, notably flies and certain beetles, are attracted to the open manure pile, first through the odor, and second instinctively through the fact that the presence of heat will hatch their eggs and foster their developing young.

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Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Government Stakes Moved

Some years ago I bought a ranch but did not live upon it for five years. When I moved there I found my neighbor had moved the government station stake about 350 feet over upon my land, claiming that he had a surveyor who found the government survey to be in error to that extent. How would you recommend taking the matter up?—Subscriber, Vista.

If you desire to have the boundaries of your land judicially ascertained it would doubtless be necessary for you to bring an action against your neighbor for ejectment from the land which he claims. In view of the circumstances he probably has paid taxes only upon that particular government subdivision which he claims, so that it would hardly appear that any adverse possession would enter into the matter. Your absence from the land would probably negative any idea of acquiescence in his action, but it would be well to take such action promptly, as otherwise he may acquire a definite right.

Eucalyptus Near Line

Can anything be done about a eucalyptus tree that has been planted two feet from the lot line and is injurious to our trees?—Subscriber, Burbank.

Upon showing the actual damage caused by the roots projecting into the soil of your land, you can bring an action to enjoin the owner of the tree from permitting its roots to extend into your land. This will, of course, from a practical standpoint necessitate his taking out the tree. You can, of course, dig a trench along the line of your property and cut off the roots projecting into your land without the necessity of any action.

Trespassing Stock

What can I do when a Durham bull of my neighbor insists on going through a five-wire fence at his pleasure? He comes into my pasture and does considerable damage.—Subscriber, Valley Springs.

See answer to "Cows Break Through Fence," Page 10, last week's Cultivator.

To Recover Title

Father bought a ranch several years ago. While in poor health he deeded it to his wife. The wife has now deeded it to a daughter. If any of the deeds are not recorded, can father do anything to hold the property either by homestead or other means? Does one actually have to reside on property in order to homestead it?—Subscriber, Sebastopol.

If the deed from the father to the wife is not recorded, then the father could doubtless deed the land to someone else, and if that deed was then first recorded it would convey title to the party mentioned therein. If the deed from the wife to the daughter is not recorded and the father is residing upon the property, he could doubtless file a declaration of homestead. In order to make this valid it is necessary that the person making the homestead reside upon the premises at the time homestead is made and claim the premises as a homestead. Sometimes the duration of the residence has been very short. It might be that other circumstances would enable the father to hold the property in some other way, but in such case it would be well for you to take the matter up with an attorney in your locality.

Joint Homestead

Prior to marriage I bought desert land. Since then, by the efforts of my wife and myself, this land has been improved so that it is now very valuable. I wish in case of my death to leave all to my wife. What steps must I take to carry this out? There are no children. Will a will be sufficient?—Subscriber, Holtville.

As to the land itself, if you and your wife execute a joint declaration of homestead, it would have the effect of conveying the real property to your wife upon your death, or in case of her death, then to you. This would not carry personal property upon the place, however; therefore, it would be best for you to also make a will in her favor. By taking both steps you would reduce the cost of administration of the estate. If the will alone is made the whole property would be subject to administration, while under the method stated, the real property would be subject only to a comparatively inexpensive procedure to declare of record the fact of the death of one of the parties.

Veterinary

Garget

Can you tell me what to do for garget in cow's bag? I have a valuable Holstein which has just freshened and she has garget in one quarter of her bag.—Subscriber, Buena Park.

Garget is often found in the udders of cows immediately after they freshen. In these cases it is usually due to a feverish condition of the udder caused by swelling and caking at the time of freshening. This can be successfully removed by applications of hot and cold cloths intermittently. Care should be taken not to get the cloths hot enough to burn the skin. This treatment should be given twice a day until the trouble has disappeared. In connection with this treatment, the udder should be massaged gently. A lubricant of some sort must be used with this treatment to prevent chafing of the skin. Sweet oil with a very small amount of turpentine is very good. Garget may also be caused by a specific organism which may be transmitted from one cow to another. The above treatment may also sometimes eliminate difficulty of this kind. If garget persists it would be well to consult a veterinarian who would no doubt be able to suggest a remedy for that particular case.—G. E. G.

Cow's Eye Affected

I have a cow that has one eye maturing away. Some think it is a rye beard. It looks as if proud flesh was eating it out. She rubs it some. It will water awhile and then it will get all over matter or pus and get dry and hard. The lids are a trifle swollen and where it is raw I can see a raised place like a small boil, but it does not open or look as if it would, but seems to be painful.—Subscriber, Dorris.

The action you mention is a little peculiar. Perhaps a rye, or barley beard may be in the eye as you suggest. It would be well for you to examine the eye as carefully as possible, in an attempt to discover some such trouble. If found, of course, it should be removed. This can best be done by the use of a pair of small forceps. In case nothing can be found I would suggest that you treat the eye with a five per cent solution of Argyrol. This can be dropped in the eye with a medicine dropper. See to it that the Argyrol is gotten into all parts of the eye and well under the lid. Drop this in twice a day. If the Argyrol does not get results you may substitute an Argyrol treatment about

every other day with a weak solution of iodine. You should, however, only get the iodine on the exterior parts of the eyelid, and not in against the eye. The safest way to apply this would be with a small brush. After the eye begins to improve you can limit your treatments to one application a day, or later on, even three times a week. The eye may also be washed out with boracic acid. This can be done quite often and in connection with the Argyrol treatment with good results.—G. E. G.

The Poplar farm bureau held a successful hog sale on June 25, the top car selling at \$15.

BREEDING DATE BOOK—FREE

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.

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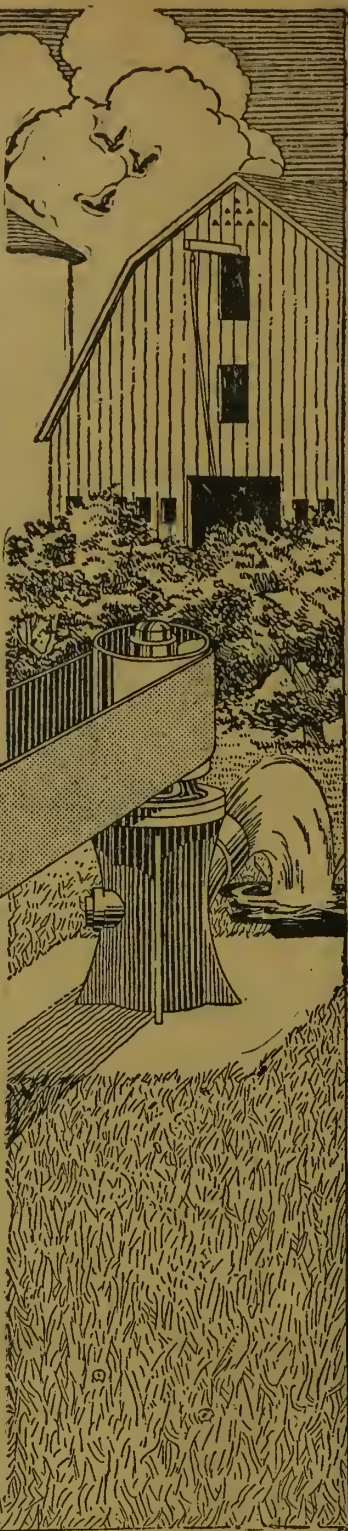
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The Beginning of Cotton Growing in Arizona

By D. W. Working

Cotton growers of the Imperial Valley have been visiting cotton plantings in the Salt River Valley of Arizona. On June 24 and 25 they were shown over the Salt River Valley experiment farm and the Mesa experiment farm by Director D. W. Working of the Arizona college of agriculture. Dean Working writes to the Cultivator: "A good many people are not familiar with the fact that the first work with Egyptian cotton was done by the Arizona experiment station at that time under the supervision of my predecessor, Dr. R. H. Forbes." Following is text of Dean Working's address to the cotton growers at the Mesa farm:



HILE we are trying to realize the bigness of the Egyptian cotton industry in this valley it is interesting to consider its beginning 19 years ago. The twelfth annual report of the University of Arizona agricultural experiment station, giving account of work done during the year ended June 30, 1901, contains the following significant statement:

"During the present season several varieties of Egyptian cotton are being grown, varieties that are being grown in Egypt by irrigation and that are reputed to produce high grade cotton. At the end of the year (July 1) the crop is in excellent condition and gives promise of a good yield."

This seems to be the first reference in our publications to Egyptian cotton. As a matter of record, let it be said that the words just quoted were written by A. J. McClatchie, at that time agriculturist and horticulturist of the station. Let it be said also that the cotton was grown in this valley on the old farm on the north side.

The next reference to the new crop is found in Bulletin 41 which deals with irrigation at the station farm for the years 1898-1901, inclusive. This bulletin reports that Egyptian cotton was planted on March 30, 1901, after seven-tenths of a foot of water had been applied to the ground. The first irrigation after planting was on April 11, and the last on October 7. The cotton was irrigated 13 times and the depth of water applied during the growth of the crop was 4.3 feet. The cotton was picked December 14, the yield being at the rate of 400 pounds per acre. It is illuminating to learn that the crop was worth \$68 per acre; that it cost \$48 per acre to produce and market it, leaving a net value per acre of \$20. The net return per foot of water applied was \$4.05.

The thirteenth annual report of the agricultural experiment station contained the following statements by Professor McClatchie under the heading "Egyptian Cotton":

"The experiments with Egyptian cotton begun during the spring of 1901 are being continued, seed having been supplied by the United States department of agriculture for this purpose. The questions to be settled are what variety or varieties are best suited to our conditions, what is the best time to plant in our climate, at what distances apart should it be planted in our soils, how should it be irrigated, and what is the most economical method of harvesting it.

"The crop grown during 1901 was planted and irrigated according to directions given by Professor Foaden in Bulletin No. 42 of the office of experiment stations. The cotton was harvested during November, and, through the kindness of Director Stubbs, ginned at Audobon Park by the Louisiana experiment station roller gin. The yield per acre was as follows: Abbassi, seed cotton 1,580 pounds, lint 460 pounds; Mit-afi, seed cotton 1,150 pounds, lint 275 pounds; Jannovich, seed cotton 500 pounds.

"During the present year two varieties, Abbassi and Mit-afi, are being grown. Different plots of each variety were planted at different dates and at different distances apart. Other plots are being given different amounts of water, the remaining conditions being the same. Judging by the results thus far, the Abbassi would be the most profitable one to grow here, the time of planting should be about the middle of March, and the crop should receive a moderate amount of water with plenty of cultivation."

Other comments were made in later publications. Bulletin 48, dated June

10, 1904, states that "Most varieties of cotton can be successfully grown in this region * * *. Formerly the Pima Indians grew one of the short staple forms for clothing, and Egyptian cotton has been quite thoroughly tested at the station farm. If supplied with plenty of water it grows thriftily throughout the summer and produces a good crop of excellent cotton."

Bulletin No. 60, made up of a collection of timely hints for farmers, contains a discussion of cotton growing in Arizona by R. W. Clothier. This leaflet, written in 1908, refers to the experiments of Professor McClatchie in 1901 and 1902 and to experiments carried on at Yuma "since 1902" by the United States department of agriculture. It contains the following suggestive statements:

"The more recent experiments point strongly towards Egyptian cotton as best adapted to Arizona conditions. The climate of the Salt River and Colorado River Valleys is similar to that of Egypt. Both regions are irrigated and are distinguished by the long growing season so essential to the proper maturing of Egyptian varieties of cotton. Experimental cultures grown by Professor McClatchie in 1901, by methods resembling those in use in Egypt, gave results as follows:

"Abbassi, 1,580 pounds seed cotton per acre yielding 460 pounds lint; Mit-afi, 1,150 pounds seed cotton, yielding 275 pounds lint; Jannovich, 500 pounds seed cotton which was not ginned. Samples of Abbassi and Mit-afi were sent to the Lowell Textile School to be tested for quality and compared in this respect with imported Egyptian cotton. Arizona grown Mit-afi fiber was found to be 14 per cent stronger than Egyptian grown, while the waste was 15 per cent less. The maximum yield obtained on the poor soils of the station farm, in a heavily irrigated plot, was at the rate of 2,200 pounds of Mit-afi seed cotton per acre.

"Investigations carried on at Yuma since 1902 by the bureau of plant industry, U. S. D. A., confirm these first results as to the high quality of Arizona grown Egyptian cotton and further show that the length of the fiber has increased with acclimatization; likewise the yield."

NO CHANGES IN WHEAT GRADES

That no change should be made in the present federal standards for wheat is the decision of Secretary of Agriculture Meredith following hearings recently held in Washington and Chicago. The hearings were the result of representations made to the secretary that dissatisfaction existed in the Central Northwest with the present federal wheat grades for Hard Red Spring and Durum wheats. At the first hearing in Washington some producers from certain sections urged that changes be made to take effect at the beginning of the coming crop year, involving a distinct lowering of the standards for Hard Spring and Durum wheats. At this first hearing a delegation from the Central Northwest presented its views; at the second hearing in Washington a delegation of grain dealers and representatives of grain trade organizations from Texas, Oklahoma and Illinois were heard; and at the third hearing, held at Chicago, representatives of producers, the grain trade and millers discussed the proposed changes. All interests concerned in production, marketing and handling were heard on the proposals.

Lowering Standards Would Reduce Farmers' Returns

"The request made by the Central Northwest delegation for a general lowering of the present standards for Hard Red Spring wheat and Durum wheat," says the secretary in announcing his decision, "was made apparently on the theory that, under the standards they proposed, the producer would receive more money for his wheat. The arguments made in support of this theory were not convincing and were not supported by evidence. On the other hand, the testimony seemed to prove that, under

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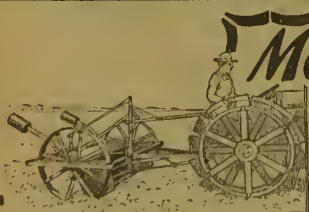
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free and open competitive marketing conditions, the lowering of the present standards would tend to reduce the return to the farmer. The department's studies of grain marketing support the latter view."

BEAN SITUATION DISCUSSED

That relief for bean growers is in sight because of greatly reduced acreage and restoration of normal competition was the opinion of the speakers at the monthly luncheon of the agricultural bureau of the Sacramento chamber of commerce. J. V. Mendenhall told of the activities of the Bean Growers Association in attempts to secure passage of a protective tariff on beans which would enable the California growers to compete successfully with the cheap labor conditions in the Orient. Developments to date indicate a favorable outcome for the bill, Mendenhall stated. The conditions which have obtained in the bean market during the past few years have been due to a variety of causes, such as the cutting off of normal competition by government price fixing during the war period; overproduction; competition with cheap beans from the Orient; a much reduced demand on account of increased wages and consequent higher standards of living in the coal mining sections of the East; and the aversion of returned soldiers to this article of food. The acreage for 1920 in California planted to beans, except Limas, will probably be not more than 40 per cent of the 1919 acreage, and in this reduced production, accompanied by the restoration of normal marketing conditions and the elimination of Oriental competition by a protective tariff, is seen the salvation of the California bean industry.

MANY FARMERS GROWING SORGHUM

A marked increase in the production of sorghum syrup is indicated by reports received by the United States department of agriculture, which has been engaged in a special campaign to induce greater production of this crop because of the keen demand for sugar substitutes. At the beginning of the world war the annual yield of sorghum syrup in the United States was approximately 13,000,000 gallons. This has increased steadily until for the past year it was approximately 30,000,000 gallons. The average yield of syrup per acre has been about 100 gallons, but the fact that this figure can be increased is indicated by the department's experiments, in which more than 400 gallons per acre have been produced in some localities.

In urging increased plantings to sorghum the department's experts point out that despite the increasing yields the demand is still greater than the supply, as shown by the price for syrup, which has ranged from 90 cents to \$1.50 per gallon, and in a few cases even higher.

There are abundant opportunities for increasing the sorghum production, the experts say, since this crop can be grown in every state in the Union with the possible exception of Maine. In the Northern states it is necessary to plant early maturing varieties of sorghum. Early Amber and Folgers are among the varieties recommended by the department, which is prepared to supply inquirers with full information regarding the cultivation of this profitable plant.

SHOULD KNOW MARKET CONDITIONS

In addition to knowing the grade and staple of his cotton the cotton farmer must be fully informed regarding market conditions and must have proper outlets for his cotton if he is to secure its full commercial worth, say cotton specialists of the bureau of markets.

Every farmer offering cotton for sale ought to know the course of the futures market on the particular day; the course of the spot market in the city or cities to which his own market is tributary; the course of the spot market in other cities that are comparable to his own, and other special conditions that may affect the value of his cotton.

The bureau of markets is supplying a part of this information through its price quotation service. The cotton belt is divided into five districts, with headquarters at Charlotte, Memphis,

New Orleans, Dallas and Atlanta, and from each of the four first named points a bulletin is issued on Monday of each week, giving disinterested and trustworthy information as to the course of prices and market conditions. As soon as available men can be secured, similar bulletins will be issued also from Atlanta. Any farmer requesting this service will receive free of charge the bulletins issued from the headquarters of the district in which he resides. As prices vary from day to day and from hour to hour, farmers may make arrangements to secure by telegraph any information contained in the bulletins.

DISEASE RUINS PHILIPPINE CORN

Uncle Sam's little brown nephews on the Island of Bohol, P. I., are in serious straits for food, the downy mildew having ruined their corn crop. W. H. Weston Jr. of the United States bureau of plant industry recently returned from a two year trip in the islands, where he studied the disease. He reports that the damage done in the southern islands of the group is particularly disastrous and that the natives are at times reduced to eating the pith of the burri palm, which constitutes an emergency ration when the other crops fail.

The islands produce an annual corn crop valued at \$8,820,000. Corn is the second most important crop in point of area planted; it is estimated to be about third in value. The islands do not produce enough of their principal foodstuff, rice, to supply their own uses, and the natives are forced to produce corn and to import rice from California and from Oriental countries. When the downy mildew, *sclerospora philippinensis*, finds crop conditions favorable the result is an acute situation in the food problem of the natives.

The bureau of plant industry has made a thorough study of the disease, and its life history is known. Preventive methods have been developed which have been successful in con-

trolling the disease, even where conditions were worst. There is no reason known why the mildew would not flourish in the southern part of the corn belt in this country if it once obtained a foothold. Every resource of the department of agriculture is directed toward the prevention of such an invasion, however, and the Philippine corn is under a quarantine imposed by the federal horticultural board.

PUBLICITY AN AID IN LAW ENFORCEMENT

By R. H. Taylor

We are impressed with the vital importance of our California laws, not only those that aim to promote the present welfare of the state, but as well those that safeguard future agriculture against the hour of need. The laws as they exist today on our statute books were enacted with the full and complete understanding that they were to be enforced. To secure the adequate enforcement of any given law requires, as a primal essential, the support to be had only by activating favorable public sentiment, and such sentiment may be promoted largely through an understandable interpretation of the needs, purposes, aims and advantages of the laws as written.

There are a number of most excellent laws having direct bearing upon the future prosperity of the state by protecting its chief industry, agriculture. But to secure the maximum benefits from these well intentioned laws it is necessary that the individual farmer analyze these measures and satisfy himself as to the good to be had through their careful and thorough administration at the present time.

The state should receive from every farmer a hearty compliance with the laws of the state, even though at times they may appear to work local hardships. Although it may affect an individual adversely at times, it may be a distinct advantage to him at the

next turn, and in the aggregate the greatest good to the greatest number will ultimately work benefit to all alike.

This applies particularly to the agricultural and horticultural laws of California. The state and county officials charged with the enforcement of these laws are anxious for the opportunity to explain the purposes and execution of the laws to everyone who will listen. When in doubt as to the full meaning and intent of a given regulation do not hesitate to call on your county horticultural commissioner, district veterinarian, dairy inspector or on any of the officials in the state department of agriculture, and you will be surprised how glad they are to help in an explanation of the several laws and their benefits to all concerned.

These laws were enacted to protect the California farmer, dairyman, fruit grower and cattle raiser, and with a harmonious understanding between the state and county officers and the individual it follows that lasting good will result to everyone.

WATER HYACINTH IN CALIFORNIA

Ethelbert Johnson of the California department of agriculture has been investigating the water hyacinth situation in the state and reports:

"An interesting sequel to an article in the March Monthly Bulletin was the information from a number of reliable sources that the water hyacinth already was established in California. Investigation by the California department of agriculture, with the assistance of Commissioner Fred P. Roulard, disclosed an infestation of the pest in the Centerville bottoms in Fresno County, located in such a situation that in a season of floods it could be readily carried into the Kings River.

"The question arises, How did it get there? The only plausible theory is that it was either deliberately plant-



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JUNE ACRES STOCK FARM

V. F. Dolcini, Davis, Cal.

Live Stock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
September 23, Allana Farms, Dixon.
Shorthorns
August 11, Butte City Ranch.
Duroc-Jerseys
July 21, Elmer Lamb, Ceres.
July 29, Conejo Ranch, Newbury Park.
July 28, Winsor Ranch at Los Angeles.
Hampshires
July 30, Conejo Ranch, Newbury Park.
Poland Chinas
August 21, Merced County Poland China Breeders' Association, Merced.
September 27, Hugh C. Shinn, A. J. Elliott and Alex D. McCarty, Tulare.
October 6, Kings Co. Poland China Breeders Assoc., Hanford.
Shropshire Sheep
August 11, Butte City Ranch.
Berkshires
August 11, Butte City Ranch.

The Fairbanks Ranch Hampshires at Redlands carry the limit in bone, stretch, feeding and producing quality. A. E. Harvey has laid down the law from the very outset that the herd must combine and maintain these vital points toward the making of economical pork producers. And it is the blood of the grand champions that is doing the work.

Visitors at Ortega Underhill Rancho, Santa Barbara, are delighted to see a reserve string of young Hampshire sows that are to feature a bred sow sale next February. Never were there finer litters at the ranch than now. They are bred in the purple and speak for themselves. Manager Tom Dinsmore takes pleasure in showing you around.

Gordon & Langdon's Llano Vista Ranch at Perris is headquarters for the best in Hampshires at all times. This herd has a splendid producing record, one year after another, and this year is no exception. They have the "belted beauties" in numbers to accommodate all comers, and these litters carry the best blood of the breed. You'll like the Langdon "Hamps."

F. B. Lewis, Pomona, has the foundation for a good business herd of Durocs. The boar in service is the two year old Pathfinder Imperial 274445, a grandson of old Pathfinder. Other blood lines in herd are Ohio Chief, Rivera Col. and California Great Wonder. Mr. Lewis has spent a couple of years at Davis and has the ambition and means to go to the front in the hog breeding game.

Russell Bros., home ranch at Triunfo, Ventura County, are leading breeders of Hereford cattle and Percheron horses in this state. They have extensive cattle interests in both Fresno and Monterey Counties, also in the vicinity of Owensmouth, Los Angeles County.

Fred Tice has charge of livestock interests at the noted Camarillo Ranch, Camarillo. This ranch acquired by purchase at the San Francisco livestock show last fall 30 head of registered Hereford cows. Since that date every cow has raised a calf. Some of the finest registered Belgian mares on the Coast are to be seen here. One of these tips the scale at 2,100 pounds. These mares are raising mules by an 1,150 pound mammoth jack from the noted Burrell Ranch at Hanford.

What are to be known as Tarzana Ranch Hampshires are now to be permanently located on the Burroughs Ranch on the Ventura Boulevard near Van Nuys. Mr. C. J. Gilbert has recently bought from the Conejo Ranch the great show sow Florene 2d, a daughter of The Young Senator. She won grand championship honors at the Los Angeles livestock show, also winning first prize in junior yearling class. The Tarzana people will likewise show a quartette of September gilts by Liberty, the noted son of The Harvester Again. To be shown with these gilts is the crack young boar by same sire and out of Maud, she by The Young Senator.

Geo. Waltmeyer at Conejo Ranch, Newbury Park, is busy these days lining things up for the big two day sale event, July 29 and 30. The sale is to

be held in the open under the shade of two mammoth oak trees, with seating capacity for the entire countryside. The big noonday barbecue lunch will be served across the road, with accommodations for all comers.

Alex D. McCarty, Modesto, recently purchased from W. A. Young, Lodi, the show sow, Black Beauty C, the 1919 reserve grand champion sow at Sacramento. He also purchased her spring litter and a yearling gilt out of the same sow. This purchase gives McCarty one of the strongest show herds in the state, especially in the sow classes. While McCarty had the grand champion sow last year, he has at least two sows this year that stand a better chance of winning than did last year's champion.

J. P. Walker, Visalia, is making plans for one of the greatest Duroc herds on the Coast. His intentions are to add a few of the best sows possible to obtain and is sparing neither time nor money to carry out his plans. He will not have much show stuff this year as he only expects to show the litter by Ace of Pathfinder and out of Orion Crimson Lady at the state fair.

A. J. Elliott, Tulare, has some of the largest pigs for their age in the state. Barring any bad luck, the man who beats Elliott will stand close to the head of the class at Sacramento this fall. The September litter by Hercules and a spring litter by Big Gerstdale Jones have unusual size and class for their age and would look good at any state fair in the country.

Hugh Shinn, Tulare, recently purchased a fall boar sired by Korver's Orange Wonder and out of a Goliath's Chief sow at the Korver Bros. sale at Alton, Iowa. This pig is an unusually well bred youngster and will be used to mate with daughters of "The Californian." He has sold three fall gilts by "The Californian" and bred to Hercules Jr. to a boys' pig club at Hollister.

Fred Gatewood, Fresno, is putting the finishing touches on Fresno Boy, the junior champion at the state fair last year. This boar will show in the senior yearling class and will be a hard boar to beat. He now stands about 40 inches tall and is very deep bodied.

Jack Borge of Dos Palos is fitting a very good bunch of Durocs for the state fair and expects to give the boys some little competition. His aged boar is California's Golden Model 3rd, a boar of excellent quality. Several of his get will also be shown.

Santa Anita Rancho, owned by Anita M. Baldwin, Santa Anita, has 33 registered Holstein cows and heifers on yearly test and some promising candidates for large records are being uncovered. All of these have been given seven day records as a starter, some of the recent ones including Anokia Gelsche Walker, a junior three year old daughter of Prince Gelsche Walker, 23.24 pounds butter in seven days; Anokia Beets Burke, a daughter of Merce Lad Korn-dyke Burke, 19.72 pounds butter in seven days as a junior two year old; Abbie Korndyke Segis, a mature daughter of Johanna McKinley Segis, 27.02 pounds butter in seven days; Alba Sadie Cornucopia Creeta, 28.84 pounds butter in seven days. This is the fifth seven day record for this great cow, her highest being over 36 pounds, and the five records averaging over 29 pounds. Sundrie Sunbeam Girl, the famous cow that dropped triplets on November 28, 1919, all of which are living and are strong, vigorous calves, is still milking over 80 pounds per day on yearly test and promises to make over 1,000 pounds butter this year. The \$41,000 bull, King Korndyke Pontiac Acme, purchased in the St. Paul National Sale for Santa Anita Rancho by Earl Sturgis, manager of the livestock department, reached the rancho in splendid condition and has already been placed in service.

One of the most important transactions in California Holstein circles was recently concluded with the in

corporation of Burr Farm, Los Angeles. In the new company the original owners, Messrs. Burr and Brown, have joined forces with Kenneth W. Abbott, formerly proprietor of Moorland Farm, Milpitas, who now owns a very substantial interest in the company. The Burr Farm herd is widely known as possibly the greatest collection of highly bred females of excellent type yet assembled on one farm in California in so short a time, and these females are headed by two bulls of outstanding merit, Sir Vee-man Korndyke Pontiac Korndyke, and the famous \$12,000 bull King Korndyke Pontiac 20th. A large number of excellent production records have already been made in this herd, and the policy will be to put every female on long time test as she freshens.

There was keen competition among owners of some of the greatest Holstein bulls in America for the next breeding of Tilly Alcartra. Her owners, A. W. Morris & Sons Corporation, Woodland, finally let their selection fall upon Sir Pietertje Ormsby Mercedes 43d, owned by Toyon Farm Association, San Francisco. As most everyone knows this bull is by Sir Pietertje Ormsby Mercedes and out of Aaggie Wayne Peep, the only cow in the world that has a greater five year butter production than Tilly Al-



Conejo Prince

Raised on Conejo Ranch, sired by Duke's Allen, dam Pine's Pride 4th.

cartra. Should the result of this mating be a bull, there will have been born a herd sire that has for his dam and sire's dam the two greatest long distance butter producers yet developed in any breed.

James J. Jeffries, Burbank, has a herd of registered Holsteins that won a great deal of favorable comment from the large number of breeders who visited the Jeffries ranch at the time of the recent C. W. Anderson sale. The herd is particularly impressive from the standpoint of good type, and the short and long time records now being made place the herd among the leaders in the state. The most sensational short time record lately made is that of Baron Annabel Lillib, with 38.28 pounds butter in seven days, which is the third largest seven day record ever made in California. One of the most pleasing records was recently made by a junior two year old daughter of Mr. Jeffries' famous herd sire King Segis Pontiac Jannek. This heifer made over 19 pounds butter in seven days, and at last report was milking right around 85 pounds per day and increasing. She is also a rare individual.

The daughters of King Pontiac Netherland Segis 3d, senior herd sire at Rosamaines Rancho, Stalder Bros., Riverside, are continuing at second freshenings the splendid records of production they made as two year olds. One of his junior three year old daughters now on test has 29.92 pounds butter to her credit for the first seven days and apparently has a good chance to cross the 30 pound mark.

The policy will be to put every female steins at Allana Farms, Dixon, will be sold at public auction on Thursday, September 23, with the possible exception of a few heifer calves. It was found necessary to hold this sale in order to dissolve the partnership existing between J. P. Phillips and his father, W. W. Phillips. About 40 head will be included in the sale, practically

every female with an official record and a number well along on yearly test, and all of breeding age in calf to a son of Sir Pietertje Ormsby Mercedes. The type, breeding and good health of this herd should prove attractive to prospective buyers. The sale will be managed by California Breeders Sales & Pedigree Co., Sacramento.

Rhoades & Rhoades announces for the owner, J. P. Struve, a sale of 70 head of Holsteins, all tuberculin tested, at the Struve Ranch near Watsonville Junction, for Saturday, July 17. This has been declared to be one of the finest offerings of dairy cattle. It is the closing out of the entire dairy business, and in addition to the fine young Holstein bull and the heavy producing cows there will be sold separators, gas engines and work horses.

BERYLWOOD REGISTERED DUROCS

The Berylwood Investment Co. at Hueneme, Ventura County, under the direction of J. W. Snodgrass as livestock superintendent, has launched an enterprise in the breeding of high class pure bred Holstein cattle and Duroc-Jersey swine that bids fair to take rank with the best of its kind in the state. The big new dairy barn is strictly up to date in its every equipment—white enamel walls, cork brick

floors, concrete floor in corral, litter carriers, and flyproof concrete manure pit. It also has a 250 ton capacity hay loft. There are sanitary hog barns and up to the minute poultry buildings. The living quarters for workmen are ideal, each man having a private room, with hot and cold water, large living room and shower bath. In this connection are introduced the Durocs. The boar at head of the herd is the big high backed senior yearling, Rancho's King's Col. Orion 286401. His blood lines trace direct to the best herds in Nebraska, Iowa and Ohio. The spring litters represent the get of this boar, and they are doing him credit as a sire of the up to date type, and strong litters at that. However, there are some very excellent boars and gilts of last fall's litters got by such noted sires as Great Model, Golden Model and Ireland's Joe Orion. At seven months these boars are scarcely to be excelled as herd boar prospects. They have the size, bone and stretch to meet the popular demand for economic pork producers. The brood sows at the ranch represent such sires as P. & L's Defender, Grand Golden Model and Cherry's Volunteer 2d. Four of the leading sows are Grand Lass 745082, Cherry Lady 745874, Defender Maid 738400 and Defender's Model Belle 732778.

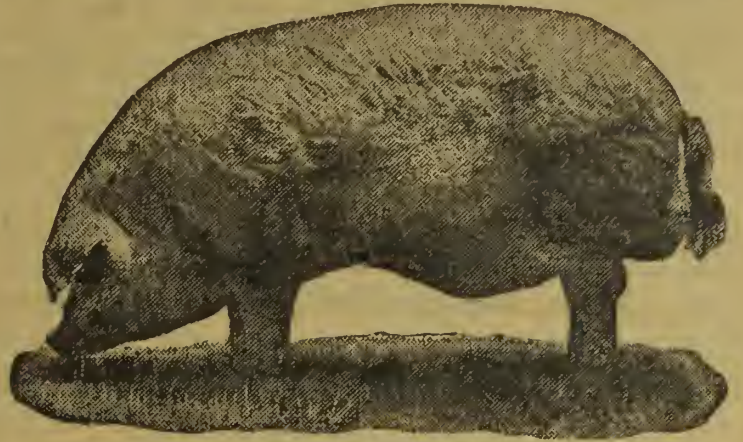
COTTON IN EGYPT

In both Upper and Lower Egypt unfavorable weather delayed both the preparation of the land for cotton and the actual sowing, but on the whole conditions were not entirely unfavorable and the sowing is now practically completed.

In Lower Egypt cotton has been sown on a larger scale than last year, possibly exceeding the area by from 15 per cent to 20 per cent.

The increase seems to be confined to sakellaridis, although a new variety has been introduced, known as pilion. During the past two years the percentage of sakellaridis has been just under 73 per cent of the entire area planted, and practically all of the sakellaridis is grown in Lower Egypt.

Duroc-Jersey Bred Sow Sale



Winsor's Giant Orion

We sell a more uniform bunch of big type sows and gilts in this sale than will be found in any offering in the world with the exception of a very few of the top herds of the cornbelt. These sows are by Great Orion Sensation, the world's grand champion, Orion Sensation, his litter mate, Pathfinder, Great Model and Orion Fancy King.

Winsor's Giant Orion

The greatest proven big type sire in California..

The largest Duroc on the coast.

The largest O. C. K. boar in the world.

A son of the 1916 world's grand champion.

Great Sensation 3rd

The highest priced boar ever sold by a western breeder.

A son of Great Sensation and Uneeda Lady.

A half brother of Great Orion Sensation.

A sire of extreme size and stretch.

Sale Held at Los Angeles, July 28

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Morris C. Allen

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The World's Record Boar
The Largest Jr. Yearling
in the World

The Best Type Boar of the Breed
Cost \$15000.00

A World's Record of Jr. Yearling

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Alex. Wilson, Supt., Guasti, Cal.



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E. N. WHITTEMORE, MGR.

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at head of our great herd of brood sows.

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Grand Champion Boar

at Los Angeles 1919

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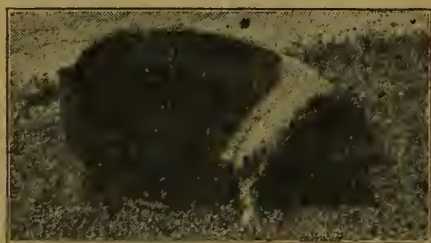
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Tulare, California

What is Pasteurization?

By J. G. Jackley



PASTEURIZATION refers to a method of partial sterilization; and sterilization, as is well known, means complete destruction of all living organisms.

Historically, there are some very interesting incidents connected with the discovery of the procedure known as "pasteurization." A review of these developments will assist in an understanding of the principle and idea involved. The term "pasteurization" is inseparably linked and related to the theory of spontaneous generation and the science of bacteriology.

The theory of spontaneous generation was thoroughly believed in during the period of the dark ages and up until the middle of the last century. This theory was that all decomposition and decay in nature was due to the presence in the decaying bodies before the decay began of some destructive element which caused disintegration when the life spark departed. For example, when an animal or tree died decay began because there was present in the flesh or in the wood "something" which generated decay. It was well known that maggots developed when meat or other animal products were exposed for a short period of time. These maggots were said to have generated spontaneously in the meat. Early in the last century, however, scientific investigators found that by placing meat in a dish and covering it with a piece of cloth no maggots developed; the cloth screen of course prevented flies from coming in contact with the meat. This was a hard blow for the spontaneous generation theorists, but still they pointed to the fact that, while that same meat did not develop maggots, putrefaction did occur, causing offensive odors and finally complete disintegration of the product.

Scientific men, however, were not so easily satisfied. The high power microscope was being rapidly perfected, and these investigators found upon examining the fluid portion of decomposing meat that it was literally swarming with little rod shaped organisms that were moving. While these organisms could not be seen by the naked eye it was fair to assume that they were associated with this decomposition.

Finally in 1860 the chemist Pasteur placed bits of meat in a glass flask, inserted a piece of cotton in the neck of the flask and steamed the outfit. He found that this meat did not develop maggots, nor did it decompose. The steaming process had killed all the small microscopic organisms present; the cotton stopper in the neck of the flask prevented additional ones getting in from the outside air. Consequently it remained sterile. This experiment of Pasteur's decisively overthrew the spontaneous generation theory and marked the real beginning of the science of bacteriology. Many things have been learned about the small rod shaped organisms now called bacteria. It was found that they are constantly floating in the air in a more or less dried condition awaiting an opportunity to drop on to some nutritious food containing moisture and protein; that they multiply very rapidly—one organism in 24 hours under favorable conditions developing into millions; and that there are as many different species of bacteria as there are plants in nature.

There is still much scepticism and confusion regarding the relationship of pasteurization and bacteriology. In fact, there are people even today who refuse to admit that there are bacteria. Milk may be swarming with bacteria or water may be alive with these organisms and no one would suspect from the appearance of either that they were present. The story is told of a certain mountaineer in Tennessee who, when told about a giraffe with his long neck and when shown a picture of the aforesaid animal, insisted that it could not be possible. Finally he was taken to a zoological garden and shown a real giraffe, and he remarked, "Well, there ain't no sich animal, anyway." So, too, there are people today who, when told about bacteria, insist that "there ain't no sich things, anyway."

Bacteria are now classified as beneficial and harmful. The harmful bacteria are called disease producing or pathogenic. The popular belief is that all bacteria (germs) are harmful, which is a great mistake, since there are a hundred beneficial types to one harmful type. It would be as fair to say that because there are certain poisonous plants which cause poisoning and death all plants are poisonous. Generally speaking, as long as the animal or plant body is in a healthy, vigorous state, due to proper nutrition and favorable surroundings, there is little fear of bacterial attack. If, however, the vitality, resistance as it is generally called, of the plant or animal is reduced through unfavorable surroundings, such as excessively hot weather or cold, damp weather, insufficient or improper food, lack of water, and many other factors, they are then more likely to become the prey of bacterial parasites.

In the soil of the garden which is rich in humus there are vast numbers of bacteria that convert organic materials into nitrates, the basic food substance of practically all plants. In the rot nodules of leguminous plants, alfalfa, for example, there are swarms of bacteria that store up in these nodules nitrogen food for that particular plant, and when the plant finally dies and the root decays the soil is greatly enriched through the presence of this stored up material. It is because of this fact that alfalfa is said to rejuvenate or enrich the soil. If the specific nitrogen bacteria are lacking in any particular soil alfalfa will not grow. It is for this reason that new soil upon which alfalfa has never been grown must be inoculated with cultures in order to get the crop started.

The realm of agriculture is assisted on all sides by bacteria; they are made use of daily in the industries, but man is sometimes wholly unconscious of the fact that he is being aided by bacterial activities. In the making of cider vinegar a specific bacterium converts the alcohol of the cider to acetic acid. The fermentation process in sourknot and ensilage is brought about by a particular group of bacteria producing acid from the plant sugars. In the ripening of cream for the manufacture of butter a starter is used which consists of a pure culture of lactic acid bacteria. This organism, when growing in the cream, produces that delicate flavor and aroma which is peculiar to butter only. Oleomargarine manufacturers are now making use of this same organism in attempting to incorporate into their product the butter flavor by mixing a certain amount of milk, adding the bacterial starter, and permitting the mixture to ripen. Such oleomargarine is decidedly improved, losing much of the flat, grease like flavor of the unripened oleo.

Professor Pasteur of the famous Institute of Paris was one of the most active investigators in the subject of bacteriology in the years gone by. He found that while bacteria grew rapidly at room temperature, and especially at body temperature, most of them could be destroyed by a temperature of 140 to 150 degrees Fahrenheit, that is, all those bacteria that produce no spores (and most of the disease producing types of bacteria do not produce spores). He conceived the idea that this little secret might be used in safeguarding the milk supply of cities and towns. By heating milk to 140 or 145 degrees Fahrenheit for 20 to 30 minutes most of the bacteria are killed, including any disease producing types. This temperature does not affect the digestibility of the milk itself or impart a cooked flavor, as would boiling at 212 degrees Fahrenheit. Pasteur's idea was soon taken up all over the world, and in order to give the process which he devised a name it was called "pasteurization."

The question naturally arises — are there bacteria in the cow's udder? In the perfectly healthy cow there are none. Where then do the bacteria come from that are in milk? There are four chief sources: First, some fall in from the air, but these are of no great importance; second, a large number often get into milk because the milk pails and cans were only

rinsed after the last milking (not sterilized) and enough milk remained in the seams to be seething with bacteria by the next milking; third, small particles of fecal matter often are permitted to fall into the milk pail by the careless milker—such material is swarming with bacteria, a piece the size of a pea will carry millions of organisms; fourth, cows with diseased udders, mastitis or other specific disease, may give off living virulent bacteria that by all means should be excluded.

Proper pasteurization will destroy 95 to 98 per cent of the bacteria from the above sources, but that pasteurization must be done properly. If the milk is heated to too high a temperature it acquires a cooked taste and becomes less digestible. On the other hand, if it is not heated to 140 degrees Fahrenheit the bacteria are not killed and the consumer has a false sense of security. A high bacterial count indicates carelessness and dirt; it does not necessarily mean that disease-producing organisms are present, but often does.

Originally pasteurization was by the holding method only, the milk or other material to be pasteurized was placed in a receptacle, heated to the proper temperature and held there for 20 minutes. Commercial modifications of the idea have resulted in several methods:

First, there is what is known as the flash method where the milk enters a series of tubes that are surrounded by water of the proper temperature. The milk continues to pass from one end of the tube to the other in a continual stream. The temperature is run up to 175 degrees thereby shortening the holding period to about one minute. This method has the advantage of saving time for the milk plant but it interferes with the cream line when used for market milk.

Second, the holding method as practiced today usually consists in placing the milk in a large vat. Through the center of the vat is a large revolving coil which is heated by hot water. The agitation of the revolving coil mixes the milk and brings about a uniform temperature. The milk is held in the vat for 20 minutes. This method is perhaps the most generally used and is considered very satisfactory.

Third, there is the so-called package pasteurizing method where the milk is placed in the bottle, capped and then placed in a vat of water at the proper temperature and held. This method is very much more expensive due to the fact that it takes a great deal more space, more heat and is very much slower. It is considered, however, the ideal method.

Many people on the ranch pasteurize the milk which is to be fed to pigs and calves when it is known that the dairy herd has some tuberculous individuals. Where a steam boiler is available steam from the boiler is allowed to bubble into a can of milk by means of a hose. The milk is agitated by a paddle and then the temperature is determined by an ordinary household thermometer. When it is in the neighborhood of 150 degrees the steam is cut down to only a few bubbles a minute and thus the temperature can easily be maintained for the proper length of time.

The state dairy laws of California require that all milk or milk products be either pasteurized or from tuberculin tested cows. The law then goes on to outline how pasteurization shall be done. In addition to specifying a temperature of at least 140 degrees Fahrenheit for 25 minutes, it is prescribed that all pasteurization machines be equipped with self recording thermometers. Such a thermometer is a delicate piece of apparatus and expensive. However, authorities contend that since the proper temperature and the interval at which that temperature is maintained are so essential to proper pasteurization, the self-recording thermometer which automatically keeps a record of these facts is absolutely essential from the standpoint of inspection. Finally, the law requires that milk pasteurized for the retail trade be immediately cooled to a temperature of at least 50 degrees Fahrenheit. To cool a large volume of milk to this temperature a refrigerating plant is essential.

A pasteurizing outfit to handle the milk from 100 cows would cost in the neighborhood of 2,500. Thus it can easily be seen that the expense would make it prohibitive and impractical for

small dairymen. The cost of pasteurizing 100 pounds of milk is generally considered in the neighborhood of 20 to 25 cents, and where help is scarce this may soon become even greater. Some dairymen in this state have installed pasteurizing outfits when a large number of cows were known to be tuberculous in order to avoid a tuberculin test. Many of these pasteurizing plants on individual dairies have been abandoned after a year or two of trial and the owners have applied for a tuberculin test of their herds. Without doubt a clean herd of cows and selling the milk raw is more desirable and profitable in the long run.

THE LOUSY HOG

Did you ever notice a hog at this season of the year rubbing its shoulders against every fence post and wagon wheel in the lot? This may be a favorite pastime with some hogs but it is a necessity with others. It not infrequently indicates the presence of lice, the blood sucking parasite so common among hogs. During the warm sunny days these pests perform their acrobatic stunts on bristles about the hog's ears, neck, flanks and on the inside of the legs.

Just because this sort of louse is a small one do not think for a minute it causes little damage or annoyance. Hog raisers claim the loss of hundreds of dollars from this pest; first, through annoyance, and in the second place from unthriftiness of the animal.

When it is not possible to find a louse, hunt for the yellow eggs which are usually deposited on the bristles back of the neck. Treatment is quite simple. When it is not possible to resort to dipping, waste oils from tractors and automobiles have been found a cheap and effective remedy. There are many makes of oilers on the market. The chief object is to get oil on the louse or egg, since oil is destructive to both. Dip preparations do not always destroy the vitality of the egg.

An effective homemade oiler is made by wrapping a burlap sack about a post in the hog lot and keeping it well oiled. This serves as a scratcher and automatic oiler, or hogs may be crowded into close quarters and sprayed with oil. Or again, the kerosene emulsion, which is very effective as a louse destroyer, may be applied. Any efficient method will do so long as it is repeated often enough to kill the lice that hatch from time to time. —S. O. T.

MAKING PROFITS FROM SHEEP

Dr. A. C. Rosenberger of the state department of agriculture gives the following interesting information on profitable methods in the sheep business:

"Well bred stock and plenty of good feed pay in the sheep business. This year one of the sheep owners in San Joaquin County raised from 2,700 ewes some 3,300 lambs. Twenty-seven hundred, of which 900 were from the twin bunch, were good enough to be shipped to Chicago, bringing 14½ cents per pound at the loading corrals.

"The ewes were well bred Merinos and the rams used were Hampshires. The owner has an excellent range that grows an abundance of good feed, but during the lambing season plenty of alfalfa hay, corn and cottonseed cake is fed. He says he is repaid for the extra feed used by the increased poundage of wool alone, to say nothing of the added weight of the lambs."

TULARE COUNTY PREPARING FOR SHOW

That all the world may see, a huge electric sign bearing the words, "Tulare County Livestock and Agricultural Show," is being erected over the entrance to the fair grounds overlooking the state highway. The front wall will be remodeled in Spanish architecture, being finished in white stucco. A large main entrance 20 feet in width has been cut in the wall and will be brilliantly illuminated. The park between the highway and the fence of the grounds is being seeded in grass, and date palms are being planted. The fair will be held in Tulare September 14-18 and is officially known as "Tulare County Livestock and Agricultural Show."

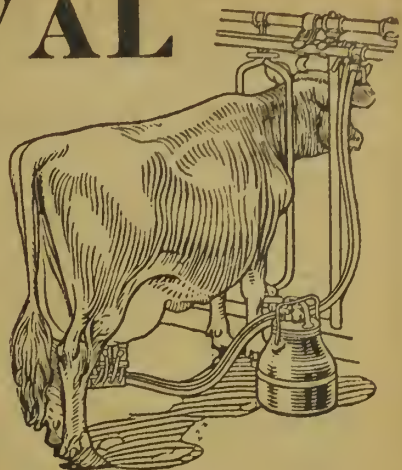
Hemet Valley of Riverside County reports barley and wheat crops running 25 per cent over last year's.

DE LAVAL MILKER

at Roseland Dairy

Roseland, N. J.

Messrs. Henry Becker & Son,
the owners, write as follows:



The De Laval Separator Co.,
165 Broadway,
New York City.

Gentlemen:

Having now used a six unit De Laval Milker for nearly four years on more than one hundred cows, we wish to say that we are very well satisfied with the working of this machine in every detail.

The cows all take kindly to the De Laval Milker, which fact of itself proves the operating of it is very gentle. With labor conditions the way they have been for the last three or four years, we would have to dispense with part of our cows had it not been for the De Laval Milker.

And we must say that the service you render De Laval users is prompt and effective.

Henry Becker & Son, Inc.

THE De Laval Milker is a tried and tested De Laval product. It is a distinctly different type of machine—the only milker having master control of pulsation speed, uniform milking at all times, Udder Pulsator, positive alternating action, and self adjusting teat-cups.

The De Laval is faster, more reliable, more sanitary than any other method of milking. Its action is gentle from the start—old cows that are hard to milk, heifers and high-strung pure-breds are all milked successfully.

The De Laval Milker is made and sold by the same Company which for over forty years has earned an enviable reputation for service to users. When a man buys a De Laval product, the Company considers that its obligation to him has just started.

Write to Nearest De Laval Office For Milker Catalog,
Mentioning Number of Cows to be Milked

DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

61 Beale Street

San Francisco, Cal.

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Ten Feed Tests conducted by the University of Idaho recently, have proved that 57.5 tons of chopped hay were equivalent in feeding value to 75 tons of long hay—a saving of 25%.

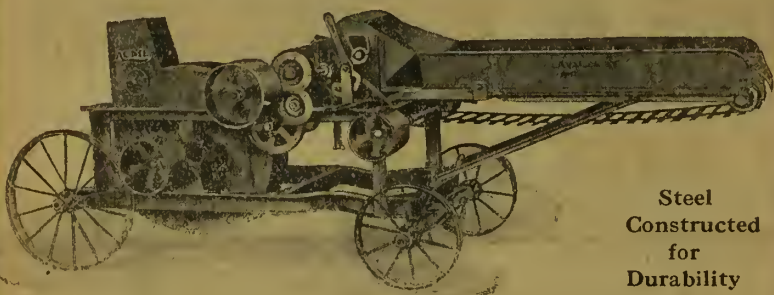
We will gladly furnish the complete results of these tests to dairymen and stockmen upon request.

You too can make this saving in your feed costs if you chop your hay—a saving of \$4 to \$6 on every ton you raise.

With a short hay crop in sight this is the way to start conserving it. Chopping avoids waste and utilizes to the fullest extent the feeding value of the entire hay crop.

The ACME Cutter

will do the work



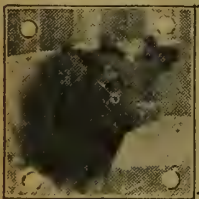
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for
Durability

The Combined Hay Chopper, Silo Filler and
Alfalfa Meal Machine

Send for Our Complete Cutter Catalog

DE LAVAL DAIRY SUPPLY CO.

61 Beale Street, San Francisco



THE FARMERS LIKE THEM

The liberal milking Shorthorn cow that also has meat on her back is a favorite with the farmer, and for the best of reasons. She pays her way and produces a calf that is always in demand. She quickly takes on flesh and is ready for market on short notice and her quality and extra weight bring an extra price to her owner. There is no other like her.

At the International Livestock Show two years ago a Shorthorn ewe was a prize winner in the class for milkers and her steer was champion in the beef steer class. It pays to breed Shorthorns.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave. Chicago, Illinois
Ask for "The Shorthorn in America"

CARRUTHERS SHORTHORNS Bulls For Sale

Just now this herd can supply a number of exceptionally high class young bulls that are just the sort for range improvement. They are well bred, thick fleshed, heavy boned, and good colors—and they are priced to sell.

Carruthers' bulls will be found on many of the best ranges in the West—there is a reason.

We also have Berkshires.

Visit the farm or write for prices.

W. M. CARRUTHERS
Live Oak California

Ormondale Ranch Shorthorns

Redwood City, Cal.

HERD SIRES

Boquhan Guinea Stamp, the great Imported Young Broadheads bull. Golden Goods Jr, sire of LITTLE SWEETHEART, Grand Champion International Show, Chicago, 1919.

Bulls and heifers for sale.
Duroc-Jersey hogs for sale.

James McDonnell, Supt.

CALEDONIA SHORTHORNS



Imp. Caledonia

Caledonia Shorthorns constitute one of the choicest collections of the breed owned in America. Our herd bulls, Imp. Caledonia, Gainford Matchless, grand champion at the 1919 San Francisco show and Pine Grove King stand out prominently in the West. Our females represent choice Scotch and American families, and are noted for their type and quality. We can at all times furnish foundation material and bulls suitable for any herd or for the range. Our prices are moderate and every animal is guaranteed. Visit our farm and herd. Send for special bull list.

CALEDONIA FARMS
WEST SACRAMENTO, CALIF.
OFFICE—57 POST ST., SAN FRANCISCO.

ARIZONA HOG GROWERS FORM STATE ORGANIZATION

A number of progressive swine breeders recently held a meeting in Maricopa County and formed a temporary state swine growers' association.

The temporary officers elected were Ben J. Jeffers, president, and W. E. Schneider, secretary. The officers were further authorized to draw up a constitution and by-laws and to prepare a program of work for the coming year.

The most important problem confronting the breeders, according to the opinions of those present, is a more extended use of pure bred stock of good quality and the increasing of the dressing percentage of market hogs. Mr. Granville, who is managing a herd of 1,700 head of hogs, reported selling 74 head of nine months Duroc-Jersey hogs which averaged 272 pounds live weight and which dressed 78 per cent. This is in contrast with the usual run of hogs in Arizona which at present dress 65 per cent.

The question of establishing livestock sales in Arizona similar to those proving so successful in California through the county farm bureaus was thoroughly discussed and everyone was in favor of working toward this plan in Arizona. Mr. Schneider pro-

posed that a sale be conducted in connection with the coming state fair when a number of breeders could consign small numbers of hogs which would make a sufficient number to successfully hold an auction sale. Co-operative plans with the agricultural extension service of the University of Arizona were also discussed and the hog growers present expressed appreciation of the educational value of the pig club work and proposed that the newly formed association of hog growers give financial support to this work and that they assist in plans which might make possible a continuation and enlargement of the existing club exhibits as conducted during the state fair in years past.

It was also decided to make definite request of the proper officials for conducting hog feeding experiments on the Mesa experiment farm under the direction of the agricultural experiment station for the purpose of securing figures on the cost of producing pork under Arizona conditions, with the further idea of gaining any facts concerning the relative feeding value of barley, milo, hegar, feterita, in conjunction with tankage and alfalfa pasture.

A later meeting of the organization will be called when the program of work has been further developed and at this time a permanent state organization will be formed.

LOCO SERIOUS IN ARIZONA

As an experiment the Coleman Cattle Company in Navajo County, Arizona, will treat some of their locoed animals as recommended by the bureau of animal industry. This range is badly infested with loco and several hundred head of young cattle are affected.

County Agent Fillerup even reports that farmers claim their bees are becoming locoed.

Much loco extermination has been carried on by the stockmen. Many practical suggestions were made by Dr. C. D. Marsh, the government loco

expert, sent over the state this spring by the agricultural extension service to advise stockmen.

The report of injury from loco has been so serious in northern Arizona this year that Dr. R. J. Hight, state veterinarian, has joined in aiding the stockmen with this problem.

Many large bands of sheep are reported by County Agent Fillerup grazing safely over heavily infested locoranges. Occasionally, a hungry lamb will eat enough to be killed. Death comes more quickly with sheep than with cattle.

Upon a few ranges every horse has been killed by loco. This is true on some ranches in the Vernon district. The destructive species of the loco plant was in full bloom and most deadly about the last week in May or early in June.

A GREAT BULL

It is unquestionably true that up to the present time no California Holstein bull has attained any marked prominence through the presence of his sons at the head of a large number of good herds. Probably the nearest approach to fame in this respect has been made by Segis Pontiac De Kol Burke, whose sons acceptably head a number of high class herds, and it may



Food and Clothing for the Nation

be remarked in passing that they have proved to be uniformly good sires both as to transmitted type and production. The honors for sons at the head of high class herds at present belong to the great Burr Farm sire King Korn-dyke Pontiac 20th, and a large measure of the credit for this must go to his former owner, W. J. Higdon, Tulare. In the matter of having his sons handing down his blood through other good breeding herds, King Korn-dyke Pontiac 20th has already registered an achievement that seems worthy of note. Of course his outstanding son is King Korn-dyke Pontiac Acme, the bull for which Anita M. Baldwin paid \$41,000 at the St. Paul National Sale in a spirited bidding contest with some of the leading breeders of America. Then there is another son out of K. P. Tola Joe, for which Pecho Land & Stock Co., San Luis Obispo, paid \$5,000 when the calf was only four months old.

One of his most highly rated sons heads the Los Angeles County Farm herd, the dam being the famous producing and breeding cow De Kol of Valley Mead 2nd, whose yearly butter records at three and four years were a world's record for age when made, and she in turn the dam of Miss Valley Mead De Kol Walker, who is the dam of King Korn-dyke Pontiac 20th.

Another son out of the great heifer Madrigal Mooike 2nd is being used on several good Nevada herds, including the herd owned by University of Nevada, Reno.

Tosantos Walker Pontiac, another son, out of a 26 pound four year old full sister to Miss Gelsche Walker Korn-dyke, heads the good herd of pure bred owned by F. F. Pellissier, Whittier. The dam of this bull is generally rated as one of the best daughters of Prince Gelsche Walker and promises to establish a very large production record at mature age.

King Korn-dyke Pontiac Leda, another son, out of Leda Hengerveld De Kol Korn-dyke, a 30 pound daughter of Korn-dyke Quacen De Kol's Prince,

THE VICTORY HERD—Holsteins and Duroc-Jerseys

Holsteins of known value, headed by Sir Plebe De Kol Segis Pontiac, a son of King Segis Pontiac Count, acknowledged one of the breed's greatest sires. A young bull from this herd is bound to prove a profitable investment.

HILLCREST FARM, H. E. Spires, Mgr., Caruthers, Cal.
Duroc-Jersey Swine of Highest Quality

heads the Stockton State Hospital herd at Stockton. The dam is owned by Anderson & Fogarty, Sacramento, who will carry her on yearly test this year.

King Korndyke Paula Segis, another son, heads the herd of Allison & Storm, Tulare. The dam of this bull is Paula Segis, a 30 pound daughter of Sir Ormsby Burke Segis, and was one of the very best cows in the W. J. Higdon herd.

King Korndyke Senorita, another son, out of a dam that made over 700 pounds butter in one year as a three year old, heads the herd of A. W. Schultz, Burrel, and is one of the best individual sons of his sire.

King Pontiac Sarcastic Korndyke, another son, is owned by P. Brunold, Modesto. This fellow is a show bull, and his dam is a 22 pound daughter of Dutchland Hengerveld Sir Gladi. Her record was made at last freshening and she is rated capable of much larger production.

R. F. Guerin, Visalia, also owns a most promising young son of this sire out of the great 36 pound daughter of King of the Pontiacs, K. P. Tola, the dam by the way now being at Burr Farm, where she has started off wonderfully well on yearly test. There are also a number of other sons of King Korndyke Pontiac 20th in other herds.

BOTS

One of the most common insect pests of horse flesh is the bot. It is the larval form of the bot fly (*Gastrophilus equi*). It is about three-fourths of an inch in length, brown or whitish brown in color. The abdomen presents three rows of dark spots and the entire body is covered with hair.

The female fly busies herself during the warm summer days depositing and gluing her eggs on the hair of a horse. These yellowish seed like bodies are well sprinkled over the heavier haired parts of the horse. They are very small and ovoid in shape and placed in a standing position on the hair. Here the egg, which contains a relatively well developed larva, reposes until it comes in contact with moisture when it escapes from its resting place. This is occasioned by the animal licking itself or other animals infested with eggs and in this manner the grubs, as they are not infrequently called, find their way to the mouth and in turn to the stomach.

When this organ is reached the bot readily attaches itself to the mucous membranes by means of hooklets, of which it has many. The favorite location for these pests is near the outlet of the stomach. Here they remain until the following spring when their maximum size is reached. At this time their hold on the stomach wall is loosened and together with the food they pass through the intestines and are finally expelled with the excreta.

Once upon the ground they bury themselves in the litter and pass into the dormant or pupa stage. After a dormant period of from 30 to 40 days they appear as flies ready to start another life cycle.

During the warm season the flies are a source of great annoyance to horses. The harm done by the bot infested stomach depends on the number present, and the damage done may be inflicted in one of two ways. First, obstruction to the regular passage of food into the intestines, since the pest inhabits the stomach outlet. Such a condition delays the digestive functions and interferes with the normal nutrition of the animal. Second, the manner in which they attach themselves to the delicate stomach lining may cause injury, especially so if the grubs are present in such great numbers that crowding necessitates their taking a deeper hold.

There is no way of telling whether or not a living animal is injured by bots, since no typical symptoms are produced. Removal of bots from the stomach is a very unsatisfactory undertaking. Drugs do not affect the bot but may prove harmful to the stomach. Preventive measures as recommended by the division of animal industry of the state department of agriculture are much to be preferred to internal dousing. The first step in this direction is to see that the eggs do not gain entrance to the horse's mouth. The frequent use of the curry comb, card, or clippers is

to be recommended and prevention may be furthered by an occasional application of kerosene to pastured animals. This destroys the larvae and kills the egg laying flies. One part of kerosene to five parts of lard with the addition of a little pine tar makes an efficient mixture if applied about once a week during the egg laying season.

If you would use dope, use it externally, not internally.—S. O'T.

LEADING RECORDS OF CALIFORNIA COWS

Leading records in milk and butter fat made by the different dairy breed cows of California are contained in a 15 page circular for free distribution issued by the college of agriculture of the state university. Photographs of the prize cows are shown as follows: Interested Jap's Santa, record Jersey

cow; Belladia, record Guernsey cow; Aaggle Acme of Riverside, record Holstein cow; Willowmoor Vesta, record Ayrshire cow; Ruby Pietertje of Forest Hill, highest 30 day butter fat record and highest senior four year old seven day record. The bulletin, under the title "Advanced-Registry Testing of Dairy Cows," is the work of F. W. Woll, professor of animal nutrition, and P. I. Dougherty, instructor in animal husbandry.

AUCTION SALE

Conejo Ranch Pure Bred

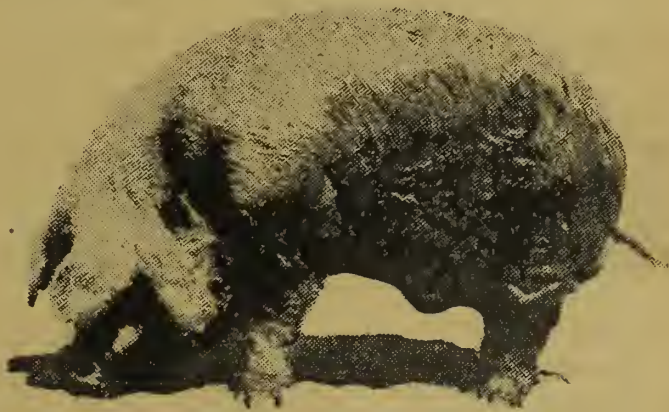
Duroc-Jerseys & Hampshires

July 29th and July 30th

The first day of this big sale will be for Durocs exclusively — the second day the Hampshires will be offered. These real big types of both breeds in the Conejo Ranch Herds make valuable foundation stock for farmers, fancy breeders and pork producers.

Prize Winners at All Fairs

This is GIANT WONDER, one of our leading Duroc-Jersey herd boars. This big fellow's sire was Great Wonder and his dam Grand Lady 6th. This boar is an outstanding individual and his get will be seen at the Ranch. A great number of the gilts and sows in the sale are bred to him.



This is our Hampshire boar CONEJO PRINCE. This boar was raised on our own Ranch and was sired by our famous champion boar Duke's Allen and his dam was Pines Pride 4th. They go back to Manley's Duke and Walkover. If you want to see a big growthy type of Hampshire, this is one of them.

Make arrangements to attend. Lunch will be served at the ranch both days. If you desire transportation from Los Angeles to the Ranch, let us know and be sure to come to 404 Metropolitan Building, 5th and Broadway, when you arrive in the city. If you want a catalogue write us at once, and an illustrated catalogue will be mailed to you. Remember the days — July 29th for Duroc and July 30th for Hampshires—the famous pure bred stock of the Conejo Ranch.

CONEJO RANCH

Newbury Park

Ventura County

Los Angeles Address:

JANSS INVESTMENT COMPANY, 404 Metropolitan Building, 5th and Broadway

the foundation of POULTRY PROFIT

lies in correct feeding and in giving poultry the elements which their system demands—whether it be for egg production or market use.

In LACTEIN CONDENSED BUTTERMILK, science and research have come to the aid of the poultryman with gratifying success. LACTEIN CONDENSED BUTTERMILK is pure, clean buttermilk, processed and pasteurized, with the added advantage of development of LACTIC ACID to the highest stage.

And with its most economical feeding, coupled with the wonderful results, LACTEIN should be the FIRST INVESTMENT YOU SHOULD MAKE if you are desirous of poultry profit.

LACTEIN is long past the experimental stage—the demand is great, and it taxes our factory to supply the great increase in its use. The largest poultry raisers in the world use it—and it pays them a handsome profit.

Ask your poultry supply dealer for LACTEIN TODAY — you'll find that it will put the profit in poultry.

Start now with this economically fed food and tonic for poultry and hogs—it keeps them in the finest of health and nourishment.

Lactein Company

Modesto

Main Office and Factory



RAISE GUINEA PIGS FOR US.

We supply stock and buy all you raise. Laboratories need thousands—big money—easy to raise.
Send 25¢ for Book on
— HOW TO MAKE \$2,000 A YEAR —
DR. J. A. ROBERTS LABORATORIES
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ADAMS PIPE WORKS

New and second hand pipe and casings.
Riveted steel pipe, valves and fittings.
Mail orders given prompt attention.
Write, phone or call,

2025 Bay St., Los Angeles, Cal.

Poultry in Arizona

POULTRY prospects are somewhat brighter than they have been for several years. Those who are fairly well equipped for poultry work (that means, with good producing stock, fairly comfortable yards and houses), have done very well. Conditions on the whole, in spite of rather high feed prices, have been favorable.

Just at present there seem to be a number of factors that make the outlook particularly good. About 60 per cent of all the poultry in Arizona is in the Salt River Valley. Probably about one-third more eggs are imported into Maricopa County than are produced in the county. Of course this means that a much larger proportion is imported into the other sections. At certain seasons of the year there is a surplus and a considerable shipment of eggs to outside markets, principally to the mining towns of the state. Then during the winter season there is a shortage and it is necessary to bring in eggs from outside points. Other towns in the state ship in eggs practically the entire year round. Necessarily these are brought from outside the state, part of them from the Coast and part from Kansas City. Logically it would be desirable to produce enough for home consumption.

The overproduction in the spring of the year has been heretofore somewhat discouraging. For the past two seasons, however, there has been a quantity of eggs stored during the season, of greatest production. The results of this experiment have proved conclusively that storage is practicable and profitable. The fact that it is necessary to have only the choicest eggs to put in cold storage, has also had a noticeable effect on the improvement of the quality of the eggs. This has resulted in establishment of a standard of quality, one thing that was very badly needed. It has also resulted in putting a premium on eggs of first class quality, uniform in size and color.

We have now a modern fattening and killing plant for the handling of market poultry which insures a stable market for live poultry of all kinds at all times. This is encouraging. Another factor that is very pleasing to the poultrymen is the fact that the poultry division of the United States department of agriculture has established a poultry experiment station in the Salt River Valley. It is true that this station is only beginning and that not much benefit may be expected for a number of years but it is recognition of the climatic advantages that we have for poultry raising. Harry Lamon, head of this division who was here recently, states that it is his belief that this country has a wonderful future as a poultry raising center.

Our poultry breeders have found a ready market for a considerable number of their products in the northern part of the state where poultry raising is becoming more and more popular each year and is being encouraged very largely by the county agents in the northern counties.

The fact that we have green feed all the year round and that we are enabled to hatch early, makes it possible to raise earlier birds and birds that will begin laying as soon as cool weather comes in the fall and are in ideal condition for breeders the succeeding year. This gives us an advantage over eastern breeders which we have been somewhat slow to realize. Some of our breeders have had the courage to send their birds to some outside shows and have found that notwithstanding the trip of hundreds and even thousands of miles, they compete with birds of breeders of note throughout the United States. Our breeders are now coming to believe that there is an undeveloped field in this matter of producing breeding stock for the eastern markets which may have even greater possibilities in the production of eggs or market poultry.

Up-to-Date Cooperative Marketing

THE executive committee of the Poultry Producers of Southern California, Cornele G. Ross, chairman, sends out under date of June 25 a letter to members which will be a revelation to some of us, giving, as it does, an insight into business methods followed by that successful organization:

We hope every member will remember that it is only by the hearty cooperation of our shippers that we can achieve that success for which we are striving.

Use every possible care to keep your nests in a sanitary condition, in order that we may have clean eggs; gather twice daily, if possible; and store in a cool place—a place free from objectionable odors. Be careful in filling out your grade slips; see that all old tags are removed from your cases; be sure that each tag agrees with the contents of the case, and is securely attached to the end of same; and ship twice each week during the warm weather.

Your officers and station employees are not perfect, and may make mistakes, but we think our system is such as to keep these mistakes reduced to a minimum. For the information of our shippers, we give herewith the course each shipment takes after it reaches our hands:

The filled cases of eggs come into the station, either via truck, express, freight, or by personal delivery, and each shipment, as received, is entered in a book by the receiving clerk, who, at the same time, gives the shipment a register number and makes out a tally card. This tally card bears the register number, the date, the shipper's name, the number of cases in the shipment, how received, and, if delivery charges are collect, these too are noted on the card.

When received by truck (as most of the eggs are), the cards are first checked to agree with the truck driver's list, and all cards are checked as cases are unloaded and stacked on

the floor. The cards are then secured to one of the cases in the shipment, and when the head candler turns a shipment over to the individual candler, the card is again checked to see that the number of cases agrees with the number shown on the card.

The shipment then goes to the candler's bench, where he opens one case at a time, removes the grade slip with your record on it, and prepares to candle and grade the eggs. He may have before him, in addition to the filled case of eggs, from four to six cases partially filled with graded eggs from previous shipments, and he first sets down on the tally card the exact number of each grade of eggs in the cases before him. He then candles and grades into Extras, Firsts, Pullets, Dirties, Crax, etc., and also removes any "rots" or "leakers." When he finishes the entire shipment he again counts the eggs on his bench, together with any filled cases he may have removed, places the figures on the tally card, and strikes a balance which he then compares with the shipper's grade slips. If there be any discrepancy he calls the head candler's attention to same and signs the card. Should he at any time during the candling of a shipment find what he thinks to be a "shortage," such as an empty, or partly filled, filler, he calls the workman on either side of him to verify his count, and notifies the head candler immediately.

These tally cards, which now bear both the shipper's and the candler's grading, are compared with the shipper's grade slips by the head candler, and in case of any material discrepancy the office notifies the shipper immediately.

The cards for each week's pool then go to the office, where they are arranged in alphabetical order and transferred to the statements. The statements are made in duplicate, one copy to go to the shipper with the remittance, and the other for a permanent record in the office. Another record is made in the office register, which

has to agree with the statements. Checks in payment of all shipments received during the pool week are then drawn, and these must agree with the totals shown on the statements.

In addition to the foregoing proofs, our auditor makes a monthly audit of eggs received, eggs sold and eggs on hand. His written report covering this audit, together with his regular financial statement, is submitted to your board of directors each month.

As the filled cases of graded eggs leave the candling room, they go to the nailer's bench, where the tops are nailed in place, after which they go out in accordance with their grade and the orders in hand, either into storage (during the storage season), to the trade, or into cars for shipment. The ends of all cases bear our name and the grade of the eggs, these being stenciled on the cases when they are made up. At the peak of the season as many as 700 cases for each working day in the week have been moved into and out of the station, since, owing to the perishable nature of our product, it cannot be held on the floor.

Come in and see for yourselves just what your station is doing, and you will realize the efforts your officers are making to successfully handle your business.

LADY VICTORY LAYS LAVISHLY

Poultry specialists of the United States department of agriculture practice as well as preach. Their recommendations to poultrymen are based on actual experience. At the department's experiment farm at Beltsville, Maryland, is a flock of more than 6,000 birds whose thriving condition and good egg production are evidence of the practicability of the specialists' poultry doctrine. In this immense flock is one hen—Lady Victory they call her, though officially she is No. 408—who has been exhibited at many poultry shows and has taken many prizes. This is the enviable laying record which she has made: In her pullet year she laid 214 eggs, and in the first five years laid a total of 779 eggs. Lady Victory is now in her sixth year, hale and hearty, and still laying eggs at a good fast clip.

EAT, CAN OR SELL SLACKER HENS

"Watch for the slackers," is the advice given by N. E. Chapman, poultry extensionist with the Minnesota college of agriculture. "The time of year is approaching," he says, "when broody hens and slackers may reduce the percentage of egg production below profitable figures. It should be the aim of every poultry keeper to maintain at least a 50 per cent egg production. The slackers are hens too old or too lazy to pay their way, those

Coulson's Baby Chick Milk Mash

The Best Feed
for first six weeks

Write for particulars

Coulson Co.

Petaluma, Calif.



using their feed for making fat and those that have finished their year's production of eggs and are beginning to molt. The poultryman cannot reasonably expect to maintain a high production if he has many birds of this stamp. Cull them out at once. They should be eaten, canned or sold. The oldest and fattest are easy to pick out and hens beginning to molt, with legs still yellow and with small, yellow colored vent, are through with this year's production and will take a long and unprofitable vacation if kept on the farm."

HOW TO "BREAK UP" BROODY HENS

The time has come, says N. E. Chapman, poultry specialist with the extension division of the Minnesota college of agriculture, when poultrymen raising larger breeds—the so-called Rocks and Reds—will have more broody hens than they can use for hatching purposes. All such should be "broken up" as soon as possible, that they may be returned to the laying contingent of the flock and do their part in maintaining at least a per cent production. Mr. Chapman says the best method of interning a broody hen is to have a well ventilated coop or box with slatted or wire bottom so that the air will circulate freely and thus help to reduce the broody fever. Hens thus incarcerated should be well fed in troughs kept just outside of the coop and also should be given skimmilk or buttermilk. Good feed is essential at this time that the egg producing organs may maintain their force and vigor. The coop may be kept in the poultry house or outside, if well protected. From three to seven days confinement should suffice to effect a cure.

OSTRICH GROWING AS A BUSINESS

Just previous to the outbreak of the Great War, ostrich growing had become one of the important industries of Arizona. At that time there were in the Salt River Valley some 7,000 birds, or about 80 per cent of all the ostriches in the United States. Dame Fashion decreed that ostrich feathers should not be worn. It is possible that the people of Paris, where Dame Fashion is said to reside, had something else to think of than ostrich feathers for decoration and this may have had some influence in the decree. At any rate the price of feathers went down, down, until at last there was absolutely no demand and the patriotic owners of ostriches feeling that the food which they consumed was needed to help out the world's supply, disposed of them. A great many were killed and fed to hogs; some were turned loose on the desert; a few were kept by some of the farmers in the Salt River Valley and a sufficient number was sold to zoos and circus menageries so that people might not lose sight of the ostrich entirely. But the big ostrich farm, the largest in the world, which was formerly one of the show places of the Salt River Valley, was given over entirely to the production of feed for livestock.

At the height of the industry good ostriches were worth \$800 a pair, and even a six months old chick was valued at \$100. Feathers sold as high as \$125 a pound for the very best. The average production for a bird amounted to about \$25 to \$30 a year. About four birds on the average were kept to the acre on the alfalfa pasture. Pasturing, however, is not an economical way of feeding them, because they waste nearly as much as they consume. Where the alfalfa is cut and made into hay six or more can be kept to the acre.

Considerable experimental work was being done in the matter of feeding and breeding, and the ostrich growers were in a fair way to gather very much valuable data. They were spending considerable money in the importation of the best birds from South Africa, one bird owned by a Salt River Valley breeder alone being valued at \$5,000. The government had established an ostrich experiment station west of Glendale.

At the present time there are not more than 200 or 300 birds in the Salt River Valley but, in common with so many other commodities, ostrich feathers are rising in value. The present market quotations indicate a value which averages fully as high, if

not higher, than in any previous period, with the prospects of a further increase of at least 20 per cent within the next 30 days.

While it is not probable that ostrich growing as a business will ever assume the proportions which it did previous to the Great War, it may be that as a side line in conjunction with the maintenance of a proper rotation for cotton growing it will become a popular and profitable industry in a small way.

TRADE WITH CHINA

"It is time for the American people to realize that their future lies in great measure on the Pacific," says Julian Arnold, commercial attache to Peking, in a publication issued by the bureau of foreign and domestic commerce. "The opportunities of the United States on the Pacific are without limit, but its responsibilities will prove equally great. The only way it can meet these opportunities and responsibilities creditably to its own civilization and its own position, is by an intelligent and sympathetic understanding of the peoples of Asia and the present problems confronting them. Without this understanding we may unwittingly make some very disastrous mistakes."

China, Mr. Arnold asserts, is now at the dawn of what may prove to be the greatest industrial and commercial development that the world has yet witnessed. The Chinese are receptive to Western ideas and modern industrialism. The demands for machinery of all kinds during the next few decades will be enormous; in fact, the new China will be in the market for practically everything the West has to offer, especially metal goods, building materials, railway, mining and shipbuilding equipment, heating and sanitary appliances, motors and motor cars, knitting machines and textile plants, needles, nails, hardware, electrical machinery and equipment, industrial plants of nearly every description, and, indeed, everything needed to transform the country into a modern industrial commercial society. Mr. Arnold predicts that instead of 100,000 persons in the factories and 4,000,000 children in schools (the estimates for 1918), the China of a few decades hence will have 40,000,000 factory hands and 80,000,000 school children, figures proportionate to the present statistics of the United States.

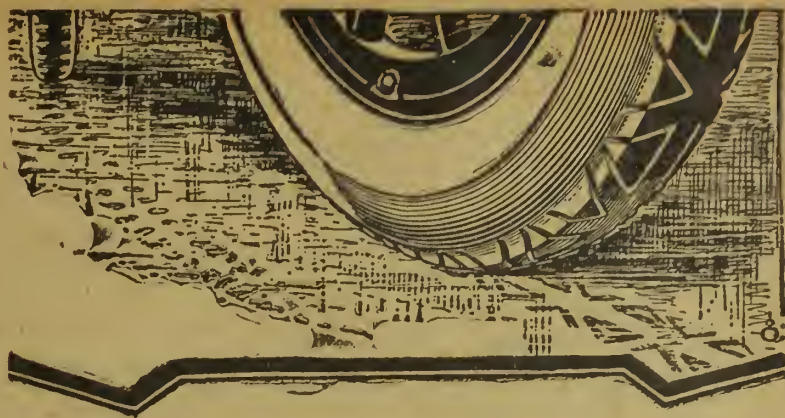
"There need be no international jealousies," Mr. Arnold continues, "in the competition for the wonderful trade that China will have to offer, as there will be room for all." And he adds: "A strong, independent, self reliant China possessed of progressive ideals will prove a blessing to humanity. It behooves the West in its relations with China to work on broad lines in a spirit of cooperation rather than competition, with a vision for the future, as the day will come when the Pacific will be the world's great arena of trade and commerce, and that trade will be worth while only if it is built upon a foundation of friendship and good will."

WHEAT SHORTAGE IN SOUTH AFRICA

Consul General George H. Murphy, Cape Town, reports May 4, 1920: "The price of bread was on May 4 raised at Cape Town from 10 cents to 11 cents for the one pound loaf, with a corresponding increase in the price of ration and brown loaves. The price of flour has suddenly advanced from 65s to 76s (from \$15.82 to \$18.49, normal exchange) per sack.

"Supplies of wheat are very low owing to the action of the Australian government in refusing to permit the exportation of high grade flour and wheat to South Africa, and also owing to the adverse rate of exchange with the Argentine Republic. It is alleged that the farmers are refusing to sell before the end of June in order to escape the excess profits tax, and the outlook as regards breadstuffs is far more critical than it has ever been. It has also been stated that it may soon be necessary for the government to reimpose the Burton war bread law, which required the mixing of maize flour with that of wheat."

Brawley, Imperial County, shipped its first carload of honey to Milwaukee through the California Cooperative Association.



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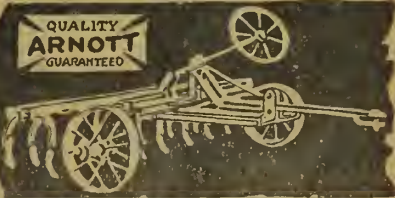
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POULTRY

BROODERS

We are offering to the California public the Reliable Blue Flame Brooder. It has a capacity of one thousand chicks. Burns one gallon of common kerosene oil in twenty-four hours, without gas, soot or odor. The most perfect brooding device yet placed on the market. In use, and endorsed by the Oregon Agricultural College, and the Western Washington Experiment Station, and two hundred other satisfied users in and around Seattle. We are western distributors. Have some good territory open. Write for circular. Queen Hatchery, 89 Pike Street, Seattle, Washington.

BABY CHICKS

A Fireless Brooder with every order of one hundred chicks. We ship in the brooder, thus there is no chance of chilling in transit and you have an excellent way to raise them. We have the following varieties of thoroughbred chicks every week: Anconas, Barred Rocks and R. I. Reds, \$20.00 hundred. Extra fancy dark R. I. Reds and White Rocks at \$25.00 a hundred. White Leghorns \$17.50. We guarantee safe delivery. Every one a strong, healthy chick. Orange County Hatchery, 403 E. Santa Clara, Santa Ana, California.

Spring Baby Chicks For Sale—400,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) Stock. Price during May and June, 25, \$5.00; 50, \$9.00; 100, \$14.00. Special prices 500 and 1000 lots. Safe delivery guaranteed. You pay only for chicks received alive and in good condition; no money in advance, pay on delivery. Shipped safely anywhere west of the Rockies. Finest hatchery in the world. Established 1898. MUST HATCH INCUBATOR CO., PETALUMA, CALIF., 438 Seventh St.

White Leghorns — From the home of heavy layers. Buying carefully selected spring cockerels now is economy. We have them from our choicest pens. All breeders have orchard range. Fall chicks pay big. Free folder tells why. Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, California. Phone 492.

Baby Chicks for August and September delivery. Barred Rocks and R. I. Reds, \$20 per 100. Fall delivery Anconas, \$20; MacFarlane strain W. Leghorns, \$16. Send 25 per cent of amount with order, balance before shipment. Hargett Hatchery, Route 2, Compton, California.

Baby Chicks from my carefully selected, thoroughbred flock of S. C. White Leghorns. May, June and July delivery at \$13.00 per 100. Good, strong chicks at this reasonable price. Write for particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

ATASCADERO POULTRY FARMS

S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write Henry Miller, Supt.

Thoroughbred B. P. Rocks, Trapped Cock and Cockerel matings, 250 egg record and better, mine 210 and better. Fertile eggs, \$2.50 15, chicks, 25c. Phone 5599, Mrs. M. A. Warren, 36 Little Delmas Ave., San Jose, mornings only.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vadden, Los Gatos, California.

Buff Orpington, Buff Ducks, Bourbon Red Turkeys, White Guinea. The Ferris Ranch, S. Reservoir, Pomona, California.

White Minorca Baby Chicks and Hatching Eggs — Dark Cornish and Silver Campine eggs. Folder. Leech Poultry Yards, Baldwin Park, California.

Baby Chicks from selected egg type S. C. White Leghorn hens. Tupman Poultry Farm, Box 7-C, Ceres, California.

SALESMEN WANTED

Agents Wanted to sell seeds, plants, bulbs, trees, garden supplies, etc. Liberal commission, large firm, part or full time, good opening for any one. Boys and girls also wanted to sell package seeds during vacation and after school. I send box of seeds free—you pay as sold. Give age, reference, and photo with letter. Send at once to Wm. Dart, Santa Rosa, California.

Men With Spare Time—Ranchers especially can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write J. H. Yetter, 115 North Broadway, Los Angeles.

Wanted—Salesman who can sell high-grade, dependable nursery stock; exclusive territory; outfit furnished and cash advanced weekly. Commission basis. Address Albany Nurseries, Inc., Albany, Oregon.

Agents—Would an all year round quick seller interest you?—then write Dept. 38, Martinek Company, 405 Lexington Avenue, New York. Opportunity to build up a national and international trade.

GOVERNMENT LAND

300,000.000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book, THE HOMESSEEKER, which tells you how to acquire this land, or send \$2.00 for book direct. The Home-seeker, Dept. M, 313 Grant Bldg., Los Angeles, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

TREES

For Sale—Ten thousand one year Sour Seedlings, six inches up to twenty. No better stock to be had. Price \$60.00 the thousand, also 500 ½ inch up Valencia one year, \$1.40 each, 300 pedigreed Eureka Lemon trees ¾ inch up, two years. The above is first class, fine roots. C. W. White Citrus Nurseries, Home 303, Glendora, California.

For Sale—Placencia Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. Ketscher's Nursery, 1101 E. 4th St., Santa Ana, California. Phone 572WK.

50,000 Florida Sour Orange Seed Bed Trees; 100,000 California Sweet Seedling Seed Bed Trees; Valencia, Eureka Lemons; Supply Co. buds. SOUTHLAND NURSERIES, 1941 East Colorado St., Pasadena, Cal. Phone, Colorado 6352.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Fruit Trees—Berry Plants scarce, order now. Cash Nursery, Sebastopol.

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Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

For Sale—Entire herd of A-1 Jersey dairy cows, about 33. Address Perry Dresser, Rt. C, Tulare, Cal.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Wineville, California. E. R. Stalder, owner.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Sunshine Farm Jerseys — No females for sale. Bulls from high testing cows for sale. E. E. Greenough, Merced.

Reg. Shorthorns—Fair Oaks Ranch, Willets, California.

SEEDS AND PLANTS

For Sale—Burbank's Early Mortgage Lifter Blackberry Roots. Earliest Blackberry on the market brings big prices. Ripens in March and April. Price \$1.00 a dozen. \$7.50 a hundred. Address D. A. McAleese, 1000 W. Broadway, Whittier, California.

Rhodes Grass—Is making Imperial Valley famous and will make any other section famous, if it is planted, especially if the soil is hard or alkali. Write Imperial Valley Seed House for Literature. El Centro, California.

Since May 1st, Ranere Everbearing Raspberries have brought \$30 to \$35 per chest. Plants for fall delivery \$75 per 1000; 10c each. E. Everton, R. D. A., Box 305, Mt. View, California.

Order Now Nursery Stock for fall planting. Sudan, Rhodes Grass, Honey Sorghum and Cane seeds. Box 501, Fowler, California.

Pumpkin Seed — Mixed Pumpkin Seed, good germination, 25c per lb. Aurora Seed Mill, Stockton, California.

WANTED

Wanted—Dairyman to take charge of herd of about 75 Ayrshires in Santa Barbara County. State experience, wages expected and religious affiliation if any in letter. Box G. B., Cultivator, Los Angeles.

Married Dairyman desires position on ranch; purebreds preferred. Educated; lifetime experience. Box S. R., care California Cultivator, Los Angeles.

Wanted—A first class milking machine, new or second hand—no junk. Chas. A. Miller, R. F. D. No. 1 Box 131, Ontario, California.

Wanted—Immediately, experienced bud-ders and tlers. Address or phone Kirkman Nurseries Fresno.

Wanted—To hear from owner of land for sale. O. K. Hawley, Baldwin, Wisconsin.

LIVE STOCK

BUTTE CITY RANCH

Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Next sale at Ranch, Wednesday, August 11, 1920. W. P. Dwyer and W. S. Gullford, Box C, Butte City, Glenn County, California.

Carruthers Farms—Live Oak, California. Shorthorn cattle and Berkshire swine of quality and select breeding.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

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BRED GILTS FOR SALE.

I Have the Only English herd of Pure Bred Berkshires in the West. There is not a weakling or a runty pig in all the litters of these English sows, sired by the Champion of England. It has been claimed that the English Berkshires have the largest and strongest litters. The pigs' sire is one of the greatest sons of the famous Epochal. If you want a boar pig that will put bone, heart and vigor into your herd you had better order him now. They are going fast and they are guaranteed to please or your money refunded. Boar pigs \$35.00. Sandercock Land Co., 703 Market Street, San Francisco. In charge of Natomas land sales.

A few choice young boars sired by

"Achiever" out of Grand Champion. 600-

700 lb. Sows for sale at \$50.00 each.

CASTLEVIEW RANCH, SANTA ROSA, CALIFORNIA.

Sow Pigs and Boar Pigs sired by Ames Rival 118th, Ames Rival 70th, Ideal Royal Lee, Champion Masterpiece 8th, Escalon Majestic and Achiever and out of prize winning sows. A postal will bring prices. Geo. A. Stingle, Lark Meadow Ranch, El Monte, California.

Grape Wild Farm—Berkshires, Guernseys. Big Type Berkshire Boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion. A. B. Humphrey, Prop., Escalon, California.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calas Orchards, Martinez, California.

Real Good Berkshires, cholera immune Frank B. Anderson, Box 724, Sacramento, California.

DUROC-JERSEYS

Hogs—Duroc-Jersey, big type, Registered. Brookwater blood lines, 6 bred gilts due to farrow August; \$150 each. Will weigh 300 and over; also 5 brood sows, Eastern and California bred, three and four years old; will weigh 600 and over, \$200 each. Must be sold at once. Apply Sells Ranch, P. O. Box 88A, Route 2, Merced, California, or 1010 Claus Spreckles Bldg., San Francisco.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

Bargains in Bred Sows and Gilts—Pathfinder and Great Wonder I Am blood. Derryfield Farm, Capitol National Bank Bldg., Sacramento, California.

L. & M. Ranch, Van Nuys — Buy our young boars by such sires as May Rose King, Winsor's Giant Orion, Orion's King Gano, Top Sensation 3rd.

SWEETWATER DUROCS

The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co. Address: R. K. Walker.

Durocs — Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. J. L. Stevenson, Van Nuys, California.

December and March Duroc boars; Pathfinder breeding. Sterling Smith, Route 1, San Diego, California.

For the Best in Durocs write June Acres Stock Farm, Davis, California.

POLAND-CHINAS

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. J. H. Crawshaw, Hanford, California.

The Big-Type Polands direct from Iowa. The best blood lines in the game by the Iowa man. J. L. Dunlap, Pomona, California.

The Grand Champion El Profitto heads our big type Poland Chinas. Letters promptly answered. Viola L. Renwick, Santa Barbara, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding Ferguson & McKalg, Orland, California.

HOGS

My Victor Herd — Headed by Billiken Chester Whites. For quality and big litters. E. E. Fulton, Box 7, Fair Oaks, California.

DUCKS

White Pekin and Indian Runner Ducks, 6 weeks, 65c each, good stock. Must sell, also a trio Pekin ducks \$3.50, a bargain. Mrs. G. Page, Box 162, Danville, California.

White Pekin Baby Ducks—White Pekin Duck Eggs for hatching. 152 East Spruce St., Inglewood.

Mammoth Muscovy Ducks, Ducklings and Hatching Eggs; heavy fowls and great layers. Woodland Hatchery, Woodland, California.

RABBITS

Pedigreed Flemish Giants; also utility stock. No fancy prices. Maud Beeching, 1578 W. 46th Street, Los Angeles.

New Zealand Reds—Young stock. Reasonable prices. Josephine Spencer, 1915 21st St., Sacramento.

PIGEONS

For Sale—White King Pigeons. Old mated breeding birds, \$3 a pair; unmated birds \$2 a pair. Paradise Valley Poultry Ranch, National City, California.

FARM LANDS FOR SALE

CAPAY RANCHO

On the banks of the Sacramento River. Water from never failing deep wells. 40 acres of fruit land, 2 second feet of water, \$150 an acre. 20 acres, adapted to prunes, apricots, peaches, \$150 per acre. 80 acres, 25 in alfalfa, 25 in two year old trees, balance graded and ready for crop, good house, large barn, water under pressure, lights and bath, farming tools and stock. Price for immediate sale \$300 per acre, good terms. Fred A. Clark, Resident Agent, Capay Rancho, R. F. D. No. 2, Orland, California.

LAKE-SIDE CITRUS AND FRUIT

40 ACRES, NEAR TOWN, \$5,000. High-grade fruit farm, attractive home, bordering hard-surface road; 200 orange trees, 200 grapefruit, 150 peaches, other fruit; 40 acres loam soil, some rich muck land; borders large lake; good house, overlooks lake and town half-mile away; barns, other buildings; widow must sell, big bargain at \$5,000, easy terms. Details page 50 Strout's New Catalog Orange Groves. Other Semi-tropical Farms. Copy free. STROUT FARM AGENCY, 503EJ., Wright-Callender Bldg., Los Angeles, California.

Ranch for Sale—160 acres ½ mile south of Yermo Division Point, S. L. R. R., formerly called Otis, San Bernardino County. About 30 acres in fence and has been cropped. House and well for domestic use. One deep well for irrigating, complete with 6 inch pump, 20 H.P. engine. Water lift about 20 ft. Watermelons, tobacco, cotton, milo do well here. Now is the time to see it while things are growing. Will sell on easy terms, and might exchange part for good property. Further particulars, address F. C. Brandt, Yermo, California.

120 Acres irrigated alfalfa or fruit land, 52 acres cleared, 36 acres partly cleared, balance timber. Price \$5,000; 2-3 cash, terms on balance. Abstract title, plenty water. No trade considered. Located in Happy Valley, Shasta County, California. Write Box 133, Cottonwood, Shasta County, California.

FOR SALE AND EXCHANGE

10-20-40-60 and 80 acre ranches, rich level, plenty water; proven grape (Thompson seedless), fig and alfalfa land. Price right, easy terms.

FOR SALE

Some of the finest dairies in the state. Chas. McNeely, Alpaugh, California.

For Sale—Two lots and five room house, chicken and necessary outbuildings in Ramsell addition. All deeds recorded. Fine water from pump. Slide walk connecting with grammar school. Mrs. L. O. Wing, Live Oak, Sutter County, California.

ANTELOPE VALLEY

Buy cheap, good alfalfa and fruit land in the easy lift water district near improved dairy and hog ranches. \$50 to \$75 an acre, one-fifth cash. Send for circulars. The R. & L. Ranch, 611 Fay Bldg., Los Angeles.

Many Bargains in real estate for sale or exchange. Citrus and deciduous fruits, olive groves, and farm lands. I am a resident agent. Joe Sprouse, Fallbrook, California.

Canadian Wheat Land — 160 acres improved, 1½ miles from town of 4000. \$50 per acre. Terms. P. O. Box 98, Merced Falls, California.

If interested in securing farm lands or have same for sale write me. John G. Mee, St. Helena, California.

Diversified Farming Lands—Natomas Irrigated, Sacramento County; terms. Alex. Murdock, 38 S. Sutter, Stockton.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

Best Cheapest orchard berry and range lands. John F. Beckett, Arroyo Grande, California.

MISCELLANEOUS

—DAIRYMEN—

40 tons of River Alfalfa and barley hay harvested at proper time well cured with lots of leaves, no weeds, no fox tail —30 tons first cut of first class clean 2nd and 3rd cutting subirrigated river alfalfa fine stems and all of the leaves. Balers have said this is the best hay they have seen this year. Hay grown on Natomas Ranch 3 miles from city on highway, \$30 per ton. F. Sandercock, Hotel Sacramento, Sacramento, California. Phone Main 900.

For Sale—Two hundred ton of first class oat hay, cut and in the barn. 105 head of high grade Holsteins. Ten head of horses, six head of young mules, all broke. M. Varenco, two miles east of Redding, California.

Parties interested in Securing Plans for the best and cheapest Evaporator of large capacity on the market will find it to their interest to communicate with F. C. Chapman, Modesto, California.

Stains of all kinds removed quickly. Large tube Dollar Postpaid. Dept 72, Martinek Company, 405 Lexington Avenue, New York.

GOATS

For Sale—One fine 2 yr. old seven-eighths Toggenburg doe, fresh in September, also 2 seven-eighths Toggenburg doe kids 4 months old. Sutter Rabbitry, Yuba City, California.

MACHINERY

BIG BARGAINS

1 Farquhar Bean Thresher, 26x34. Most satisfactory bean thresher built. List price \$1,990. Will sell at \$1,592 f. o. b. Fullerton. 1 H. C. complete sawing outfit with 6 h. p. gas engine, nearly new. Will sell at less than half price or \$350. Moline universal tractor with tractor attachment 2 gang plow, 24 inch cut. 2 gang disc plow, 24 inch cut. List \$1,860. Will close out at \$1,350. 8 Sanders single disc orchard plows, 24 inch disc. List \$125. Will close out at \$100 f. o. b.

WICKERSHEIM IMPLEMENT CO.,
Fullerton, California.

Ames Double Acting Pumps Complete, head, piping, rods, cylinder 20 inch and 30 inch capacity, nothing finer made, also Bulldozer single acting 20 inch stroke, 10 per cent off our regular price this month only. Write Demmitt Co., 120 N. Main, Los Angeles.

For Sale—Good portable bean thresher, a practical outfit in good running condition. Am out of bean business and will sacrifice. Could be used stationary. Frank Goodall, Owensmouth.

For Sale—Case tractor in good condition, or will trade for Dodge car, equal value. Also pump jack, 60 feet of 9 in. O. D. casing, 4 foot cylinder and pump rods. L. E. Raftery, Owensmouth, California.

For Sale—Bean Tractor in first class condition. Used about forty days. Engine has just been overhauled. Price \$600.00 cash. J. N. Thille, Santa Paula, California.

For Sale—Rebuilt Windmills Tanks, Pumps, Irrigating Pipe Brass Cylinders, Rods Guaranteed to do as much work as new ones at half the cost. Why pay more? For descriptive prices write Demmitt Co., 120 N. Main, Los Angeles.

For Sale—New Beeman Tractor—does the work of one horse. Cost \$450.00, sell at 10 per cent discount. No use for it; have team. Deliver anywhere in Southern California. L. O. Alles, Carlsbad, California.

For Sale—Samson Tractor, Model S.25 G. M. C. 1918, worked 50 days, with 14 inch extension wheels, perfect condition, for \$800.00, F. O. B. Los Alamos. J. de Longueuil, Los Alamos, California.

For Sale—Holt 45 Tractor, two engine plows and tank wagon, all in good condition. Price \$2500.00. Will trade for heifers. W. R. Mayo, Compton, California.

Want Ford or Dodge Auto offer in exch. Large Victrola and 100 selections, cost \$400, also \$300 Regina music box. Write 632 Britannia, Los Angeles.

For Sale—Calf-way milking machine, De Laval separator, James Mills Orchards Corporation, Hamilton City, California.

PERCHERON HORSES

For Sale—One pure blood registered Percheron stallion. Ten years old, will work. Guaranteed sure foal getter. Price reasonable, cash. Russell Brothers, Triunfo, California, Ventura County, 40 miles from Los Angeles on Ventura Highway.

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Fairview Ranch

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The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Rhubarb and Fruits

Kindly advise me as to best time for transplanting rhubarb. What fruits may be raised successfully at an altitude of 2,500 feet where it frosts late in May? — Subscriber, Placerville.

The best time for transplanting rhubarb is April and May, but on a small scale, if care be given, the work may be done at any time. The list of fruits suitable for such elevation near Placerville is a long one. The writer has seen apples, cherries, figs, grapes, olives, peaches, pears and plums growing at 2,500 feet in El Dorado County. Inquiry in the neighborhood will reveal varieties which do best under the local conditions.

Old People's Home

In addition to the names given in last week's Cultivator we give the following located in Los Angeles: Mission Rest Home for the Aged, 526 San Fernando Road; Wm. Stritt Home for the Aged, Altadena; Hillside Rest, 1563 Fairmont Way; Southern California Home for Aged Women, 215 E. Ave. 57; St. Patrick's Home for the Aged, 4060 W. Washington; and Loma Linda Home, Loma Linda.

Potatoes All Tops

Kindly give us light on the potato situation. I, as well as my neighbors, are confronted with a wealth of potato vines, foliage and blossoms, but either a very few undersized or more frequently a total absence of potatoes, the roots being almost bare of growth. Would we better plow down the entire field and put in a crop of beans, or is there still hope of potatoes forming by the end of summer? This condition prevails almost throughout the entire region, regardless of methods or seed used in raising them. — Subscriber, Fullerton.

This trouble is very prevalent this year and quite baffling as it is being experienced by some of our best commercial growers. The consensus of opinion by experts is that it is almost wholly due to climatic deficiencies of the season. We have had no potato weather—no summer—up to July. It is extremely doubtful if a crop can be obtained as in all potato troubles when tops are grown well into the season no second growth can be made in the crop beneath.

Weed Pest Control

Who has charge of the control of Johnson grass in San Fernando Valley?—Subscriber, Owensmouth.

H. J. Ryan, horticultural commissioner of Los Angeles County, has jurisdiction over weed pest control in the San Fernando. We doubt not, however, that this office, like that of many other horticultural commissions of the state, has used so largely of its appropriation in the squirrel control campaigns that an active fight has as yet not been taken up on Johnson, Bermuda or other weed pests. However, any section which wishes cleanup will doubtless have the assistance of the horticultural commissioner either in Los Angeles or other counties of the state.

Tomato Blight

Will you kindly tell us where information may be secured on the treatment or prevention of tomato blight? —Subscriber, Moneta.

This has been answered or rather the information given in former Cultivators that there is practically no cure for this disease once established. Disease free seed in disease free soil is practically the only preventive. Once the vine shows the wilt it is practically dead. One who wishes to look up more fully on the subject may write Agricultural Experiment Station, University of California, Berkeley, and ask for "Tomato Diseases in California," Bulletin 239.

Torrens Titles

Is the Torrens title law in operation, and how can one get in touch with it?—Subscriber, Chula Vista.

The Torrens title is proving effective and economical though more expensive to secure than was at first thought it would be. We believe the federal land bank recognizes the Torrens title, which should be best proof of its worth. This is not the case, however, until 12 months have elapsed from time of filing in the county. However, this question has been referred to our attorney and will be answered more fully in his department another week.

Walnuts Dying

I planted a Franquette walnut tree in April, 1919, and it seemed to be doing well until this spring when it put out a few buds which dried up. The trunk of the tree seems to stay green. The tree has good soil and climate. Can you suggest any reason or remedy for this condition?—Subscriber, Elk.

Presumably this is winter killing which may have been caused by frost in early fall before wood was fully matured, or it may have been from lack of fall irrigation and the trees were unable because of dry condition of the soil to secure sufficient moisture to perfect buds growing at that time for next season's growth. More complete information can be had by writing Agricultural Experiment Station, University of California, Berkeley, and asking for Circular 216.

SUNFLOWERS FOR SILAGE

Sunflower silage has much the same feeding value as corn silage, according to the few analyses that have been made at the North Dakota agricultural college and short feeding experiments made in New York and Montana. The trials made at the Williston and Dickinson substations indicate that one can expect one-fourth to one-half heavier yields from sunflowers than from corn. Dr. Walster of the North Dakota agricultural college states that mammoth Russian or Giant Russian is probably the best variety, but the Black Beauty and White Beauty are also good. The seed costs 18 to 20 cents per 100 pounds. It takes five to seven pounds per acre. It can be sown with the corn planter. If the land is clean, seed in rows; if weedy better plant in hills and cultivate both ways. Sunflower seed can also be sown with the grain drill, closing up some of the holes so as to sow in rows 36 to 42 inches apart.

Cultivate as for corn. Cut for silage when from one-half to three-fourths of

the seed is in the late milk or early dough stage. Use corn harvester. All reports indicate that sunflowers can stand more cold than corn in both spring and fall.

EGGS MARKETING AT CREAMERIES OR CHEESE FACTORIES

A new business venture for the rancher is the marketing of surplus eggs and poultry through the creamery or cheese factory. As a rule not all creameries are equipped for the new business, but those which have engaged in it find it very profitable. A systematized business of this sort improves the quality of the products and greater financial returns are made.

This plan of marketing eggs and poultry is highly endorsed by the authorities.

THE MILK COW LEADS THE PROCESSION

In comparison with all other classes of farm animals which produce human food the farm cow that gives milk stands first. On January 1, 1920, the good old milk "bossy" of the farms of the United States gave a total valuation of \$2,022,000,000. This enormous figure excelled the total value of all other cattle.

In 1915 the average price paid for a milk cow was \$58.25, and in 1919 the price increased to \$91.95, or a gain of 58 per cent in five years.

News has come from England of the death of Edwin Cawston, who established large ostrich farms in California and Arizona.

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The cost per egg is materially lowered by feeding P. C. A. Hulled Barley—treated by a special process to retain protein values. P. C. A. Hulled Barley outranks wheat in producing eggs at a low unit cost.

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Home of King's Big Ben, where he is siring those early developing big type Poland Chinas that are ready for the market at 6 mo. They have size, bone, quality and are from the easy feeding families.

W. Bernstein

Hanford, Cal.

The Cultivator Patterns



BE SURE TO SEND SIZE

3276-3257. A Dressy Dress for the Matron. Price 20 cents. Waist 3276 cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 3257 cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. A medium size will require $1\frac{1}{4}$ yards of 40 inch material. The width at lower edge is $1\frac{1}{4}$ yard. Two separate patterns, 10 cents for each pattern.

3273. A Pretty Dress. Cut in 5 sizes: 4, 6, 8, 10 and 12 years. A 10 year size will require $2\frac{1}{4}$ yards of 27 inch material for the guimpe, and 3 yards for the dress. Price 10 cents.

3277. A Popular House Dress. Cut in 7 sizes: 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A 38 inch size requires $6\frac{1}{4}$ yards of 36 inch material. Price 10 cents.

3269. Girls' Dress. Cut in 4 sizes: 4, 6, 8 and 10 years. A 6 year size will require $3\frac{1}{4}$ yards of 38 inch material. Price 10 cents.

3253. A Becoming Dress. Cut in 3 sizes: 16, 18 and 20 years. A 16 year size will require $4\frac{1}{4}$ yards of 44 inch material. The width of the skirt at lower edge is $1\frac{1}{4}$ yards. Price 10 cents.

3270. Girls' Blouse and Skirt. Cut in 4 sizes: 8, 10, 12 and 14 years. A 12 year size will require 6 yards of 36 inch material for the blouse and skirt of one material. The skirt alone requires 3 yards of 36 inch material. Price 10 cents.

3114. Ladies' House Gown. Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42, and Extra Large, 44-46 inches bust measure. Size Medium requires $5\frac{1}{4}$ yards of 36 inch material for garment in full length, and $4\frac{1}{4}$ yards for sack length. Price 10 cents.

3271. Child's Dress. Cut in 5 sizes: 1, 2, 3, 4 and 5 years. A 2 year size will require $2\frac{1}{4}$ yards of 36 inch material. Price 10 cents.

CATALOGUE NOTICE

Send 15 cents in silver or stamps for our UP TO DATE FALL AND WINTER 1920-1921 CATALOGUE, containing over 500 designs of Ladies', Misses' and Children's Patterns, a CONCISE AND COMPREHENSIVE ARTICLE ON DRESSMAKING, ALSO SOME POINTS FOR THE NEEDLE (illustrating 30 of the various simple stitches), all valuable hints to the home dressmaker.

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PATTERN DEPARTMENT
California Cultivator
Los Angeles

Household Department

A BAND IS SUCH A BRAVE, BRIGHT THING

By Nancy Byrd Turner

A band is such a brave, bright thing,
With tassels tossed, and burnished brass,
And music quick and fluttering—
I love to see one pass.

Sometimes it sounds for turning wheels,—
A circus coming into town,—
And then the tune gets in my heels
And shakes them up and down.

Sometimes it sounds for marching men,
With cry of bugles in the street,
And fair flags blowing free—and then
I cannot hold my feet.

I follow, follow on and on;
I let it lead me where it will;
And when the last clear notes are gone
Somehow I hear them still.

CONTACT WITH THE ENEMY

By Russell Gordon Carter in
Youth's Companion



UVIGNY had been taken. After a terrific artillery preparation the Americans had gone over early that morning with the French on the right and left, and, although the cost in lives had been heavy, the soldiers of the small but swiftly growing American army had shown once again their value under fire. The American front line extended roughly two kilometers beyond the captured village and then curved backward on both sides of the sector where the French had been stopped. Heavy machine gun fire could be heard in the distance; but in front of the American line there was not a sign of the enemy except harassing shell fire and an occasional scout plane.

Private Dick Ellis of the battalion scouts lay on his side in an open field and with the bent lid of his mess kit scooped out the earth beside him. Round him other men were similarly engaged; some dug with their intrenching tools, some with bayonets. Their faces, bronzed by the sun of France and flecked with mud, showed the ordeal that they had been through during the last few days.

"I'm dead tired," Dick said to himself; "but I'll sleep better when I get this hole dug."

He looked up as a runner from the rear reported to the lieutenant in command, who had established headquarters in a shell hole not far behind Dick's position. A few minutes later came the voice of his sergeant:

"Hey, Ellis, you and Carlson and Wallace!"

When the three men had assembled, the sergeant explained. "We've got to go ahead and establish contact with the enemy—find out where his front line is and his machine guns. Ellis, you take the left and head for that strip of woods over there. Wallace, you take the right, and, Carlson, you take the center with me. Report back here as soon as you find anything."

Dick returned to the hole he had been digging, swung his equipment and started for the strip of woods almost a kilometer away. He leaned far forward as he walked, trailing his rifle, and took advantage of each rise of ground to screen him from view.

High explosive and gas shells were dropping every few minutes in and around the ville of Juigny on the crest of the hill behind him. As Dick glanced back he could see the clouds of dirt and black smoke that went up whenever a shell landed in the ruined village. On the right the French seventy-fives were active, and far to the left anti-aircraft shells were bursting high in the sky.

The ground that he passed over was cut up by artillery fire; long belts of machine gun bullets and other bits of German equipment lay scattered about. Reaching the strip of woods without incident, he proceeded through it with eyes and ears alert. The strip was perhaps one hundred meters wide where he entered, though it widened out more to the left. Pausing at the farther edge, flat on his stomach, he pushed his rifle out in front of him and scrutinized the country beyond.

It was rolling country, characteristically French, with alternating squares of woods and farm land after the fashion of a patchwork quilt. The day was gray, and rain threatened. In less than two hours he would be able to see almost nothing; even now

he could not see plainly for any great distance.

Drawing his field glass from beneath his slicker, he regulated the sights and studied the landscape. On the edge of the woods that covered the hill in front of him he thought he detected a slight movement. He rested his eyes and then looked again, but he could not be sure.

A little mound of earth lay directly in front of him. If he were to crawl out to that, he might get a better view. He cautiously crept forward, keeping his face to the ground as much as possible, for he felt sure that there were Germans in the woods beyond, and he was within rifle fire of the spot. When he reached the mound of earth he looked at the strip of woods that had sheltered him, and for a moment he wished he had not left it. Then he took up his field glass again.

Yes, there were Germans there. "One, two, three," he counted. They seemed to be digging. Some distance to the left of the group he made out a fourth.

"The whole Boche front line," he thought. "I'll bet it follows the edge of that wood away to the left, too."

He drew a piece of soiled paper from his pocket and with the stock of his rifle for a rest made a sketch of the country, indicating the information he had gained and estimating the distance to the enemy woods at three-fourths of a kilometer from his position. As he was about to fold up his sketch a puff of wind sent it out of his fingers. He grasped for it, recovered it and put it into his pocket.

"Now, to get back with this and give the artillery something to fire at," he said to himself as he carefully turned toward the little strip of woods that lay about fifty meters away.

Suddenly a machine gun sounded,—put, put, put!—and three bullets cracked over his head. He turned and threw himself back into his original position, with his face flat in the dirt and his arms close to his sides. His heart beat wildly. Again the machine gun sounded—a burst of six shots, followed immediately by six more. Its aim was lower, and several of the bullets, striking the earth ahead of the boy, threw dirt into his face. For several minutes Dick lay as if frozen to the ground. So slight was the protection that the mound of earth afforded him that he feared to move a muscle. After a while he began to scratch at the loose dirt with his fingers until he had succeeded in lowering his head and shoulders a few inches. Then he wriggled out of his pack and reached for his mess kit cover. Again came the firing. One of the bullets struck a stone ahead of him, ricocheted and, with a screech that sent a chill down his spine, went whirling end over end into space.

The firing had come from the woods directly in front, where he had seen the Germans. When it ceased, another gun on his left began.

"I'm in a fine fix," he said to himself, as he plied his rough intrenching tool. "Two Boche machine guns with a clear field of fire. They spotted me when the wind blew that paper out of my hands."

When he had strengthened his defense, he lay quiet for almost fifteen minutes. Both guns were silent. He rubbed his helmet in the damp earth, readjusted it on his head and then looked up cautiously. Out in front, some distance away, lay the twisted muzzle of a machine gun that had evidently been struck by a heavy piece of shrapnel. It lay on the edge of a short trench that the Germans had abandoned for their stronger position on the hill. The ground hereabouts was also strewn with various pieces of equipment, which bore witness to the speed with which the Germans had retreated that morning.

Dick turned his eyes toward the strip of woods. It would soon be dark. Why could he not crawl back to the protection of the woods under cover of darkness before they sent a patrol out after him?

A fog was settling over the country. It was already thick and heavy in the little valley that lay between Dick and the two machine guns, and with the fog darkness was coming on rapidly. Dick shivered as he lay in his cramped position. With hope for

a fighting chance to escape, he waited only for a favorable moment.

As he waited, the fog changed to a fine drizzle. He raised his head; he could scarcely see the line of woods that lay in front of him.

"Now's the time," he said to himself. "If I can only reach that little strip of woods!"

He raised his shoulders and on hands and knees turned toward the coveted strip of woods. A quick dash and he would be safe. He drew his knees up under him. His heart beat like a trip hammer. Suddenly out of the mist and darkness came a succession of flashes. He threw himself flat as the bullets cracked close to his head. Then all was silence. It was the machine gun on the left. He waited. The other gun fired a short burst, and a moment later the gun on the left opened up again. The bullets were not cracking so close to him as they had done before; but each burst was aimed to cover the stretch of ground between the boy and the strip of woods. The Germans had anticipated his plans.

He bit his lips and trembled in spite of himself. "Wonder how many they'll send after me?" he thought as he gripped the stock of his rifle a little tighter.

Night had set in, and the drizzle had increased to a rain that soaked him to the skin. Mingled with the intermittent fire of the two machine guns came the dull boom of the heavy artillery, low and ominous. To the right a yellow flare went up, flickered fitfully for a few minutes and then went out.

Dick clenched his fingers until the nails dug into his flesh, then like a flash he threw himself into a sitting posture. "They won't get me!" he exclaimed. "Not without a fight!" Adjusting his bayonet to the end of his rifle, he crawled forward directly toward the enemy line. He moved through the wet grass over the shell torn country in the direction of the gun in front of him. As it flashed he could hear the bullets speed just above his body. In a few minutes, which seemed like hours to him, he came to the old trench where he had seen the twisted barrel of the machine gun. Dropping into the trench, he waited. The trench was about five yards long and had apparently been used merely as a machine gun position.

"They're sure to send a patrol after me," he thought, "and then—"

(Continued next week.)

COTTAGE CHEESE FOR HOT SUMMER DAYS

Cottage Cheese Salad

Mix thoroughly one pound of cheese, one and one-half tablespoons cream, one tablespoon chopped parsley and salt to taste. First, fill a mold with cold water to chill and wet the surface; line the bottom with waxed paper, then pack in three layers, putting two or three parallel strips of pimento between layers. Cover with waxed paper and set in a cool place until ready to serve; then run a knife around the sides and invert the mold. Cut in slices and serve on lettuce leaves with French dressing and wafers. Minced olives may be used instead of the parsley, and chopped nuts also may be added.

Cottage Cheese Rolls

To be used like meat rolls. A large variety of rolls, suitable for serving as the main dish at dinner, may be made by combining legumes (beans of various kinds, cowpeas, lentils, or peas), with cottage cheese, and adding bread crumbs to make the mixture thick enough to form into a roll. Beans are usually mashed, but peas or small Lima beans may be combined whole with bread crumbs and cottage cheese, and enough of the liquor in which the vegetables have been cooked may be added to get the right consistency; or, instead of beans or peas, chopped spinach, beet tops, or head lettuce may be added.

Boston Roast

One pound can of kidney beans or equivalent quantity of cooked beans, one-half pound cottage cheese, bread crumbs, salt.

Mash the beans or put them through a meat grinder. Add the cheese and bread crumbs enough to make the mixture sufficiently stiff to be formed into a roll. Bake in a moderate oven, basting occasionally with butter or other

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will make home-made rootbeer easily and economically. Get a 25c bottle from your grocer. A cake of yeast and some sugar—that's all. One bottle makes 80 glasses

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fat, and water. Serve with tomato sauce. This dish may be flavored with chopped onions, cooked in butter or other fat and a very little water until tender.

Pimento and Cottage Cheese Roast

Two cups cooked Lima beans, one-fourth pound cottage cheese, five canned pimentos chopped, bread crumbs, salt.

Put the first three ingredients through a meat chopper. Mix thoroughly and add bread crumbs until it is stiff enough to form into a roll. Brown in the oven, basting occasionally with butter or other fat, and water.

Cottage Cheese and Nut Roast

One cup cottage cheese, one cup chopped English walnuts, one cup bread crumbs, two tablespoons chopped onion, one tablespoon butter, juice of half a lemon, salt and pepper.

Cook the onion in the butter or other fat and a little water until tender. Mix the other ingredients and moisten with the water in which the onion has been cooked. Pour into a shallow baking dish and brown in the oven.

Cheese Sauce

One cup milk, one tablespoon cottage cheese, two tablespoons flour, salt and pepper to taste. Thicken the milk with the flour and just before serving add the cheese, stirring until it is melted. This sauce may be used in preparing creamed eggs or for ordinary milk toast. The quantity of cheese in the recipe may be increased, making a sauce suitable for using with macaroni or rice.

BALTIMORE RELISH

Two quarts green tomatoes cored, two quarts ripe tomatoes peeled, cored and chopped fine, one quart shredded cabbage, 12 onions sliced thin, four green peppers, four red peppers sliced thin.

Mix altogether with half cup salt, let stand over night. In the morning drain well and add the following materials:

One and one-half quarts good vinegar, two cups sugar, one-fourth cup whole mustard, one-half cup grated fresh horseradish, one tablespoon celery seeds, one teaspoon coriander seed, one-half teaspoon cayenne, salt if necessary.

Cook half hour and fill small sterilized jars with the relish. Adjust rubbers and the covers. Place filled jars in a kettle on a rack, allow slightly warmed water to come up half way on the jars; cover kettle and let the water boil ten minutes around the jars. Remove jars, tighten covers. Good inside of a week.

WHAT SHALL WE DO ABOUT IT?

By Larry Larrimore

What shall we do about it? Try with all our might. Our credit side will not stretch out. But our debit's out of sight. What shall we eat tomorrow? What shall we wear today? Has it come to "back to nature," Fig leaves, and a wisp of hay?

Lumber still is soaring. Water costs like sin. Machinery's out of sight. So how shall we begin? Enormous the cost of production; Alas, there is no redress. The things we sell are the same old price. Or else (is it fair?) they are less.

What shall we do about it? This way bankruptcy lies. Farmers, arise from your slumbers; Get busy and organize. Organize for a standard price. That shall squelch the profiteers. United we win, divided we lose—Who are the pioneers?

Farmers, repeat this little verse, Morning, noon, and night: "Let's organize, let's organize, Let's up and do things right. Let's organize, let's organize, Let's make H. C. L. ill; Let's organize, let's organize—Who'll organize? We will!"

LENTIL CROQUETTES

Take one pint of lentil pulp, one-half pint of bread crumbs (entire wheat preferred), three beaten eggs, two tablespoons of grated onions, one-fourth cup butter. Salt and pepper to taste. Mix ingredients together; cook in double boiler or steam until eggs are set. Chill, then form in croquettes. Dip in egg, roll in crumbs and fry in deep fat. To add one-half cup shredded English walnuts or pecans imparts a rich, delicious flavor.

COSTS OF ELECTRICITY

The following data may convince some folks that certain luxuries are within their reach. This is based upon electricity costing ten cents per kilowatt hour and the unit of time is the hour: Coffee percolators, 6 inch stove, 1 to 5 cents; curling iron heaters, 3 cents; flat iron, 3 pound, 2 3/4 cents; flat iron, 6 pound, 4 3/4 cents; foot warmers, 1/2 to 4 cents; nursery milk warmers, 5 cents; ovens, 12 to 15 cents; ranges 3 heats, 4 to 6 people, 10 to 44 cents; range, 3 heats, 12 to 20 people, 20 to 75 cents; shaving mugs, 1 1/2 cents; waffle irons, 2 waffles, 7 1/2 cents.—L. F. Foltz, Colorado Agricultural College.

CHEW IT LONGER

Is the cost of the daily meals worrying you? Then spend twice the time in chewing your food. You will feel better, be more satisfied, and will eat less. Most people are content to bolt down their food and leave nature to do what they should have done themselves. Nature becomes overworked and soon calls a halt. Then comes a bad stomach, poor digestion, peevishness, excitability and a general weakening of productive powers. No person can do justice as a producer unless he is in good health, and good health can only be maintained by a proper mastication of food.—Lake County Bee.

TO THE ACCOMPANIMENT OF SOBS

Wayne B. Wheeler, national counsel for the anti-saloon league, was talking to a New York reporter about a judge.

"The judge," he said, "has misread the law—innocently misread it, of course. The old fellow is like the greenhorn nurse from Ballyunion."

"A young matron said to her Ballyunion nurse one afternoon:

"My goodness me, Bridget, what's the matter with Willie's face? Has he been run over, or something?"

"None, 'ain't so bad as that," says Bridget. "It's only a bad boomp he got, mum. Yez told me, mum, I was to let him play on the pianny, and he was slidin' on the top of it when, bliss his little heart, he slid too fur, mum, and come a cropper!"—Detroit Free Press.

ANOTHER ONE

When the train stopped at a little station in the South a tourist from the North emerged and gazed curiously at a lean animal rubbing itself against a scrub. "What do you call that?" he asked a native.

"Razor back hawg, suh."

"What's he rubbing himself against the tree for?"

"He's stroppin' hisself, suh, jes' stroppin' hisself."—Everybody's Magazine.

THAT SETTLED THAT

The ex-buck found the menu card at the fashionable restaurant almost as baffling as some he'd perused in France. Finally he summoned a waiter.

"Where are pork and beans on here?" he asked.

The waiter indicated. "Well," said the relieved patron, "bring me everything above and below that line."

NOT HER IDEA OF HEAVEN

The conversation around the long dinner table ended, as do most conversations nowadays, with the subject of spiritualism. The guests and the members of the family gave their opinions as to whether or not the dead could communicate with the living, but it remained for "sweet sixteen" to present the only original thought on the subject.

"It's hard enough now for me to keep up my correspondence," she said. "When I die I want to rest."—New York Sun.

If an S and I, and an O and a U,
With an X at the end spell Su,
And an E and a Y and E spell I,
Pray what is a speller to do?
Then if also S and an I and a G
And a H E D spell side,
There's nothing much left for a speller to do
But go and commit slouxeysighed!

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When writing advertisers, mention the Cultivator.

Los Angeles Markets

Los Angeles, July 7, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 62 cents.

Dairy Exchange prices last week on extras:

	June 30	July 1	2	3	5	6
'20 ... 60	62	62	62	62	62	62

CHEESE

Brokers' prices:

California flats, 31 per lb.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 50 per dozen; case count Prod. Exch. closing price, 48.

per dozen; pullets, Produce Exchange closing price 44 per dozen; pewee pullets, 31. Dairy Exchange prices last week on extras:

	June 30	July 1	2	3	5	6
'20 ... 48	50	50	50	50	50	50

POULTRY

Price to producers: Hens, lt., 18; heavy, 24; colored, 28; broilers, 26@30; roasters, 28; old roosters, 14; fryers, 32; ducks, old, 17; ducklings, Pekin, 3½ up, 20; others, 17; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47; pigeons, doz., 1.00.

Belgian hares, live, 16; old, 9.

LIVESTOCK

Los Angeles, July 6 — Weighed and delivered off cars without food or water: Hogs (hard-grain, 125 to 175 lbs., 15.50; 175 to 225 lbs., 16.50).

Cattle (on foot, gross weight)—Steers, good, 9.50@10.00; medium, 9.00@9.50; cows, good, 8.50@9.00; medium, 8.00@8.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.50.

Sheep—Ewes, 8.50@9.00; lambs, 11.50@12.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, July 6 by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

New stock: Supplies liberal, market steady: Local Early and White Rose, No. 1's, mostly 2.40@2.60; No. 2's, 1.00@1.50 per lug, according to size; 100 lbs., sacked, No. 1's, 6.75@6.25.

Carlots: Supplies liberal, market steady. Sales to jobbers: New Stock: White Rose No. 1's, sacked, mostly 5.50@5.75; lugs, 2.20@2.35.

Onions: Supplies of Wax, liberal; Yellow, light; wide range in quality; some badly decayed; demand and movement slow; market steady. New stock: Coachella Valley: Wide range in prices; Bermudas, best, 1.25@1.50 per crate; lugs, 60@1.00; Crystal Whites, per crate, 1.10@1.40; lugs mostly 60@90; sunburned and decayed stock at all prices; poor stock cleaning up. Stockton Yellow, cwt., sacked, 1.50@1.75.

Carlots: Demand and movement slow, market steady. Coachella Valley: standard crates Yellow Bermudas and Crystal Wax sales to jobbers: best, 1.00@1.25; poorer, low as 75; sacked Yellow Bermudas, mostly 1.50@1.75 per 100 lbs. Stockton: sacked Yellows, sales to jobbers, mostly 1.25@1.35 per 100 lbs.

Garlic: lb., 25@30.

VEGETABLES

These are the actual prices obtained July 6 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Asparagus: Supplies liberal. Market steady. Northern, lb., 14@15.

Beans: Ky. Wonder, 3@5. Beets: Doz., 40@50; sk., 2.25@2.50. Cabbage: Supplies moderate, market strong, movement good, wide range in quality. Best mostly 2½@3½ per lb., per field crate, best 2.75@3.25.

Carlots: Supplies of shipping stock light. Demand good, movement limited, market firm, few sales. Carloads f. o. b. usual terms. Cannonball and Winningstadt, per ton, mixed cars, 40.00@50.00.

Carrots: Doz., 40@45; sk., 2.40@2.75. Corn: Local, 1.25@1.50 per box. Cucumbers: Market steady; local, best, 50@75.

Egg Plant: Best, lb., 8@15. Lettuce: Local, cr., best, 75@85.

Carlots: Few shipments, mostly on consignment. Quality generally poor, market steady; few sales mixed cars mostly 1.75 per crate.

Peas: Northern, lb., 9@10. Spinach: Doz., 20@30; lb., 2. Squash: Local summer, large lugs, 60@80; flats, 50@60.

Tomatoes: Imperial and Coachella, supplies moderate; market steady; cr., best, 2.25@2.75. Turnips: Per dozen, 30@40; per sack, 1.00@1.25.

DECIDUOUS FRUITS

These are the actual prices obtained July 6 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apricots: Local lugs, 1.00@1.30. Bananas: lb. 11. Blackberries: Supplies light; per crate, mostly 3.50@4.00.

Cantaloupes: Market weak; supplies heavy; quality and condition, wide range. Imperial Valley: Standard, best, 2.50@3.25; Ponies, 2.25@2.75; flats, 1.25@1.40.

Carlots: (Direct wire from Brawley). Temperature for last 24 hours hot. Haulings heavy, expect light shipments by Saturday. Demand moderate, quality and condition wide range. Too few sales to establish a market. Shipments Saturday, July 3, 206 cars; Sunday, July 4, 174 cars; Monday, July 5, 151 cars.

Cherries: Supplies liberal; market firm; various varieties, best, mostly 16@20 per lb.; poorer, low as 12. Gooseberries: lb., 10@12. Grapes: Thompson Seedless: lb., 12@15.

Peaches: Northern, lb., 5@7; local, 3@5. Plums: Best, lb., 5@8; poorer, low as 3. Raspberries: cr., 3.75@4.50. Strawberries: cr., 3.25@4.25. Watermelons: Supplies liberal; lb. 1½@2½.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.25@2.75; special packed brands, 3.25@3.50.

Lemons: Market unsettled, wide range in prices. Local Stock: packed, 3.75@4.25; loose, 1.25@2.25.

Oranges: Supplies liberal, market firm. Valencias: packed special brands, 12¢/s, 5.50@6.00; 150's and 176's 5.75@6.25. Local packed, mostly 4.25@4.75; larger sizes, low as 3.00. Packing house culls, 1.00@2.00 per lug.

HONEY

Old honey practically exhausted, new supply light; few sales; demand good; movement limited. Carloads f. o. b., usual terms. New crop orange, 21; Hawaiian lt. amber, 17½. Old crop white amber sage, 19; wh. alfalfa, 19½. Beeswax, 42.

BEANS

California Lima Bean Growers Association reports under date of July 3:

There is very little new to report in the Lima and Baby Lima bean market situation. Very little buying has been done during the past few days, the dullness extending to all varieties of beans. The bean trade generally seems to anticipate an improved buying demand and higher market during July and August and when the stock of Limas sold for July shipment have gone, very little will remain in California. The weather thus far this season in Southern California has been generally cool and foggy and therefore favorable for Limas and Baby Limas. A considerable part of the acreage planted to Lima beans is not under irrigation and having only a limited amount of moisture can stand but very little hot dry weather, but the crops are certainly looking very well now and with continuation of favorable weather extending until harvest time a considerably better yield than last year would seem to be assured.

HAY

Alfalfa Growers of California, under date of July 7, says:

Market steady with prices approximately as follows: Choice alfalfa, 40.00 per ton, No. 1 dairy, 36.00; standard dairy, 32.00; stock alfalfa, 29.00.

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay: Tame Oats 25.00@27.00 Barley 18.00@24.00 Alfalfa 26.00@32.00 Barley straw 8.00@10.00

GRAIN AND FEEDS

A little weaker, especially in spot stuff. There is a great range in price because of vast difference in quality.

Milo: Good bright, Imperial milo is commanding 3.35 and Eastern milo is running as low as 2.80.

One car Kansas bran sold on track L. A., July 6, \$61.00 ton.

Wheat: Utah-Idaho Milling, 6.00; feed wheat is running around 4.45@4.55.

Corn: Sacked, Yellow, 3.85@3.91½.

Price bid local grain exch. cwt. July 6:

General trend of market downward on barley.

Barley: 2.77½@2.85.

Milo: Carlots, 2.75@3.35; Eastern, 2.78½.

Wheat: Mixed feed, 6.05@6.35.

San Francisco Markets

San Francisco, July 6, 1920.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras 61

Prime Firsts 59½

CHEESE

Dairy Exchange quotations:

Jack, full cream 23@26

Cal. Y. A. 35

Ore. Trips 32

Cal. Flats 34½

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 51½

Firsts 47

Extra Pullets 46½

Undersized 31

POULTRY

Wholesale prices are:

Leghorn, 23@25; large, 37@38; roosters, young, 45@50; old, 18@20; broilers, 30@35; fryers, 33@35; turkeys, live, 37@40.

Ducks: Indian Runner, 21@23; Pekin, 22@25. Squabs, 55@60; pigeons, doz., 2.35@2.50.

Belgian hares, live, 15@17; Jack rabbits, dozen, 1.50@3.50.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 10@10½; do, 1,200 to 1,400 lbs., 9½@10; do, second quality, 7@8; thin, 6@7. Bulls and stags: Good, 3½@4; fair, 3@3½.

Cows and heifers: No. 1, 8@9; second quality, 6@7; common to thin, 2@4.

Calves: Lightweight, 10½@11; medium, 9@10; heavy, 8@8½.

Lambs: Milk, 11@11½; yearlings, 8@8½.

Sheep: Wethers, 8@8½; ewes, 6@6½.

Hogs: Weighing 100 to 150 lbs., 15; 150 to 225 lbs., 15½; 225 to 300 lbs., 15; 300 to 400 lbs., 14.

Virden Packing Company quotes prices on livestock, weighed and delivered off cars at its plant, South San Francisco, as follows:

Cattle: Good steers, 1,000 to 1,100 lbs.,

10@10½; top steers, 1,100 to 1,200 lbs., 9@9½; good heifers, 1,200 lbs. and over, market price; good cows and heifers, 7½@8; No. 2 cows and heifers, 6½@7; good bulls, 4½@5.

Calves: Light, 13@14.

Hogs: Top packer, hard and well finished, 100 to 150 lbs., 14½; 150 to 225 lbs., 15½; 225 to 300 lbs., 14½; over 300 lbs., 14; under 100 lbs., 13½.

Ewes: Full wool, 6½@7.

Wethers: Full wool, 7½@8.

Yearlings: 9@9½.

Milk lambs: lb., 10@11.

ONIONS

Onions: New reds, 59@75; whites, 75 cr.; green onions, 1.40@1.75. Garlic, new, 9@11.

POTATOES

River, cwt, 4.00@5.00; fy., 5.50; Garnet Chilli, 4.00@5.00.

VEGETABLES

Wholesale selling price: Asparagus: lb., white, 6@8; graded, 9@11.

Beans: lb., String, 4@6; Wax, 5@6.

Cucumbers: Eng., doz., 75@1.00; other, 75@1.25 per box.

Corn: Sack, 4.00@6.00.

Eggplant: Livingston, 10@12½; So., 5@10.

Okra: bx. 1.00@1.25.

Peppers: Bells, 15@20 for large, 5@8 for small; Chilli, 15@20.

Peas: lb., green, 2½@4.

Radish, 7@9 doz. bunches.

Spinach: lb., 4@5.

Squash: Summer, cr., 50@75; Sacramento, lug, 1.50@2.00.

Tomatoes: cr., 1.00@1.75.

DECIDUOUS FRUITS

Apples: Red Astrachan, Los Angeles lug, 1.25@1.50; wrapped, 2.00@2.25.

Apricots: Imperial Valley, Los Angeles lugs, 5@9 per lb.; 1.25@1.50 per crate.

Bananas: lb., 8@10.

Cantaloupes, Ponies, 1.75@2.25; standard, 2.00@2.75; flats, 75@1.35 box.

Cherries: Black, 1.50@1.75 per drawer; blacks, 6@12½ lb., according to quality; Royal Anna, lb., 12@16.

Currants: 45@60 dr.; 5.00@7.00 ch.

Figs: 65@80 for white and Brunswick per box of one layer; two layer, 1.00@1.25.

Gooseberries: lb., 5@7.

Loganberries: Red, dr., 35@50.

Peaches: boxes, 1.00@1.50.

Pineapples: Doz., 2.00@3.00.

Plums: Apex, 1.25@1.50 per crate; Beauty, 1.50@2.00; Climax, 1.50@2.00; Clyman, 1.25@1.50.

Raspberries: dr., 75@1.10; cr., 1.75@2.25.

Strawberries: Large, 75@1.00; small, 50@75.

Watermelons: Imperial Valley, lb., 2@4.

Honey Dew: cr., 2.00@2.50.

CITRUS

Box: Lemons, standards, 2.50@5.50; lemons, 1.25@2.00; grapefruit, 2.00@3.50; navel oranges, 4.00@6.00.

BEANS AND PEAS

California Bean Growers Association, San Francisco, July 3:

Quotations this date:

Large Whites 6.25@ 6.40

Small Whites 5.75@ 6.10

Pinks 6.30@ 6.50

Cranberries 6.75@ 7.00

Black Eyes 8.25@ 8.50

Red Mexicans 8.50@ 8.75

Red Kidneys 14.00@14.50

Bays 10.25@10.50

HOPS

1919 crop, 85@1.00 per lb. Prices to growers for 1920 crop, 65@80 per lb.

HONEY

Reported by Rafael & Wing:

Very little honey arriving. Not enough sales to establish prices. White orange offering in this market at 20@21. No change in wax. It is bringing from 40 to 42. From all indications, there will be a very good honey crop from the San Joaquin and Sacramento valleys. The sage crop in Santa Clara and San Benito counties is practically a failure. Some Honolulu honey offering, but not enough to affect the market.

GRAIN

Wheat: No quotations obtainable.

Oats: Red feed, 3.10@3.20.

Corn: California Yellow, 3.80@3.90 per cental; California milo maize, 3.45@3.50.

Barley: No. 1 feed, 3.05@3.15.

HAY

Under date of July 3, A. W. Scott Co. says:

Receipts past week 2,349 tons. San Francisco market continues lifeless although arrivals are heavier, demands still lighter. Quite a bit of last week's receipts was for government shipment and did not go into trade. New hay is now making what market there is as practically every wisp of old crop hay has been cleaned up throughout the state. The financial situation seems to be reflected in hay market conditions. The expressed determination of the banks to prevent speculative storing and to require the producer to carry his crop until bought for actual consumption has caused dealers throughout the state to hold off from their customary stock purchases. Alfalfa is dull and prices weaker. The unusual high prices asked, which are about double last year's figures, prohibit grinding and shipment of alfalfa meal to the Eastern market for the present—as a result this demand has dropped off and second cutting is offered more freely and at lower figures without buyers. The export market is very dull and quiet—buyers apparently waiting for a lower market.

We quote today wholesale prices in carload lots (old crop) as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.)

Old Hay:

Prices nominal. Old straw nominal.

New Hay:

Wheat hay (light 5 wire bales) 25.00@28.00

Tame Oat hay 25.00@28.00

Wild Oat hay 20.00@22.00

Barley hay 20.00@23.00

Citrus Markets

Los Angeles, July 7, 1920.

Almost every section is competing for the privilege of buying California oranges. New York quotations show prices range above \$8.00. The number of cars on track is light in all markets. F. o. b. quotations are ranging between \$5.00 and \$6.00. California cantaloupes are also selling along side of California oranges and commanding liberal prices.

The drop has been lighter than expected south of the Tehachapi and prospects are for a big crop. In Central California, however, the drop was quite severe because of the two hot days about the middle of June.

The lemon market is flat. The supply of foreign is increasing and is now approaching the 200,000 box supply, either on docks or due to arrive within 30 days.

Shipments

Shipments of oranges to date from Southern California since November 1, 1919: Oranges, 23,801 cars; lemons, 6,167; total, 29,968. To same date last season: oranges, 26,754; lemons, 7,501; total, 34,255. From Central California to date this season: Oranges, 5,374; lemons, 288; total, 5,662. To same date last season: Oranges, 3,711; lemons, 251; total, 3,962. Northern California this season: Oranges, 261; lemons, 23; total, 284. To same date last season: Oranges, 244; lemons, 2; total, 246.

AT THE AUCTIONS

July 1

New York: 13 or. Val. 7.45-10.95, Grapefruit, 2.00-2.75. Bloods 6.90-7.90, Seeds 7.15-7.75, St. Mikes 4.10, halves to 8.95 for full size.

Boston: 6 or., 6 lem. Val. 5.45-7.70, Nav. 7.45-8.10, St. Mikes 8.00-8.25, lem. 1.15-2.40.

Pittsburgh: 8 or., 2 lem. Val. 5.30-7.45, lem. 1.45-3.10.

Philadelphia: 4 or., 3 lem. Val. 6.70-8.20, lem. 2.00-3.75.

July 2

New York: 12 or. Val. 6.95-10.10, Bloods 6.45, Seeds 7.25-7.70, lem. 3.20.

St. Louis: 4 or., 6 lem. Val. 3.90-6.65, lem. 1.65-3.35.

Cincinnati: 4 or., 2 lem. Val. 4.15-6.75, lem. 2.15-3.45.

July 6

New York: 53 or., 1 lem. Val. 5.00-10.30, most of sales running between 7.00 and 8.00, St. Mikes 6.80-8.25, Bloods 6.50, Seeds 7.05-7.70, Grapefruit 1.85-3.35, lem. 4.10-4.70.

Pittsburgh: 8 or., 3 lem. Val. 1.70-7.50, Grapefruit, 1.00-2.30, lem. 95-1.85.

Boston: 13 or., 8 lem. Val. 5.40-8.50, St. Mikes, 7.25-8.05, lem. 1.05-2.95, most of sales running a little above one dollar.

Philadelphia: 7 or., 5 lem. Val. 6.05-9.45, lem. 1.10-2.35.

Baltimore: 3 or., 1 lem. Val. 6.00-7.75, lem. 90-95.

PROTECT FROM FIRES

Regarding fires which may be caused in operating power machinery or automobile vehicles, here is a section from the state law which will be of interest to operators:

"Section 1. Section 384 of the Penal Code is hereby amended to read as follows:

"Sec. 384. Any person who shall willfully or negligently commit any of the acts hereinafter enumerated in this section shall be guilty of a misdemeanor, and upon conviction thereof be punishable by a fine of not less than \$50 nor more than \$500, or imprisonment in the county jail not less than 15 days nor more than six months, or both such fine and imprisonment.

"Sec. 46. Operating or causing to be operated any gas tractor, oil burning engine, gas propelled harvesting machine or auto truck in harvesting or moving grain or hay, or moving said tractor, engine, machine or auto truck

is grown, then the weeds will be eradicated by the cultivation.

The crop being some small grain, either fall or spring, then the best method is to plow the ground early in the fall and let it lie for a week or two until the weed seeds have sprouted, then disk them under. This will kill the seeds and the fall crop may be planted in plenty of time to sprout before the frost stops its growing. If the crop is to be planted in the spring, then proceed as for the fall crop, but disk the ground in the spring just before planting the crop.

Then get the neighbors to do the same, for the weed seeds will blow from one place to another, so that the work of one will only be partly effective.

GOOD WHITEWASH FORMULAS

W. M. Russell, dairy inspector in Fresno, Madera and Kings Counties, reports the receipt of the following whitewash formula, which has been

DAIRY COUNCIL TO MEET AT HANFORD

Sam H. Greene, secretary-manager of California Dairy Council, announces the first annual meeting of the council at Hanford, July 14 and 15. Greene says it will be the greatest educational meeting that the dairying industry in California has ever held. The National Dairy Council and the United States department of agriculture will send representatives, as also will the state board of health, the state board of education and the University of California.

The dairying interests of Kings County and the people of Hanford have made large plans to entertain the convention. One of the principal features is an old fashioned barbecue at noon July 15. An attendance of 2,000 is being prepared for. The complete program will be made public soon.

ed one-third of the amount of peaches produced by the entire state of Georgia. Sullivan estimated that the value of the Sutter County peach crop this year would be about \$3,000,000 and said that the acreage production was also higher than any other section of the state, but with Fresno again a close second.

He stated that Sutter County also raised 75 per cent of the Thompson Seedless grapes in the Sacramento Valley, but declared he could not estimate the value of this crop as yet, although it would be considerable as much new acreage in Thompson Seedless was coming into bearing this year. Sutter County, he states, is also coming to the front as a prune raising county, and a considerable prune acreage is being planted each year.

WEATHER REPORT

San Francisco, California, July 3, 1920.

Stations	Rainfall			Temp.	
	Wk.	Season.	Norm.	Max	Min.
Eureka	.02	.02	.02	84	46
Red Bluff	.01	.01	.00	100	58
Sacramento	.02	.00	.00	90	54
San Francisco	.00	.00	.00	78	51
San Jose	.00	.00	.00	78	52
Fresno	.01	.00	.00	96	58
San Luis Obispo	.00	.00	.00	72	48
Los Angeles	.00	.00	.00	78	56
San Diego	T	T	.00	72	58



Gardeners Must Work Through Summer Days

in or near any grain or grass lands unless he shall maintain attached to the exhaust on said gas tractor, oil burning engine or gas propelled harvesting machine an effective spark arresting and burning carbon arresting device."

The enforcement of this law will compel every person operating a tractor in the grain or grass fields to install proper spark arresters or to run the risk of arrest, with imprisonment and fine in case of setting fire.

DO AWAY WITH WEEDS

No weeds to burn. The annual procedure of tearing the weeds away from the fences and out of the ditches can be dispensed with. Sounds good and is possible with care and thorough methods.

Grow some crop on every corner in the cultivated fields. If the field is not under cultivation then keep it well pastured. If it isn't planted to some crop or pastured, spend a day or two disking all the places where weeds are growing when they are two to three weeks old. Don't let them become mature and scatter seeds. These suggestions come from Bruce Cameron of Colorado agricultural college.

Cut all weeds away from the ditch banks and the fences when the first alfalfa is ready to be cut.

If the weeds are in the fields where other crops are to be grown, then different methods must be used. The best way to eradicate them is to plant the field to some perennial crop such as alfalfa or clover, then the weeds will be cut every year before they are mature, and if the ditch banks are kept free from weeds they will soon be eradicated. If some other crop, as corn, beets, potatoes or beans

highly recommended for use on the dairy farm:

Outside

To half a bucketful of unslaked lime add two handfuls of common salt and soft soap at the rate of one pound to 15 gallons of the wash. Slake slowly, stirring all the time. This quantity makes two bucketfuls of very adhesive wash which is not affected by rain.

Inside

Slake lime with water and add sufficient skim milk to bring it to the consistency of thin cream. To each gallon add one ounce of salt and two ounces of brown sugar dissolved in water.

The germicidal value of these two recipes may be increased by adding three-fourths pound of chloride of lime to every 30 gallons of the wash.

Buttermilk and Cement Paint

The following recipe is recommended as having given good satisfaction. Three pounds of cement are added to a gallon of buttermilk and thoroughly mixed. A larger quantity can be made by using the same proportions.

This paint must be applied soon after it is mixed, and stirred frequently; otherwise the cement will settle to the bottom. The paint will dry in about six hours, and turns water very effectively. It is adapted for outside use and on old weather-beaten surfaces. It does not give a very glossy finish and should not be used where a specially neat job is desired.

A carload of Lodi cherries sold in Minneapolis for \$8,150.

SUTTER COUNTY CLAIMS PEACH PRODUCTION HONORS

Sutter County leads the state, and incidentally the world, in peach production, with Fresno County a close second, according to a report from C. E. Sullivan, county farm adviser, who has the figures for the half year ending June 1 from all parts of the United States. Sutter County export-

Your Vacation

is a matter of importance
TO YOU

Where you will spend it this
year is of great interest
TO US

Mountains

and

Sea-Shore

are alike attractive
but differ in appeal.
WHICH CALLS YOU?

A Part of Our Business

is to assist you in finding a place to your liking; our ultimate desire is to take you there over our lines in comfort. ASK OUR AGENTS TO HELP YOU.

Pacific Electric Railway

RHUBARB---Wagner's Giant Plant Now

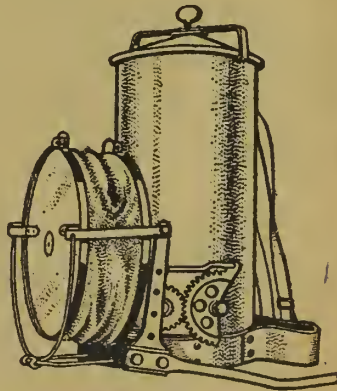
July is one of the best months to plant. Growers who planted last July and August have already harvested over 15 tons per acre netting \$1,000 eleven months from planting. For further information write J. B. WAGNER, Rhubarb Specialist, 1550 East Villa St., Pasadena, California.

GET RID OF THE SPIDER

The
American Beauty
Dust Sprayer



fifteen acres per day
in your orchard |



At Your Dealers
or Send to Us

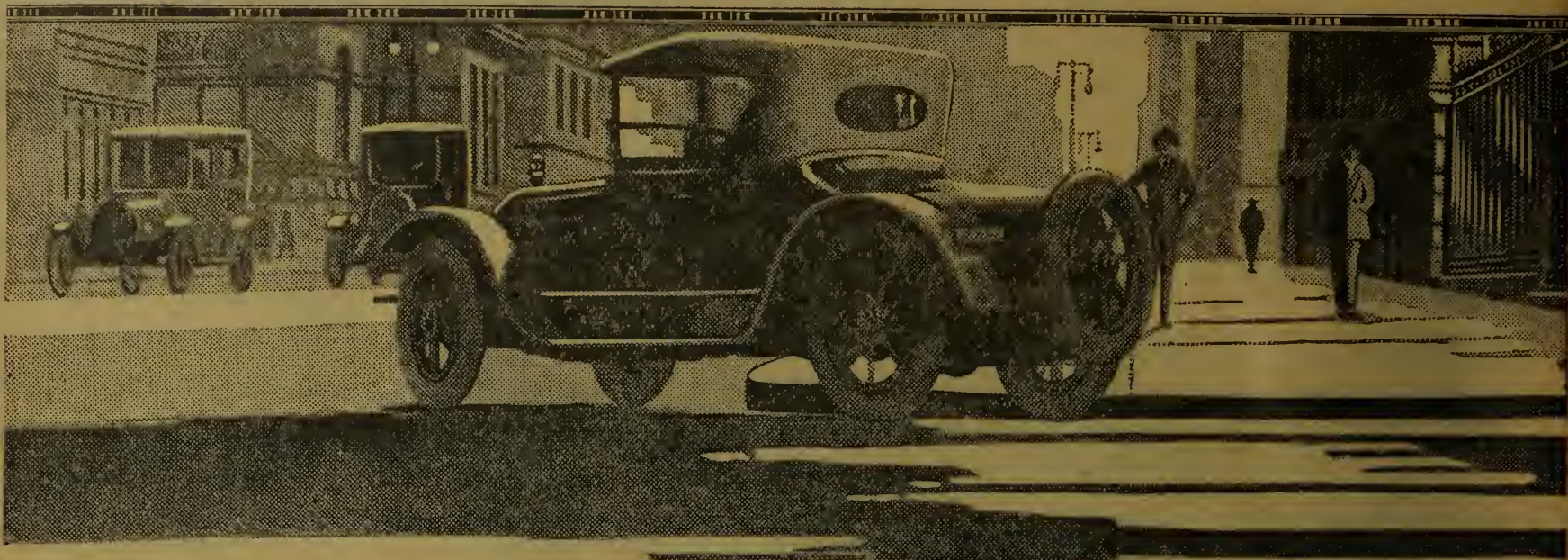
THE CALIFORNIA SPRAYER CO.

6001-11 Pasadena Ave. N. E.

Los Angeles

Five Million More Tires than last year

How much More Tire Economy



IT IS interesting to watch a car owner gradually becoming conscious of his tires. If his first tires don't give him what he has been led to expect, you will see him going back to the dealer for an allowance.

Finally he reaches the point where he prefers to shoulder his losses himself rather than argue the matter out with the dealer.

Meet him a year later and you will probably find him with two or three different makes of tires on his car.

* * *

There is less conviction in the minds of motorists about tires today than about any other subject connected with motoring.

The driver of the car in the foreground probably does not realize that by rounding the corner too quickly he may be taking as much as a thousand miles out of his rear tires.

A great deal of tire trouble can be avoided by slowing down to a reasonable speed in negotiating corners.

Despite all the claims, all the allowances, all the selling talks that are presented for the motorist's consideration, he goes along in his own way, seeking the tire that will give him the greatest economy.

Often you see him running foul of the irresponsible dealer.

But sooner or later he finds out that claims and allowances and selling talks can never take the place of performance.

* * *

More and more motorists are coming to realize that the

only way to tire economy is through *better tires*. Avoiding the dealer whose idea of business is merely to fill the eye or to supply a market and going direct to the *merchant who deals in quality*.

Never has the United States Rubber Company's policy of *quality first* been more thoroughly justified or widely appreciated than it is today.

Discounting, as it does, every temptation to force production in favor of a highly specialized, wholly standardized product.

* * *

Even when the production of U. S. Tires has reached two or three times its present figure, the test will still be not how many tires—but *how good*.

United States Tires

United States Rubber Company



Fifty-three
factories

The oldest and largest
Rubber Organization in the World

Two hundred and
thirty-five Branches

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

July 17, 1920

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No. 3

Typical of California: Under the Oaks on Conejo Ranch



Q and A

About Threaded Rubber Insulation

This trade-mark is branded in red on one side of the Still Better Willard — the only storage battery with Threaded Rubber Insulation.



Q. What is Threaded Rubber Insulation?

A. A storage battery insulating material made up of rubber pierced with thousands of tiny threads.

Q. How does it differ from other battery insulation?

A. Ordinary insulation is wood, cut in the form of thin sheets, and is neither as uniform nor as durable as Threaded Rubber Insulation.

Q. Why is insulation so important?

A. Because battery life depends largely on insulation and because any defect or weakness of insulation is quickly evidenced by buckled plates, short circuits, failure of the battery to hold its charge and so on.

Q. What has this insulation to do with battery shipment?

A. The kind of insulation determines whether the battery must be kept wet, or can be shipped in "bone dry" condition. Wood insulation must never be allowed to dry out, hence makes necessary wet or partially wet shipment. With Threaded Rubber Insulation the battery can be shipped absolutely "bone dry."

Q. Why is "bonedry" shipment and stocking preferable?

A. Because it is the only method by which chemical action in the battery can be entirely held up, so that the battery reaches the buyer in truly brand-new condition.

Q. Why does wood insulation need to be replaced?

A. Because wood insulation being soft, wears out more rapidly than any other part of the battery. It is also subject to cracking and checking, which, if allowed to go too far, seriously damages the battery.

Q. Why does Threaded Rubber Insulation outlast the battery?

A. Because the basis is hard rubber which resists wear and does not crack or check.

Q. How can I be sure my battery has Threaded Rubber Insulation?

A. Look for the red Thread-Rubber trade-mark. It can be found only on the Still Better Willard Battery.

Q. How many car and truck manufacturers have selected Threaded Rubber Insulation?

A. 136 in all. The complete list is printed at the right.

Willard Service

136 Manufacturers Using Threaded Rubber Insulation

Acason	Madison
Acme	Marmon
All American	Menominee
Allis-Chalmers	Mercer
American	Mercury
LaFrance	Meteor
Apex	(Phila.)
*Apperson	M H C
Armleder	*Mitchell
Atterbury	Murray
*Auburn	McFarlan
Austin	*McLaughlin
Bacon	Napoleon
Bell	Nash
Belmont	Nelson
Bessemer	Nelson &
Betz	LeMoon
Biddle	Noble
Brockway	Northway
Buffalo	Ogren
*Buick	Old Hickory
Cannonball	*Olds
Capitol	Onelda
*Case	Oshkosh
*Chevrolet	*Paige
Clydesdale	Parker
Cole	Peerless
Collier	Peugeot
Colonial	Phianna
Comet	Pierce-Arrow
Commerce	Premier
Commodore	Preston
Cunningham	Ranier
Daniels	*Reo
Dart	Republic
Dependable	ReVer
Diamond T	Riddle
Dixie Flyer	Robinson
Dodge	R & V
Dorris	Knight
Fargo	Rowe
Fergus	Sandow
Ferris	Sayers
F W D	Seagrave
Franklin	Selden
Fulton	Service
Garford	Shelby
G M C	Signal
Giant	Singer
Glide	Southern
Great Western	Standard 8
Hahn	Standard
H C S	Stanley
Hurlburt	Studebaker
Hawkeye	Stutz
Haynes	Sunbeam
Henney	Tarkington
Highway	Tiffin
Holmes	Titan
Holt	Tow Motor
Hupmobile	Transport
Indiana	Traylor
International	Ultimate
(I H C)	Velie
*Kissel	Vulcan
Kochler	Ward LaFrance
Lancia	White
Lexington	Wilson
*Liberty	Winther
Luverne	Winton
	Wolverine

*For Export

Willard STORAGE BATTERY

California Cultivator

Vol. LV, No. 3

Los Angeles, July 17, 1920

One Dollar Yearly

Practical Growing of Oranges

By Peter Ting

IN order to make a practical success of orange growing one must at least have an inherent love for trees and for work among them. Without this work becomes a drudgery, and not much is accomplished in that way.

The growing of oranges might be divided into four essential parts: cultivation, irrigation, fertilization and pruning. To this might be added good, warm and well drained land and trees coming from good bearing stock.

Cultivation

In regard to cultivation, I believe the soil should be well plowed in the fall, if possible, for in the fall before rains come you can set your plow any depth; also, if you plow under manure or straw it is best done in the fall so that it will be well rotted in the spring. If the weeds should come up during the winter light randalling can be resorted to in the spring and the land put in good shape. If a cover crop is raised in the winter it should be turned under, if possible, in March or at least by April 10 to get the land in proper condition. Most orange growers have more acreage than they can properly care for in the short time allotted them in the spring. Leaving heavy vegetation until later, or the ground hard, will soon tell on the trees, giving them a pale cast, and of course they would be in no condition to bear the best crops. Cultivation with a chisel tooth cultivator or something just as good should be carried on all summer. We cultivate three times between irrigations. First, we harrow about ten days after water has been taken off. This varies with different soils. Five days later we cultivate lightly in squares, then diagonally, then six days later we do the main cultivating. By having the teeth good and sharp it will do fine work at this time.

I always tell my man not to cultivate until the land seems too dry. In that way we can get a nice pulverized mulch for the top layer. If cultivated wet the soil will roll in little lumps and in a few days becomes as

hard as a rock, and the intentions of the worker work the wrong direction. Instead of holding the moisture the soil will dry out much sooner, besides doing an injury to the soil.

Irrigation
In an ordinary year when there is plenty of water I think the first of May early enough for the first irrigation. Of course, where water is scarce irrigating should start so that it will be finished by the fore part of May. The furrowing should be done with a tool that will cut the plow sole. In most soils four furrows should be enough. Among some of our old trees we make only two with good results. Where the ground is steep the zigzag, around the trees is the system we use, making all the furrows serpentine. On heavy soils we run the water about 60 hours. On the light or granite soil, that is very porous, we start off with a large flow until the water nearly reaches the end and then cut down to the desired stream, filling the furrows in again if necessary and leave the water on about 36 hours. Where the trees are large and the zigzag method is not used on account of the slope, the water should be cut in between the trees on the lower rows. Care must be taken always that streams do not flow too fast or too slow or bad results will follow. If the water goes too fast the trees will suffer for want of moisture; if too slow, in time these trees will suffer from root injuries, especially if this happens on the same row, and this is likely to be the case. We irrigate about once in five weeks with a half inch of water to the acre, although we have gone as long as seven weeks in July and August between irrigations without noticeable injury. I think this can only be done where the

soil is well tilled and has a reserve water stock deep in the soil. About this reserve I will say more later.

Fertilizing

Then comes the matter of fertilizing. Fertilizing is not quite so important when the trees are young. One can take an orange tree, stick it in the ground and give it plenty of water and it will do fairly well for several years and sometimes, in odd years, may do better than well cultivated trees. This has bewildered a good many novices in the orange business because they immediately come to the conclusion that the orange tree will not need much care or fertilizing, but let them wait ten or 12 years until the soil becomes exhausted, then the trees go back all at once and everything is blamed but the proper source. Some even go so far as to bud their trees over. Fertilizing should start at least when trees are six or seven years old. Always keep ahead of the trees by building up the soil humus, either in cover crops, straw or stable manure. It appears from my experience that humus and nitrogen are most essential in our soils. We have used from three to 15 pounds of commercial fertilizer, according to grade, per old tree. The soil always should have a reserve of fertilizer and should never be on the ragged edge of want. The trees are not gluttons and they will not take any more than they need if you give them a balanced fertilizer. Trees that have this reserve can withstand any crisis that comes along, whether it be shortage of water or a hot wave, much better, and there is no need to worry much about the June drop. If we have all these conditions, with a fine mulch of four or five inches deep on top, you can hardly beat it as a preventive for June drop.

Pruning

Now, in regard to pruning I believe in being moderate and in not following every fad that comes and using this or that system indiscriminately. It may be perfectly right to prune run down orchards severely to build up new wood, but that does not mean that a neighbor with a healthy orchard should do the same thing.

I am not quite as much afraid of the orange tree sucker growth as some of the growers. I know that my old trees were built on sucker wood and they are now 25 years old and still look vigorous and bear heavy first grade fruit. Of course, it is barely possible that they could have been better if they had been built more upon fruit wood. I do not let my young trees grow that way now, because it makes weaker trees. The last heavy crop we had, in 1916, 20 per cent of my trees had broken limbs, but they had a crop of between 11,000 and 12,000 boxes on 14 acres. I believe now in taking out the rank sucker growth, also dead and weak wood, and where the trees are too dense cutting out some of the healthy wood to open up a tree and let in light and air. Trees up to a certain age will bear most of the fruit on the outside. Later, as the wood becomes older and the tree more open, most of the fruit will grow on the inside. Suckers, say about eight inches to a foot long, are to be left about a foot apart. Anything that you are forced to cut back had better be taken out entirely, since the fruit nearly always grows on the end of the twigs.

Drainage

Last, but not least, is the drainage, or the lack of drainage. It is one of the hardest things to overcome, so in getting orange land it is well to get land on a gentle slope and thereby overcome the lack of drainage.

To close with, I can say that experience has taught me that good results can be obtained on adobe or granite soil by methods that I have outlined here to you and which I have followed.

Raisins to Throw Away

By Fred K. Howard

BACK in the pre-association days when raisins were cheap a statement of this sort would have caused no comment in the raisin growing districts. In those days it cost more to harvest and cure the crop than the raisins were worth, to say nothing of the additional cost of pruning, irrigating and cultivating, and such other incidental items as interest, taxes, insurance and labor income were unthought of when figuring the net loss for the year.

But who would throw away raisins today when they are worth ten cents a pound or better to the grower? Who? Why, Mr. Raisin Grower, the only man who has any raisins to dispose of in this manner. But, you ask, how can the raisin grower do such a thing? Simply by picking the fruit too green.

An unqualified statement of this sort would not go unchallenged, so let us determine just how many pounds of fruit the grower can actually throw away and not realize he has lost anything. To make a pound of Muscat raisins it requires 4½ pounds of fresh grapes testing 19 per cent sugar, while if the fruit is left on the vines until it tests 24 per cent sugar it will take only approximately 3½ pounds of fresh fruit. In addition the fresh fruit actually increases in weight while it is on the vine.

In the drying process alone the grower loses 25 pounds of raisins on each ton of fresh fruit for every degree of sugar loss due to early picking. Mental gymnastics—read it over

again and be sure you get the full meaning. Now let's figure some more. The average production of Muscats is perhaps about 9,000 pounds of fresh fruit per acre. If the picking is done when these grapes test 19 per cent sugar, when the drying is finished we will have about 2,000 pounds of fruit which some people call raisins. If the picking is delayed until the fruit tests 24 per cent sugar the same tonnage fresh will, when dried, make in round figures 2,570 pounds of real honest to goodness raisins, an increase of 570 pounds of sugar per acre in the form of raisins which the grower will be proud to deliver and which are worth ten cents or better per pound. And in addition we have yet to con-

sider the increase in weight of the fresh fruit while on the vine, which would crowd this figure up to around \$75 or \$80 per acre.

Of course, if the production of the vineyard is above the average the loss from picking too green will be correspondingly greater, but remember that approximately 25 pounds of raisins are lost on each ton of fresh fruit for every degree of sugar less than 24 per cent, plus the loss in weight in the fresh fruit.

The natural question in view of these facts is: why do some growers throw away this large amount of raisins each year?

There is an answer, or rather there are three answers. First, and perhaps foremost, is the labor situation. The grower usually finds it necessary to
(Continued on Page 75.)

Agricultural News Notes of the Pacific Coast

Northern California

Napa County reports some cherries going to the canneries at as low as four cents.

R. P. McCune of Wyandotte is the new president of the Butte County farm bureau.

The new cannery at San Leandro, Alameda County, celebrated its opening on July 10.

The Sonoma Valley Cooperative Poultry Association has filed articles of incorporation.

The Butte County Farm News reports many septic tanks being constructed this year.

Some wine grape growers of Sutter County report contracts for wine grapes at \$50 per ton.

Lawrence Taylor is aiding in Shasta County farm bureau work during the sickness of Adviser Talbot.

Berry growers of Paradise Valley, Butte County, are organizing cooperative marketing association.

It is now proposed to make the Sacramento navigable farther up stream with a series of dams and locks.

Sutter County reports 5,000 acres of cling peaches in bearing. Of this the largest acreage is set to Tuscans.

An irrigation company of Eldorado County has been authorized by the state railroad commission to increase its rates.

Sutter Basin anticipates bumper crop of potatoes. The Sutter Basin Company alone will harvest more than 60,000 sacks.

Farmers of Siskiyou County are taking steps for the organization of an irrigating district, which proposes to secure water to cover at least 150,000 acres.

San Mateo County, the biggest grower of Globe artichokes in the state, reports a new pest, the larva of some moth, which is causing serious losses to growers.

Farm center meetings in Placer County have been suspended for the summer months owing to the heavy work of the fruit harvest and the difficulty of securing labor.

The directors of the Pacific Rice Growers recently held a meeting in Sacramento to discuss the disposal of the coming crop and the question of water sufficient to mature it.

Yuba County's first car of pears was from the Howard Reed orchard near Marysville. The Reed orchard will produce about 2,000 tons of Bartletts. One hundred men are now at work in the harvest.

R. L. Nougaret, in charge of the office of viticulture, has been visiting the Cloverdale section of Sonoma County to look over the "green grafting" which has been done recently on grape vines in that section.

Directors of the Butte County farm bureau have demanded rigid enforcement of the state law requiring that all those who make a business of spraying fruit trees obtain a license from the county horticultural commissioner.

The gas shortage which has affected the whole state has been especially stringent in Sacramento City and nearly all points north. The shortage has affected the farmers who are using power less seriously than pleasure automobiles.

Central California

Kern County cotton is making fine progress and there is a good deal of it.

Citrus growers are planning for the greatest campaign yet on the citricola or gray scale.

The Madera County farm bureau is working on large exhibit to be made at the coming state fair.

Santa Clara Valley is harvesting apricots. The cooperative cannery will handle at least 2,000 tons.

Lindsay orange groves are showing unusually heavy June drop because of extremely hot two days in June.

Nearly 200 growers attended the sessions of the plant pathological congress held at Porterville June 26.

Secretary Paine of the state fair association recently addressed people of Salinas, urging exhibit at the coming fair.

The weather station at Fresno chronicles 110 degrees for June 20, which is the highest June temperature since 1911.

Nearly all counties in the central part of the state are joining in the campaign to secure new series of state road bonds with an increased rate of interest.

At Shafter, Kern County, one field of potatoes produced 136 sacks to the acre. This fine crop was produced in spite of this year's unfavorable weather conditions.

Effort is being made to call a convention of citrus fruit workers to be held in Fresno in September. There are said to be about 3,000 members of this organization.

The state railway commission has granted the P. G. and E. and Sierra and San Francisco Light and Power Company a 15 per cent surcharge during the present season.

Recently 23 Kern County grammar school boys finished a pig feeding contest. The boys made some fine records, some producing pork at a cost of 9.25 to 10.7 cents per pound of gain.

Fig growers are active in the organization of a marketing association. President Niswander of the Peach Growers reports: "Results to date show splendid effort on the part of solicitors."

Field Entomologist Urbahn of the United States department of agriculture is in the Watsonville apple district urging growers to assure sound fruit by spraying at the proper time to destroy codling worm.

Santa Clara County fig growers met recently with peach growers of the valley to discuss merger of the fig and peach associations. More than half of the fig growers of the county are reported to have already signed up with the association.

A mass meeting of olive growers was held at Lindsay, Tulare County, the last week in June to complete arrangements for change of membership from the California Associated Olive Growers to the Associated Olive Growers of California.

Work on the first dehydrating plant in the Pajaro Valley started recently. The plant is being erected for the Corralitos Fruit Growers Association beside its packing house. The dehydrator will have four kilns built of concrete and lined with fire brick. The outside walls are of hollow tile.

Southern California

The marmalade factory at Anaheim has closed for the season.

Palo Verde, Riverside County, is predicting a 15,000 bale crop of cotton.

The cannery at Arlington, Riverside County, is running full handed on apricots.

Ventura County farm bureau is making a strong campaign for fire prevention.

Riverside orange growers recently met at Fairmont and discussed frost protection.

Perris, Riverside County, is planning to make an exhibit at the Southern California fair.

A large number of Redlands high school girls are helping in the Hemet apricot orchards and dry yards.

Dr. D. S. Cox is the new farm adviser for San Bernardino County. He has just arrived from Cornell University.

The citrus center of the Riverside County farm bureau is planning a demonstration of treatment for gophered trees.

Growing crops of Limas and Baby Limas are reported looking exceedingly well in all sections of Southern California.

Fumigation school will be held at Pomona high school, July 23. There will be demonstrations of both fumigating and spraying outfits.

Walnut growers of the San Fernando Valley are planning building warehouse at Lankershim. It will be of brick and 60 by 80 feet in size.

The Alfalfa Growers of California find the crop of alfalfa hay will be materially lessened over earlier estimates. Prices are ranging around \$40 f. o. b.

Many potato growers of Southern California are finding a serious situation in the growth of immense tops but no tubers. No remedy is yet discovered.

During the last few weeks farmers in many parts of San Bernardino County have been restricted in their use of electric power to pumping for irrigation only.

On July 23, at Pomona high school, the third annual citrus growers' fumigation and spraying school will be held under the auspices of the Los Angeles County farm bureau.

At the meeting of the California Citrus Institute at Santa Ana members pledged themselves to support a bill preventing wastage of water from flowing wells in the lowlands of Orange and Los Angeles Counties.

The Imperial Valley farm bureau recently staged a trip through the Arizona Pima cotton producing centers and has returned many of its members enthusiastic for planting more largely to Pima in the Imperial.

A campaign has just been concluded in San Diego County against the grasshopper pest. County Horticultural Commissioner Gorton and D. B. Mackie of the state department of agriculture have been directing the campaign.

The California Lima Bean Growers Association has just completed careful survey of acreage planted this season to Limas and Baby Limas and finds the total for Southern California to be 149,837 acres of which the association controls 78,804.

The Coast and General

There are 87,809 autos registered in Oregon.

Southwest Washington Fair will be held at Centralia August 23-28.

The Eugene, Oregon, fruit cannery is running full handed on gooseberries.

Tacoma, Washington, reports heavy advance in egg prices due to demand from Alaska.

The annual picnic of the Oregon Duroc Breeders Association was recently held at Salem.

Several large woolen mills of Massachusetts have closed because of shrinkage of orders.

Berry growers at Raymond, Washington, report \$1,200 per acre profit from this season's crops.

Washington County, Oregon, Holstein Breeders Association recently held a cattle judging contest.

The first full car of butter out of Eastern Oregon was shipped from Baker in June, to Lewiston, Idaho.

Cherry shippers of the Wenatchee district of Washington are calling for more adequate supplies of express cars.

Pierce County, Washington, has organized a honey producers association. Marketing at better advantage is the object.

The state legislature of Washington is sending an immigration and naturalization committee to study California's Japanese problem.

Oregon agricultural experiment station and federal bureau of soils are working cooperatively in soil investigations in the Willamette Valley.

The Nevada Livestock Association has committee conferring with forest reserve officials, endeavoring to secure more satisfactory pasturage arrangement.

The highest test for butterfat made in cow testing associations of Oregon for the month of April was by Mabel, a grade Jersey owned by J. Nulf of Bandon. She produced 105.18 pounds of butterfat.

Deer Park, Washington, fought off May frosts by liberal smudging and the orchards thus protected now show much larger crops than those not smudged. The campaign was kept up for 12 days.

Foresters of the Hawaiian Islands are appealing for greatest care in preventing fires because of the protracted dry spell which has prevailed over the island. No permits are being issued for any camp fires.

The Gila Indian reservation in Arizona, comprising some 50,000 acres of land, is being benefited by a power line which will enable more liberal pumping and irrigation. A half million dollars is being invested in the installation.

Berry growers of the Bellingham district of Washington say that they will need within a few days 1,000 to 1,500 berry pickers. Prices are practically double those of 1919 and some firms are offering a bonus to pickers who stay through the season.

The dehydration plant at Salem, Oregon, is running on spinach. Later, strawberries and cherries will be handled through the same evaporator. The owners anticipate handling at least \$2,000,000 worth of products through the plant this season.

Orchard Tractors Save Money

By J. E. Calkins



THE orchard tractor, as we now know it in the California citrus groves, is not only giving deeper and more thorough cultivation to the land on which it is being used than teams gave before it came, but it is largely superseding two items of grove labor that used to be large, and thereby working quite a saving to the grove owner.

In a great many groves during the past spring it replaced the plow with the orchard disk. Till very recently, except in certain neighborhoods with peculiar soils, it was thought that plowing, often deep plowing, was necessary if there was to be a good dust mulch, but on unnumbered groves through the best part of the citrus belt no plowing was done this year. For one thing, there is less disposition to tear up the root system than there formerly was, and for another thing there is less man power to do the plowing. The cut-away disk of good width, well loaded down, is worked on groves whose owners used to think they were ruined if they did not get a good plowing and often plowing two ways. The tractor rolled down the cover crop, of whatever height and density, with no trouble, and chopped it up, and at the same time stirred it into the soil to a depth of several inches with equal ease and in decidedly less time than was formerly spent on plowing. The soil was worked to a finer state of division; cover and fertilizer were more thoroughly worked into it; the top layer of earth was effectually loosened and at the same time kept compact against evaporation so that the moisture in the ground was better retained; and the bane of the irrigator, the first run of water, was as easily handled as any other. There are still men who cling to the old method of thorough plowing, as there are men who hate automobiles

and still love to drive a horse, and there are places and cases, without doubt, where it is needed, but the engine drawn disk seems to have largely crowded it out. So far most of the ranchers who have come to the new method express themselves as confident of better results than the old time plowing gave.

In the next place, much of the former labor of hoeing out under the trees in these groves has been eliminated, with proportionate saving of cost to the owner. The best team drawn cultivator did not cut very wide if it worked deep. It brushed past the outer rim of the trees but did not have breadth enough to get far underneath them. If it was made wide enough to reach far under the trees it was not able to work very deep because of overload to the team. So it naturally happened that the soil well under the trees was not worked, and the careful rancher felt that it was necessary to hire men to break this up with the spading fork, or at the very least to hoe out the weeds and grass that sprang up in the shade of the tree out of reach of the team tools. At the former prices of labor this hand work easily ran to quite a sum per acre where the trees were large, and at the present prices the cost appears almost prohibitive, and probably the needed help at any price would be hard to get.

The tractor has worked a notable change in this state of affairs. Its greatly increased power enables it to pull an implement with a much greater width and at the same time thrust it well down, so that with work as deep as the team ever did it also accomplishes work a great deal wider. This makes it possible to extend a low built cultivator, equipped with efficient shields which enable it to glide under

the low branches without doing damage to them, so that it cuts far under the trees, giving good cultivation to the soil that was formerly missed and greatly reducing the area on which weeds might grow and on which hand labor might be required, and which was never irrigated or stirred.

Beyond the two advantages named, whereby the tractor gains over the team, there is another which is of equal or greater importance though it does not operate to cut cost; on the other hand it probably causes some increase of cost; but it plainly brings returns that more than make up for it. The part of the average orange or lemon orchard that is most responsive to irrigation, takes water best, holds it longest, and does the most good with it, is the part that is hidden under the trees. Evaporation is slowest and smallest there, and the soil thus shaded is far more absorbent than that which lies outside in the open air and sunshine. With teams it was not possible to effectively cultivate under the trees, so the careful rancher, having the fear of gum disease before his eyes, has been very particular not to let his irrigating furrows wander under them where the ground could not be stirred and has tried to keep the water from breaking out of his furrows and spreading in these out of the way places. The area of the grove that could be watered, fertilized and worked corresponded with the area that could be reached with the narrow team implement. As the trees grew larger the area that could not be handled grew larger, each tree taking in more territory and retiring it from cultivation, and the portion of the land that could be worked grew smaller. In the largest, oldest groves the space that was workable was so far cut down, unless trees were

pruned high to allow work to be done under them, that it was only a mere fraction of the area that was tilled at the time that grove began to bear; yet people wondered why the older groves became so rapidly decadent and so soon reached a stage when they gave but small return.

The wider working tractor implement, cutting deep into the ground and stirring it thoroughly, under the trees as well as in the open space between the rows, has made a great change in the form and condition of such groves. Where the proper implements have been provided, properly shielded to avoid tree damage and intelligently handled, it is safe to say the tillable surface has been increased from 50 to 100 per cent and the land thus gained is that which is most responsive to cultivation. Twice as much water goes down into the ground in a furrow drawn close to the trunks of trees that spread wide and shade large spaces as goes down in the open air furrow by its side, and the spread of that water underground is far greater. It lingers longer in the soil, and it seems plain from the showing that the grove thus treated makes, it does the tree vastly more good than the water that slowly penetrates in a furrow that lies out in the broiling sun that orange growing demands. The tractor alone has made it possible to put the water under the trees easily and cheaply, and then to cultivate after it efficiently, and the improvement that comes from this single feature of tractor work in the grove leads observant growers to say that this one benefit alone, if there were no other, would forbid them returning to team work and discarding the tractor. It may take the test of years to fully indicate what this under-tree working is really worth and what its drawbacks are, but at the present the advantage seems to be all on its side.

Standard Apple Act of 1917

By S. V. Christerson, Standardization Inspector,
State Department of Agriculture



THE interpretation of a statute is frequently difficult to the average layman, and the Standard Apple Act of 1917, although written by apple growers, shippers and packers for the use and protection of the industry, has proved no exception to this rule. In order to obtain a clearer understanding of the purposes and requirements of this law by the apple interests, the office of standardization of the state department of agriculture, directly in charge of the enforcement of this act, has prepared the following article for publication:

Three Grades

The standard apple act of 1917 establishes three grades for apples packed, delivered for shipment, offered for sale, or sold in California.

The California Fancy grade shall contain only nearly perfect apples. The fruit placed in this grade must be well grown, hand picked, properly matured specimens of one variety. With the exception of Gravensteins, stems must be retained and the fruit be well colored and shaped for the locality in which grown; uniform in size, which means that the variation in size between the apples must not exceed three-eighths of one inch; two and one-fourth inches is the minimum di-

ameter for apples in the California Fancy grade, although Winesaps and Lady apples not smaller than two inches may be packed. Apples when packed in this grade must be free from insect pests and diseases, visible rot, dry rot or Baldwin spots, insect bites, bruises and other defects. A tolerance of three per cent for any one defect and ten per cent for total defects is permitted from this standard.

The B grade was established to take care of apples which in certain minor requirements were not of sufficient perfection to be placed in the California Fancy grade. Apples in the B grade must conform virtually to the standards established for the California Fancy, with the exception that those that are somewhat misshapen and those which show insect bites that have healed in the process of maturing, as well as the ones on which the stems have not been retained, may be packed. In the B grade slightly frost marked or sunburned apples are permitted. No minimum size has been established for the B grade, but the variation between the individual fruit

in one container must not exceed three-eighths of one inch.

The C grade is practically a cull grade. Apples packed under this grade do not have to be well grown, hand picked, retain the stems, well colored and normally shaped for variety and locality; uniform in size, well packed, free from insect bites, bruises, frost marks, sunburn and other defects, and may be dirty. In other words, the only requirements made for this grade are that the apples must be mature, of one variety, free from insect pests, diseases, visible rot, dry rot, and Baldwin spot.

Boxes

The standard apple act of 1917, as amended in 1919, establishes the Northwestern standard apple box as the California standard. This box has the following dimensions, inside measurements: 10½ inches by 11½ inches by 18 inches, with cubical contents of approximately 2,173½ cubic inches. Other boxes for the packing of apples may be employed, such as the old California box, pear boxes, etc., provided each packed container bears the legend, "Irregular Container," in let-

ters not less than one-half inch, or 36 point type. In order to identify and distinguish apple containers, the following markings must appear on each box:

Grade, California Fancy, B, or C.
Number in box or net weight.
Variety.
Name and address of packer.
Date when packed or repacked.

If the number of apples is marked on the outside of the container a variation of five apples, more or less than the number stated, is allowed. If the variety is unknown to the packer, the legend "Variety Unknown" must appear in lieu of the name of the variety. The law does not require the tier marking of the container. A number of apple growers throughout the state are still in the habit of marking 3½ tiers, 4 tiers, 4½ tiers, etc. on the container. Although these terms are clearly defined by law, there seems to be a preference, particularly with the Eastern trade, to have the number of apples marked on the box which in itself indicates the size. This is the real purpose of marking the number of tiers on the outside of the container. The Western Fruit Jobbers Convention, at their last meeting in San Francisco this spring, adopted a uniform schedule of the number of apples to be contained within certain

(Continued on Page 72.)

Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877
Combined with California Cultivator 1914
Livestock and Dairy Journal, Established 1901,
Combined with California Cultivator 1916

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Saturday, July 17, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

A scene typical of thousands in California is shown on the cover this week. It is on Conejo Ranch in extreme southwestern Ventura County, in fact, Los Angeles County almost claims this section.

In a few days the scene shown will be materially changed for the reason that it will be filled with seats and auctioneer's box and some of Conejo's Duroc-Jerseys and Hampshires will there be sold to highest bidders. The auction method of disposing of pure bred stock is increasing in favor, and justly, for it brings together buyer and seller and gives the buyer opportunity of judging not only with his own eyes but with the eyes of the expert animal breeder.

BETTER EQUIPMENT

A great event which will aid the farmer and fruit grower to gather a fund of information in farm power, farm implements and machinery is the first National Tractor and Implement Show at Los Angeles. The Southern California Tractor and Implement Dealers Association, or, rather, the National Association, will gather in the Verdugo Woodlands in the city of Glendale, within a few minutes of the center of Los Angeles, an exhibit of

farm power, implements, machinery, equipment and household conveniences which will enable one to procure a liberal education in up to date farm equipment.

THE IRRIGATION CASE

Decision in the case in which the delta users of Sacramento River waters are plaintiffs and irrigators of Glenn, Colusa and other upper river counties are defendants has been delayed by change of venue. It was to have been decided at Martinez on the 12th, but the motion for change of venue will cause a delay before the injunction proceedings can be reached.

It appears that the result must be loss of millions whichever way the decision. However, it is to be hoped that some solution will be found, through employing dams, locks, or some other means which will provide sufficient water for all.

OUTLOOK NOT BRIGHT

In the review of general business and agricultural conditions of the twelfth federal reserve district the reserve bank reports 33,925 hogs received this year, as compared with 52,578 last year, at the public yards at Portland, Salt Lake, Seattle, Spokane and Tacoma. Receipts of cattle were practically the same, while those of sheep were slightly greater. As to sheep, the bank reports:

"Normally most of the clip would now be under contract, but this year buyers have not entered the market and practically none of the 1920 clip has been sold. Cancellation of orders at Eastern mills and transportation difficulties are assigned as reasons for failure to move the clip."

Some farm productions may be still advancing—for instance, barley—but the livestock man isn't finding the outlook especially attractive at this moment.

MANY MINDS

Many men meeting together and discussing California cultural problems afford wonderful diversion for the onlooker who is not vitally concerned in the solution of the problems. But the one who wants the one complete and final answer leaves a congress or institute or farm bureau meeting hopelessly floundering.

The final answer is not to be had. The royal road to mental achievement does not yet exist. Successful farming, especially irrigated farming and orcharding in California is—mind we do not say requires, but is—mental achievement.

Today we stood in a citrus orchard, 20 year old trees. The soil surface was covered with dead and brown foxtail, malva and other winter growth, so that one sank into it ankle deep. Irrigating water was struggling through weed filled and tortuous furrows made some months ago. Bermuda and other grasses, even abundance of Johnson grass, were growing luxuriantly.

Horrible!

It was really horrible, a nightmare, to the tidy, painstaking orchardist.

But note! The tree leaves were large, dark green and rich. Not a chlorosis leaf to be found. Health manifested by every tree. Better than all, trees—all of them—loaded with fruit. We would wager the office shears on a thousand boxes per acre. Big plump fruit that June drop will not affect this year. The owner's home filled with comforts and luxuries. The owner and husky sons caring for more than a hundred acres

of orchard. No Oriental nor practically any other labor employed. More horse sense than horse labor used on the ranch.

"Does the California Cultivator advise other citrus orchardists to follow the same methods?"

Heavens, No!

Still—we can't help but think—that fellow's making money.

What is success, anyhow?

STATE MARKETS

Senator William E. Brown and the Producers and Consumers League of California are pushing initiative petitions asking for the establishment of state commission markets, the principal feature of which shall be, as expressed by the proposed act:

"To foster and encourage cooperation between producers and consumers of any such products, in the interest of the general public of the state of California, and in addition thereto to improve, broaden and extend in every practical way the distribution and sale of any such California products throughout the world." Other points as expressed in the proposed act are to gather and disseminate information and to carry on the business of receiving from the producers the agricultural, fishery, dairy and farm products of the state, and selling and the same on commission as herein provided.

Senator Brown writes:

"State commission markets will assure and maintain open avenues between the producer and consumer and will permit the law of demand and supply to genuinely operate without artificial manipulation. This insures a square deal to all concerned."

HIGHWAY BONDS

A Kings County fruit producer recently remarked that a few years ago he could not deliver fruit from his ranch—which was some miles from the packing house—without at least a half of it becoming unmarketable because of the jolting in transit. Today in a fourth of the time he takes twice the quantity to the packing house and it arrives 100 per cent to the good. Good roads—and incidentally, gasoline and better springs—have brought this about. But the best of springs will not overcome the chuck holes of a poor road. These advantages have been recognized by the voters of California, and millions have been voted to increase the mileage.

A few of the millions have been available, but changing financial conditions have made further disposal of the bonds impossible. At one time four or four and a half per cent would get all the money the state or nation needed. When the price began to rise, different counties aided the state by shouldering the difference between market and state bonds. The situation continued to get worse, or the money lender would say, better, until the counties were unable to shoulder the burden. Road building has ceased, or soon will cease.

However, the people of California cannot and will not tolerate a step backward in the building of good roads. Too much of our prosperity depends upon them. Everybody has been busy during the past week signing and circulating petitions for initiative measure for the recall of the former bond issue, or that portion which has not been sold, and the release of other bonds to bear a rate of interest which will make them salable, not exceeding six per cent, this to be voted upon at the election on November 7. The original petitions were to be all filed by last Thursday, but supplemental petitions may still be filed.

OFF AG'IN—ON AG'IN

"Have you had your daily allowance of gas?" has become the usual morning salutation. The regular morning exercise now is to get in line and secure your little one to three gallon allowance. Usually the tail of the line is caught with nothing but air. The Pomona Progress suggests that it is a case of "Off ag'in, on ag'in, gone ag'in, Gasoline."

HELPING MEN

"The main purpose is to help in the solution of the land problems of the future." This is a statement in the opening chapter of Prof. Elwood Mead's "Helping Men Own Farms." Nor is there any discrepancy between this statement of purpose and the title of the book. Dr. Mead is nothing if not a seer of the larger things of the future. He is looking to the betterment of national life; he is looking to patriotic service; and he is seeing a hungry world unless home owning is made more attractive than tenantry. The two first words of the title, "Helping Men," appear on every page of the book. Dr. Mead is well aware that as the man, so the nation.

Dr. Mead has spent his life in studying the question of economics and especially the question of land tenantry. Nearly a score of years ago he was called to Australia to aid in the solution of an irrigation problem. The state of Victoria had installed a great irrigation system; there was water in abundance, running in great canals through large estates. The use of the water did not appeal to these large land holders, so the greater portion of the irrigation waters wasted. How could these waters be used on these lands so as to increase Australia's wealth and citizenship?

Dr. Mead studied the problem, then the methods of handling land tenancy in Italy, Denmark, Holland and the British Isles. Later the great Australian holdings were broken up under Dr. Mead's direction, and the benefits of that work were such that California reached out and brought him back to America. In this state he has brought about land settlements which are the pioneers in all America.

The greater part of the book is given to these settlements in California, to a discussion of the problems they have created and to the problems they have helped in solving. We believe this book will materially aid in the solution of the food problem. With a large part of the world hungry and the larger part which will be hungry within the next few years unless tenancy and ownership problems are solved, Dr. Mead's book is timely and we believe will materially aid in the solution of some of these far reaching questions.

"In California, as in other American states, rivers need to be conserved and forests saved from the devastation of ax and fire. The fertile soil of hillside farms needs to be saved from the destructive effects of erosion. Agriculture which impairs soil fertility must be discredited. In the arid states the relative rights of irrigation and power should be ascertained and defined; a definite plan of future development should be prepared. Real estate tax laws based on unimproved values with a higher rate for great estates and those held by non-residents would help to break up large holdings, increase the rural population and forestall more radical remedies. Such restrictions should be placed on tenure as will prevent the holding of great areas of land by non-residents. More effective laws are needed to protect rural civilization from the impending menace of alien ownership. What has been accomplished is only a germ of the things that ought to be done to make rural life a real social and industrial democracy."

More extended notice of this book will be given in the next issue of the California Cultivator.

Top Working Orange Trees

By Ernest Branton



ON THE Huntington Ranch at San Marino, Los Angeles County, 3,513 old Navel oranges have been top-worked to Valencias since 1916. The reasons for this change were three: that district is better adapted to Valencias than to Navels, in both climate and soil; prices for Valencias from the district are better than those for the local Navels; the district is cold (in the lowlands) and the Valencia is the hardier of the two. In 1916 there were 1,190 old Navels budded to Valencias at a height of four to five feet. The work was done in June and July. The buds were large ones and were inserted in the old wood. About five weeks after budding the trees were ring-barked just above the buds. The trunks below the buds were then whitewashed and the old tops cut away at con-

previous year, so Mr. Hertrich changed his methods.

In March, 1919, he cut back 1,630 Navels, immediately whitewashed them and budded in the new shoots that grew up, in October and November. This proved very successful for the buds lay dormant until early in the spring of 1920 and then started into growth with the first pulsation of the growing season. Now the orchard presents a very interesting and attractive sight and material for study. The old trees were cut off at five feet high. No fertilizer is given these trees this year for there is as yet nothing needing much food. A good cover crop was grown and turned under to keep the soil in good condition.

All this work and results were "prosy" and matter of fact and but one item of unusual interest developed.



Topworked Trees at San Marino

On left Navel cut back in March, 1919 and budded in new wood in October. On right a four year Valencia top, budded on Navel in June, 1916.

venience. When the orchard had been cleaned up the trunks were again whitewashed. William Hertrich, the superintendent, considers it necessary to whitewash before cutting away tops and says many topworkers lose through lack of this precaution.

Enter Certified Buds

In 1917 agitation was rife for certified or "pedigreed" buds and Mr. Hertrich had these placed in 693 trees, the work in all other ways being similar to that of the year previous. But the certified buds were small and would not take as readily in the old bark as did the larger buds used the

Some trees of those budded in the old wood were entirely shorn of the top while others had one or more small branches left to keep the sap going and the trees somewhat active. A freeze came and many of those that were dormant or without any top were killed, even those six inches in trunk diameter. None of those that were functioning through having a small branch left on were killed. These 3,500 trees are all Mr. Hertrich has worked over from Navels to Valencias but he is working over and will continue to work over the non-productive or drone trees with buds from the very best types obtainable.

Violations of Fresh Fruit and Vegetable Law

F. W. Read of the state department of agriculture writes:

"Now that the shipping season for deciduous fruits is well under way it is felt that the horticultural commissioners should caution all inspectors to be absolutely sure of their ground before rejection proceedings are instituted.

"The long list of violations reported by the county horticultural commissioners during the past two weeks only serves to emphasize the fact that we must proceed carefully in the exercise of the authority which the law delegates to us. Nothing will bring the standardization service into greater disrepute than condemnations on pure technicalities. In this office we stand for a commercial interpretation of the law. This does not mean that it is our desire to have the horticultural commissioners and their inspectors relax their vigilance in the matter of prosecuting offenders, for it is felt that the success of the fruit and vegetable industry of the state depends in a large measure upon the proper enforcement of the standardization laws, but we also feel that each case should

be considered carefully on its merits.

When reporting violations of the fresh fruit and vegetable standardization law on the forms provided for that purpose, the exact disposition of the condemned fruit should in all cases be included, although no particular space is provided for this information on the blank. If the goods are sent to a by-products factory give the name of such factory, if possible. Inspectors should not use "condemned" on report, as this is very difficult of interpretation; rather say "dumped," "destroyed," "returned to shipper," "sent to by-products factory," "marked," etc. When mention is made of the cause of condemnation, such as "cracked," as in the case of plums, "wormy," in the case of apricots, etc., give the approximate percentage of defect.

The pinto bean growers of New Mexico have earned \$82,000 in additional profits from their 1919 crop through their cooperative marketing association, initiated by specialists of the United States bureau of markets.

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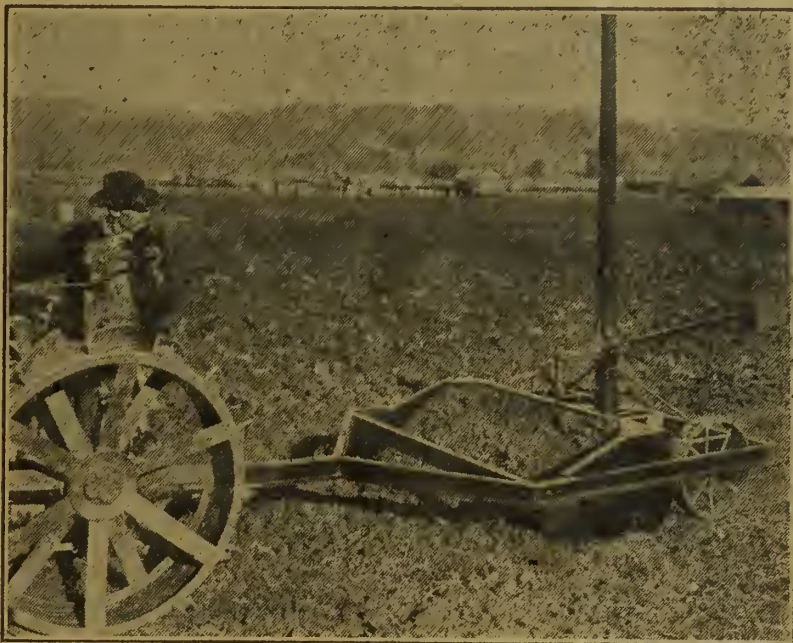
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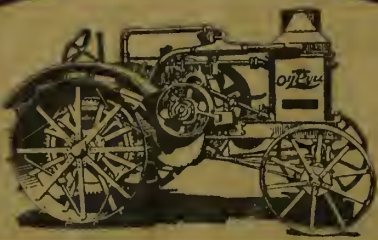
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We offer plants of the following—prices postpaid:

	Per Doz.	Per 100	Per 1000
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Guinea—divided crowns	1.00	4.00	
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Rhodes	.50	1.00	
Para—Stems	.50	1.00	4.00
Japanese Sugar Cane—Stems	1.00	4.00	

We offer seed of the following—which should be planted now:

	Price: Per Oz.	Per Lb.	10 Lbs.
Smilo	\$.50	\$3.00	\$25.00
Rhodes	.25	1.00	8.00
Paspalum Dilatatum	.25	1.00	8.00
Alfileria	.25	1.00	8.00
Orchard Grass		.75	6.00
Italian Rye		.50	4.00
Salt Bush		.75	6.00
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Melilotus Alba		.75	6.00
Peruvian Alfalfa		.60	5.50

For a wind-break around your garden, plant Napier.

For further information on any of the above subjects, write

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In 1918 growers lost \$10,000,000 worth of prunes and grapes through early rains. Perhaps you sustained part of this loss.

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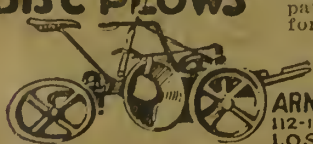
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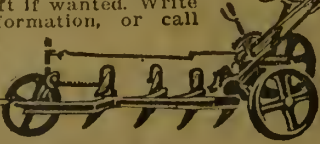
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At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

STANDARD APPLE ACT OF 1917

(Continued from Page 69.)

tier markings; for instance, counts 64 to 88 to be classed as 3½ tier, counts 96 to 125 to be classed as 4 tier, counts 138 to 185 to be classed as 4½ tier, etc.

Diseased or Infested Fruit

A great deal of confusion and comment has been caused by the misinterpretation of the provisions of section 5 with reference to apples infected with insect pests or diseases. This section provides clearly that no one may import, sell, barter, offer for sale, or have in his possession for sale any apples infected with any insect pests or the pupa or larva thereof, or any disease. It provides, further, for the disposition of apples of this quality and it should be understood that nothing in the standard apple act of 1917 prevents the grower from selling such infested or infected apples as part of his crop in bulk to the packer for the purpose of packing or to sell such apples to a by-products factory for the manufacture of such apple by-products as vinegar, cider, dried apples, etc. The question has been raised as to whether a housewife could purchase this fruit to make jelly or sauce, and if the retailer or peddler could sell it to her for such purpose. The office of standardization has maintained that it would lower the standards of California apples if such practice were permitted, but that growers could sell infested or infected apples direct to the consumer provided the consumer came to the ranch and purchased such infested or infected fruit in person. The argument in favor of a strict enforcement of this paragraph is: Should we permit the sale of cull apples in competition with well graded and packed apples, the consumer would not be benefited and the producer would suffer a financial loss because this poor grade of apples would naturally cause a decline in the sale of good, healthy fruit. There is no economy in buying decayed, diseased fruit, as it would be cheaper to buy apples which can be used in entirety than to have to remove such portions as are infested or infected. On the other hand, the chief argument for permitting the sale of diseased fruit has been that the grower should be allowed to dispose of his crop and the thousands of poor families in the large cities should be permitted to buy this low grade fruit. Section 5 provides a means of disposing of culls or diseased fruit, and poor families in the large cities can well afford to pay 50 cents or 75 cents more and get a box of C grade apples than to buy a box of wormy, diseased, decayed fruit.

State Stamps

The enforcement of this act has been provided for by authorizing the state director of agriculture to cause to be printed or lithographed stamps which indicate the grade of apples packed under the provisions of this act. At the present time two types of stamps are in use: one a rubber stamp bearing the impression "California Fancy," "B," or "C" grade, guaranteed by the packer under the standard apple act of 1917; the other a lithographed stamp about two and one-half inches square bearing the same legend, but affixed by means of mucilage to the container. Large packers prefer the rubber stamp, as it expedites the stamping of their boxes, and the "sticker" stamp is frequently lost or removed in transit. In either case a charge of one-half cent each is made for the use of this stamp, payable to the state department of agriculture. The revenue derived from this sale is used for the employment of inspectors to enforce the law in the principal apple producing sections of the state. The Watsonville district produces by far the largest revenue. During 1919 it was somewhat in excess of \$15,000. Five or six inspectors are employed in this district. The Sebastopol district produces a revenue of approximately \$4,000, and in that district one inspector is employed. Southern California has so far produced a very small revenue (about \$700 during 1919), but we have considered it advisable to maintain one inspector there, as some day the apple producing sections south of Tehachapi will in all probability produce a greater amount of packed apples than the northern part of the state. Packers

are urged for their own protection to employ the use of the state stamp on every packed container. The department of agriculture is willing to furnish thoroughly qualified inspectors at any time the revenue is sufficient to permit the employment of such official.

This question has been frequently propounded by packers: "Does the state apple stamp protect us by providing immunity in other sections where our apples may be received and inspected?" Decidedly not. Any horticultural official at any point in California has the right, and it is his duty, to inspect any apples shipped into his district. However, the placing of the state apple stamp on a box means that the shipper or packer has complied with the standard apple act to all intents and purposes and considers that the protection which he obtains by a strict enforcement of this law will be of sufficient value to him, indirectly, to justify his assisting in the enforcement by paying into the state treasury one-half cent for each box of apples that he places on the market. It has been found that not enough money was obtained from the sale of these apple stamps to provide a sufficiently strict enforcement of the law. As in the very nature of things the future success of the apple industry depends on the quality of the pack, the apple interests of Watsonville have agreed that during the ensuing season, instead of paying one-half cent a box for every box packed under the state stamp, they will pay one cent. This will enable us to double our force of inspectors at Watsonville and hence make doubly efficient the inspection service. We hope that the Sebastopol district will agree to do likewise.

The apple districts in Southern California are peculiarly situated, two of the main ones, Oak Glenn and Yucaipa, not even being on a railroad line. This frequently necessitates the shipping of apples from these districts loose in lugs to central market, where frequently they are packed. In many instances the apples are graded before being shipped to central market and it would seem desirable that such gradings be inspected prior to shipment.

In conclusion, it must be remembered that California, with its ever increasing apple acreage, must compete with the Northwestern states on Eastern markets. It is only by the establishment and enforcement of rigorous standards that we can hope to keep our California apples at par with those of the Northwest and to give them the advantage they rightfully deserve, due to superior quality, flavor and appearance.



Sulphur

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand, Fleur de Soufre, packed in double

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VENTILATED Sublimed Sulphur—Impalpable Powder, 100% pure, in double sacks, for Dry Dusting and making Paste Sulphurs.

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men \$4 per day for making the solution and applying same.

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Ask us for prices for Carbon Bisulphide, the surest remedy for destroying ground squirrels.

VINE DAMAGE FROM CUTWORMS

The following damage in vineyards in the Calistoga area has been reported by County Horticultural Commissioner Butler of Napa County. R. L. Nougaret of the office of viticulture reports grape buds in Calistoga and other districts of Napa County suffering from probable cutworm damage. The vines do not start out until late and make practically no grapes but a little later send out a vigorous growth of suckers. Mr. Nougaret writes: "The main or principal bud which gives the shoot of the year and which is the fruit bearing bud has been destroyed by some cause or other and for that reason many small shoots start from that one center where the main bud existed but are really put forth by dormant buds. I would ascribe the trouble to cutworms although it may be due to frost at the time the buds were just on the point of developing and opening out, but my reason for giving preference to the cutworm injury is that I find among the buds sent me some which show the effect of having been eaten into by that insect. As late as this, it is difficult to recognize just what is the cause of the injury, but the growth now present has all the aspects of the secondary growth which follows cutworm attack.

"I have had but slight experience with cutworm injury on grapes in the northern districts and for that reason I am somewhat surprised at the lateness of development of the dormant buds. From my experience where the major portion of a 40 acre vineyard had been attacked in this manner and the second growth of shoots came out quite late. In the southern portion of the San Joaquin Valley where I have had more experience with cutworms the shoots generally come out earlier and more rapidly after the vines have been attacked, but that may be due to both climate and the variety of grapes.

"There is nothing to worry about in this case, that is, as far as the health of the vines is concerned; unfortunately there will be no crop, or very little, on vines affected as those from which samples were taken. I would advise, however, that the vineyardist go over his vines and pinch off all the shoots but one where the shoots are growing from the same bud so as to have good pruning wood next year, or I fear the canes will be rather spindling if all of them are allowed to grow."

PLACER COUNTY PLUM GROWERS WANT SPECIALIST

At a meeting held in Newcastle on June 24, about 40 growers and others discussed problems of plum production and went on record as advocating the securing of a branch deciduous experiment station. It was also decided to endeavor to have a specialist detailed there this season and next spring to observe conditions and study the situation.

The meeting was called by the county horticultural committee, Messrs. Bisbee, Butler and Bergtholdt. Mr. Bergtholdt stated that some varieties of plums were declining in production and that there were many factors to be considered. Those present gave various reasons to account for the decline, among them being the following: four dry falls and winters, poor irrigation methods, lack of fall spraying to control brown rot and peach blight, plowpan, unfavorable weather conditions, and lack of cross pollination.

J. E. Bergtholdt, H. E. Butler and Dr. O. L. Barton were appointed a committee to conduct a campaign to secure a specialist to study the situation and also to secure a branch deciduous experiment station. Petitions will be prepared and circulated among growers.

In response to the appeal of plum growers Prof. A. H. Hendricksen of the University of California was detailed to make a preliminary survey of the situation. Arrangements are to be made, if possible, for extensive experiments this fall.

SWEETS FOR US

Cuban official statistics show exportations of 163,716,219 gallons of refined molasses in 1918, of which amount the United States took 161,023,117 gallons. During the same year 57,137 gallons of crude molasses were exported to the United States.

EVAPORATION OF GRAPES

Explanation of the principles of grape drying by evaporators is given in a recent University of California publication based on the work of the university farm evaporator during the past year. "Drying has proved to be one of the most feasible methods of converting the wine grapes of California into a non-perishable salable product," it is stated. "In the hot interior valleys, where the grapes ripen early, the fruit may be dried successfully on field trays in the vineyard. However, at least 50 per cent of the wine grapes are grown in regions where the grapes ripen so late that sun drying can not be safely undertaken because of the danger of loss through early fall rains." Written by W. V. Cruess, A. W. Christie and F. C. H. Flossfeder, the circular is available by writing for Bulletin No. 322, College of Agriculture, University of California, Berkeley.

CIRCULAR ON FRUIT JUICES

"Unfermented Fruit Juices" is the title of a recent circular issued by the college of agriculture of the University of California in which recipes are given for the making of grape juice, pomegranate juice, loganberry juice,

and apple juice, "queen of fruit juices." The article was prepared by W. V. Cruess.

In view of the high price of sugar the manufacture of fruit juices offers a means of preserving fruits which may otherwise go to waste for lack of sweetening, it is stated. Berry growers situated at too great a distance from the fresh markets may solve this problem by the manufacture of juices. This Circular 220 may be had free upon application to the College of Agriculture at Berkeley.

NEW DIVISION OF THE STATE DEPARTMENT OF AGRICULTURE

The arrival of Professor Geo. P. Gray, in charge of the office of agricultural chemistry of the California department of agriculture, with his aides, Professors Geo. E. Colby and A. C. Wilber, is announced by Director Hecke today. The office of agricultural chemistry was provided for by act of the last legislature creating the department of agriculture, and the actual removal of the laboratories from Berkeley began on July 1, 1920. This branch of the department is charged with the important work of investigation of fertilizers, and analysis of insecticides and spray material.

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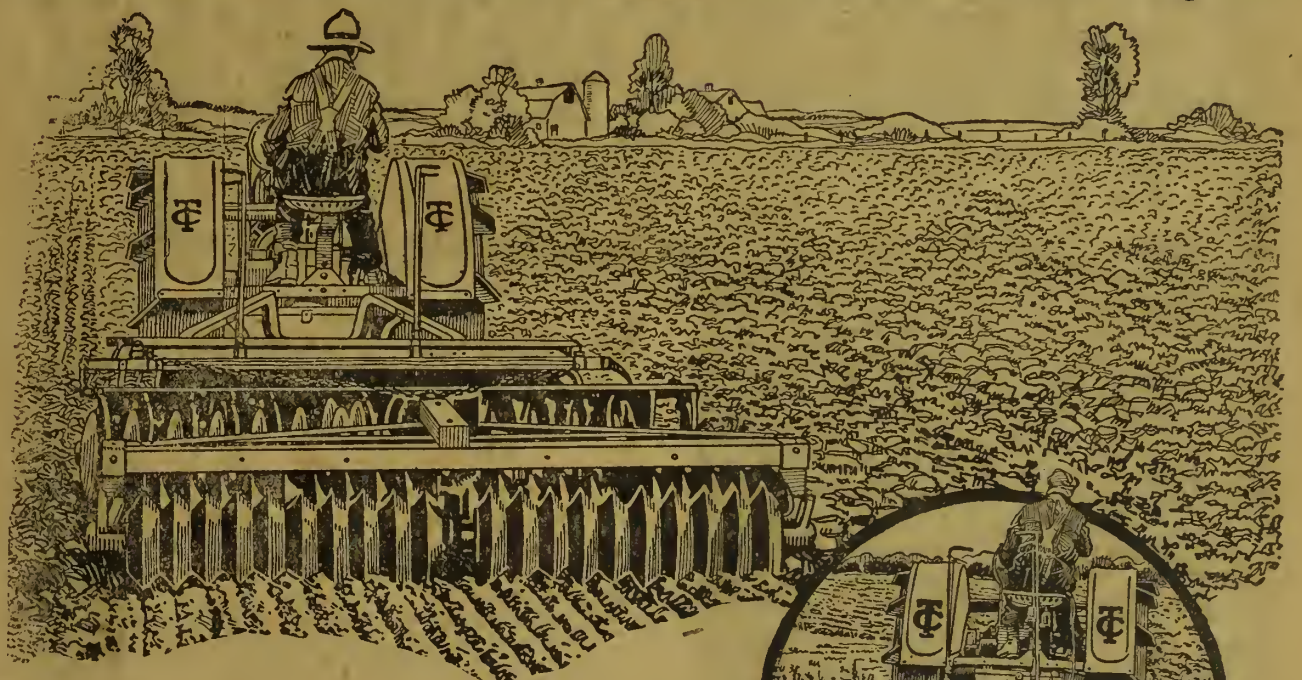
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RHUBARB---Wagner's Giant Plant Now

July is one of the best months to plant. Growers who planted last July and August have already harvested over 15 tons per acre netting \$1,000 eleven months from planting. For further information write J. B. WAGNER, Rhubarb Specialist, 1550 East Villa St., Pasadena, California.

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12-20 Kerosene Tractor with 16-valve engine



Surplus Power Speeds Work and Saves Money

TWIN CITY 12-20 with its great surplus power insures you good work in any going—a quick finish—a bigger saving both in labor and money. In its steady pull, with double discs and packer, it shows the same Twin City dependability as in plowing, harvesting or belt work.

This is due to its Twin City 16-valve (valve-in-head) engine which turns all of the fuel into power—clean power—with every charge. It is due to the Twin City's combination of unusual strength with light weight in heat-treated alloy steels.

In a word, it is due to the science and practical knowledge which one of the largest institutions in tractor-building has put into the Twin City. It is the product of ten years' development by a \$7,000,000 organization with branch warehouses, distributors and dealers throughout the United States and Canada to give you immediate service when you need it. Built to do the work—not to meet a price.

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Castor Beans

Where can I sell castor beans?—Subscriber, Escondido.

The Globe Milling Company, Los Angeles, is pressing some oil and it is possible can handle the beans.

Farm Title Accepted by Land Bank

We recently stated that the federal land bank accepted the Torrens title, but in order to have authentic information we wrote the bank at Berkeley asking as to the attitude regarding these titles. We are glad to report that it does accept them. In answering our questions to the bank Lysander Cassidy, registrar and attorney, says:

"Generally speaking, our practice as to so-called Torrens title certificates has been as follows: Subject to requirements hereinafter made such certificates are accepted after they are one year old. Evidence required that

there are no liens in the federal courts and no bankruptcy or other proceedings pending in the federal courts affecting the property. In case the property is described by reference to a recorded plat, we require a plat to be furnished, showing the dimensions, shape and acreage of the property. We reserve the right to require an abstract of the Torrens title proceedings in any case where inquiry reveals that the purpose of the suit was to remove some substantial defect in the record title of the applicant for the loan. In case the certificate shows a subsequent deed executed by an administrator, executor, receiver, sheriff or some other person in some official capacity under and by virtue of court proceedings, then we require abstract of such proceedings so that we can determine that such proceedings are regular. The requirement as to a plat is made because the so-called Torrens title law makes no provision for a plat, and it is impossible to determine from the certificate, in case

the property is described by reference to a plat, the shape, dimensions or acreage covered by the description in the certificate."

Cheap Paint

In your issue of July 3 you ask for recipe for a cheap paint. For a cheap roof paint eight pounds of metallic lead mixed well with one gallon linseed oil, to which may be added about three gallons of creosote. This paint gives an excellent roof preservative. Keep well stirred while applying.—Cash Nursery, Sebastopol.

The quality of this paint cannot be gainsaid. Linseed oil and creosote make about the best shingle stain or paint on earth, but unfortunately with linseed oil more than six times as expensive as it was five years ago and with creosote especially high the above provides rather expensive paint.

Clearing Pipes from Sink

Do you know of any acid that will dissolve soft soap in sink pipes which have been filled with grease? Lye has been put in, which seems to have formed a soft soap that hot water will not cut.—Subscriber, Sebastopol.

We have never failed in clearing the pipes with lye. We usually empty a

quarter or perhaps half a pound of the dry crystals on the strainer over the outlet. This is carefully washed down, or at least half of it, into the gooseneck underneath the sink. If boiling water is used for this purpose greatest care must be used or an explosion may occur. We have usually found cold water or lukewarm water sufficient, and there is no danger in pouring this over the small pile of lye. After lye has remained a few hours or over night the screws of the strainer may be taken out and the garden hose used (where one has water under pressure) to force the water through the gooseneck and the pipes. This generally washes not only the remaining lye out of the sink and the pipe but also dirt, grease, lye and everything down the line. This is very effective where the end of the small coupling on the hose is forced down into the end of the pipe and full pressure is turned into the waste pipe of the sink. Where there is no water under pressure boiling water in quantities should accomplish the removal of the grease. In case it does not, then we would resort to gasoline in sufficient quantity to drive all the water out of the gooseneck and follow this with the hot water, that is, after it has remained in the pipes for a few hours. There also are rubber plungers with cup like form which may be used to force water down the line.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Division of Estate

A father dies, having several children, of whom one died a number of years before, leaving one child. The father leaves a will distributing his property between the surviving children but does not mention the child of the one who is dead. Will the court give to this child its parent's share of the estate, even though no claim is made for it, and divide the balance according to the will?—Subscriber, Terra Bella.

The code provision in this respect is that when any testator omits to provide in his will for any of his children or for the issue of any deceased child, unless it appears that such omission was intentional, such child or the issue of such child has the same share in the estate of the testator as if he had died intestate. On information being given to the court in petition for distribution of the existence of such child, it would undoubtedly be the duty of the court to follow the provisions of this section of the code, although, of course, that does not affect the matter that the child whose name was omitted from the will might give the property to his uncles and aunts.

Paying Board

A grandfather has been living with his daughter for three years. Can he be made to pay for his board? He has helped a little on the place, but very little.—Subscriber.

In order to authorize compensation either way in such cases, the courts have almost uniformly held that the circumstances must be such as to warrant the inference that it was the expectation of both parties that compensation should be made, and in this respect it has been held that it is the expectations of the parties existing while the relationship continues, that is to control, and that any circumstances occurring afterwards can

HYATT

ROLLER BEARINGS

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B. F. Avery
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After long field tests, manufacturers of these plows have adopted Hyatt Roller Bearings for use in coulters.

Experience has shown that plows, as well as other implements, must be built as well as the tractor—must be able to work hour after hour and day after day, giving constantly dependable service.

Hyatt Bearings keep plow coulters running straight and true and need oil but once a season. They add to the life of a plow and are designed, built and installed for permanent service, never requiring adjustment.

This is typical of the advantages that Hyatt Bearings provide in other farm machinery, such as tractors, threshers, binders, wind mills, etc.

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not convert that into an implied contract which was not so before. Where there is a blood relationship between the parties it may be well inferred, in absence of a direct understanding to the contrary, that pecuniary compensation was not expected by the one performing the services. This rule would also apply to any contract or agreement for the payment of board or lodging.

Torrens Title

Is the Torrens title law in operation in this state? If so, how can one get in touch with it?—Subscriber, Chula Vista.

The Torrens title law has been in operation since 1915 and specially availed of in the southern portion of the state. Many hundreds of parcels of city property have been brought under its operation. For any individual to bring his property under the operation of the act entails a rather high initial cost, but this objection has been largely obviated by combining a number of parcels of property belonging to different owners in one general proceeding so that the initial cost is greatly reduced as against each individual parcel. After the court proceeding these parcels are not in any way bound together, but this course is taken merely for the purpose of lowering the initial cost. There are throughout the southern portion of the state, to the knowledge of the writer, several concerns who handle Torrens title proceedings, and it is only necessary for any person desiring to bring his property under this act to get in touch with some one of these concerns. The first proceeding is to file a verified petition in the superior court of the county wherein the land is situated, stating the name and address of the applicant and facts concerning marriage relation, description of the land and improvements, value of the last county assessment, and the length of time for which the applicant and his immediate predecessors in interest have been in actual and exclusive possession of property. At the time of filing the petition an abstract of the title must be also presented, but in this respect a certificate issued by any title insurance company is sufficient to the date thereof. It must also be shown what incumbrances there are on the property and the names of parties owning the adjoining property. Upon the filing of the application the court issues an order that all persons appear in court on a date stated in the order and show cause why petition should not be granted and registration directed. This notice must be published for 30 days in the county and served upon any incumbrancer and bordering owner or other person mentioned in the petition. If no one appears, then the court hears the petition, and if found to be true, directs the registration of the land. If anyone does appear and object to any of the statements of the petition, then the court hears the objection and gives its judgment after hearing the evidence. Upon registration with the county registrar a certificate is made up which describes the land, its owner, and the condition of the title. This certificate thereafter takes the place of the title deeds and certificate of title under the old form of procedure. The applicant pays to the registrar an amount equivalent to one-tenth of one per cent of the assessed value of the land with improvements; this amount goes into the insurance fund which is employed to insure all titles under the act. After property is brought under the act, subsequent

transfer or incumbrances are all made exclusively by the registrar of titles and not by the recorder. No further insurance fees are entailed and the cost of changing title or evidencing an encumbrance is approximately one dollar, which is about the least charge made by the recorder alone for recording documents. The act is a highly beneficial one in many respects as the title of the property is quieted by a judicial decree binding against the world, and is insured by the state of California. The only great objection has been the initial cost of bringing property under the act, together with the length of time required and the inexperience of parties dealing with land under this proceeding, but as time goes on many persons are of the firm belief that it will supplant the cumbersome and expensive system now in vogue in respect to the recording of conveyances and the guaranteeing of titles by private corporations.

RAISINS TO THROW AWAY

(Continued from Page 67.)

use the pickers when they are in his district and available. Second, the fear of loss from early rains. Third, lack of information regarding the

method of testing for sugar. The first two may be considered very real and legitimate reasons; the third is almost without excuse.

When the grower learns more about the operation of testing for sugar and realizes more fully how very simple the process is, and practices it, he is in a position to know when he can best use the picking crew and can often trade his picking turn with some neighbor who may have fruit which has ripened a little earlier due to soil or other cultural conditions. If the vineyard is a large one the grower can by frequent tests determine which block should be harvested first. Suppose by so doing the grower is only enabled to hold off a sufficient length of time to gain one degree of sugar, surely a saving of \$2.50 per ton of fresh fruit, or better, is worth a little effort.

As for the possibility of rain damage, it would seem from the above facts that the progressive grower could well afford to pay interest on the investment in a good emergency dryer out of the savings he would realize from extra raisin tonnage, and possibly he could pay for most of the extra labor in the same manner.

In spite of these facts there are many growers who will this season actually lose more money by picking before the grapes are ripe than they would have received for their entire crop when there was a so-called "over-production of raisins" prior to the organization of the raisin association.

The raisin association is interested

in the question of a higher average sugar content not only because it means greater returns per acre to the grower but because such grapes invariably make raisins of much better quality. The consumer receives a better product and in time there is a response expressed by increased demand for raisins which benefits everyone.

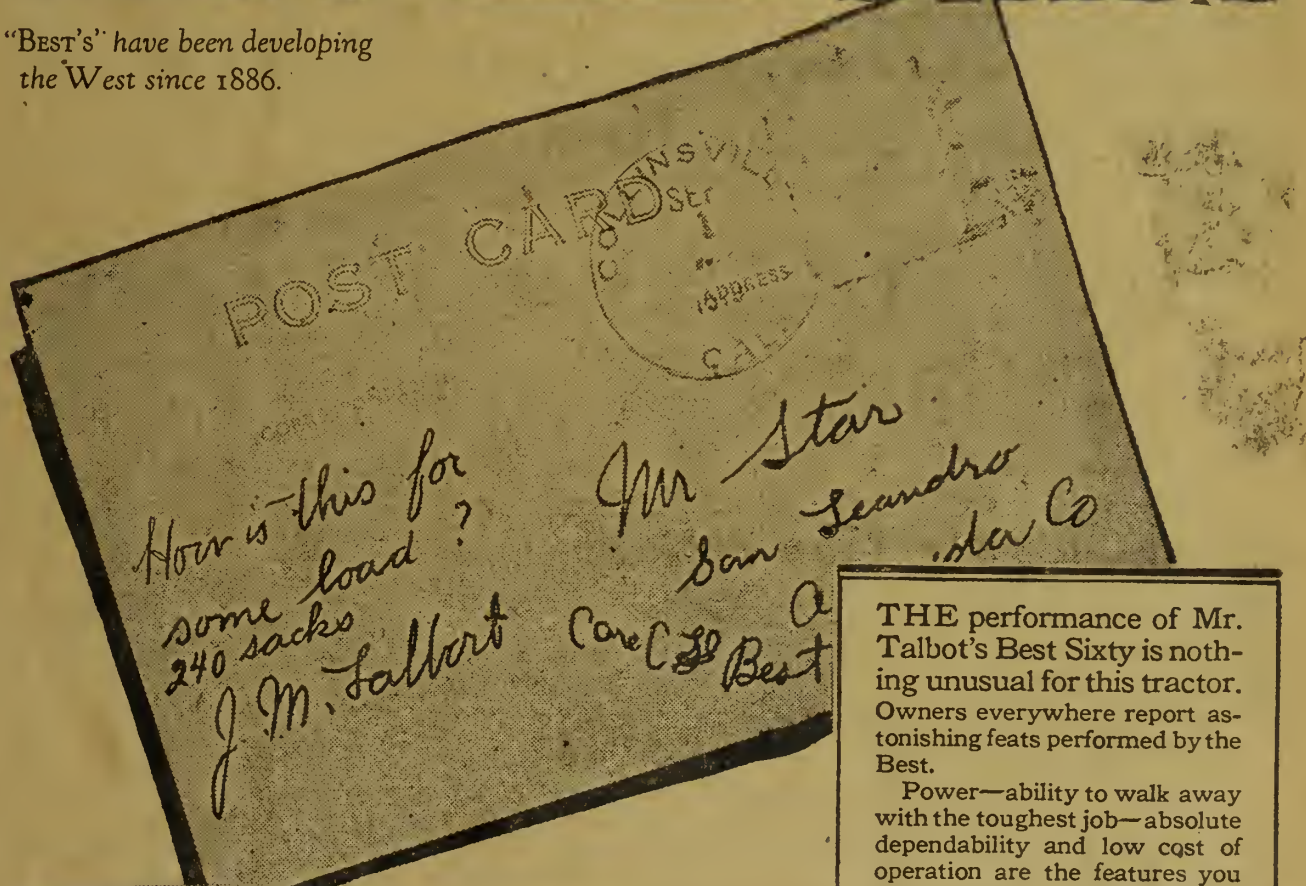
Of course, the fruit must be well grown to realize the highest possible quality, but there is probably no other single factor which contributes more toward the making of a good product than does a reasonably high sugar content.

For the purpose of maintaining and improving the standard of quality for Sun Maid raisins the association is this year launching a sugar testing campaign and is placing saccharometers in most of its plants. The field men will also carry testing equipment so that no grower need be in ignorance of the condition of his crop at picking time, and he can then use his best judgment regarding the local labor situation and the possibility of rain damage to his curing crop.

In recent years a great deal of money has been spent for improved machinery and equipment to handle the raisin crop after it is delivered by the grower. These improved methods of handling and national advertising campaigns are largely responsible for the increased popularity of California raisins, but no machinery or advertising will do the amount and kind of good that "Old Sol" will do for the raisin if given a chance.

BEST TRACKLAYER SIXTY

"Best's" have been developing the West since 1886.



THE performance of Mr. Talbot's Best Sixty is nothing unusual for this tractor. Owners everywhere report astonishing feats performed by the Best.

Power—ability to walk away with the toughest job—absolute dependability and low cost of operation are the features you should expect to find in your tractor. And the Best supplies these in full measure.

Mechanical design, quality of materials and painstaking, skillful workmanship are responsible for Best performance. Write for catalog describing these and other features of the Best Tracklayer Sixty Tractor.

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A yearling Poland China boar of strictly big type breeding that carries the size, stretch and quality so much desired by the breeder and feeder.

Write for prices and information on most anything in the way of breeding stock.

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Do You Know?

That The Westerner is a half brother to the sire of Caldwell's Big Bob, Grand Champion at the National Swine Show in 1917.

The Westerner heads a herd of sows that have no superior on the western coast.

Remember our big public sale Sept. 27th. It will be an event in Poland China circles.

ALEX. D. McCARTY

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Lendorris Liberty Bond, Skyrocket and Lendorris Liberator

Three good sons of three good sires are our herd boars. We will have a few representatives of our herd on exhibit at the state fair. When in need of choice Poland China breeding stock, write for our prices. You will find them very reasonable.

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McCune's Quality Herd

of BIG TYPE POLAND CHINAS

The home of Edith Rose, King's Massive Orange and many other noted individuals. A McCune bred Poland China is backed by many generations of the best breeding.

H. D. McCUNE,

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King's Big Bone Leader

A Grand Champion, and Giant Bob 2nd, a son of last year's Grand Champion, are my herd boars. They are siring a high class of Poland Chinas. Write for prices and information.

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Trewhitt's Big Type Polands

Are the result of careful mating and selection. Size and feeding quality have always been essential features in this herd. Write for prices and information. I can interest you.

W. D. Trewhitt

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I AM ALWAYS PREPARED

to offer exceptional bargains in

POLAND CHINA

breeding stock and can fill your order whether it be choice pigs or mature animals. Write for information. I can please you.

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The Forrestview Herd of Polands

I am now located on my new place near Chico, where I am better prepared than ever to care for my customers. My intention is to raise more and better Poland Chinas in the future.

J. H. Cook

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For easy feeding, early maturing Poland Chinas,

The Get of Model Big Fellow

The Reserve Grand Champion of the last state fair, the strongest Poland show ever held in the state, are the kind to buy. Your correspondence solicited.

J. F. McSwain

Merced, Cal.

Sunny Side Farm

where efficiency is our watchword and the production of extra heavy milking Holsteins and big type Poland Chinas is our specialty. A few choice animals of either breed or sex for sale at all times at reasonable figures. Write for information.

R. F. Guerin

Visalia, Cal.

Will the Dairy Cow Come Back?

By M. E. Bemis



FEW years ago the Salt River Valley of Arizona was noted as one of the leading dairy centers of the country. Probably there was no place in the United States that made the percentage of increase in number of dairy cows that was made here. There was also a marked interest in registered stock. From about 12,000 head in 1910 the number increased to 60,000 or more in 1917. Good markets, extremely favorable climate, alfalfa for feed, make a combination of favorable circumstances which was the incentive to rapid increase in numbers of the dairy cattle up to 1917.

The cotton acreage has been increasing rapidly and the number of cows has been declining. Those of us who have watched the exodus of dairy cows have felt from time to time that the low point had been reached and that the upward climb would again begin. Something like a year ago Cultivator readers may remember that in an article I stated my belief that the low tide in the dairy industry had already passed. I guessed wrong. If there is any consolation in having company when one makes a bad guess, it might help some to think that there were many others who made the same prognostication at that time. The one thing we did not figure on, and the one thing that was unexpected, was the greatly increased price of cotton, particularly long staple cotton. At the beginning of the cotton picking season in 1919 cotton opened up for around 70 cents; some sold for less. Then at about the peak of the season prices began to rise and, contrary to any precedent in the history of our cotton market, there was a steady rise and a demand which moved the cotton almost as fast as ginned. Finally the price reached \$1.25 a pound and in a few instances sold for even more than that. The consequence was that men who had planned to reduce their cotton acreage decided to increase it. Dairymen who had conservatively figured that they would cull their dairy herds, retaining the best, decided to dispose of them altogether. Others, allured by flattering offers, either the high price for the land or a high rental price, disposed of their stock, frequently at a sacrifice, believing that the increased profit on the land was more advantageous than the prospects of reasonably fair prices for the dairy products.

This condition obtained throughout the entire valley, and day by day carloads of dairy cows were shipped out; others went to the butcher. At the present time it is probable that the number of dairy cattle is less than it was in 1910. Whether the end has been reached or not I don't know. One favorable thing about it is that in the passing of the dairy cows from the Salt River Valley there has been a stocking of the farms in other parts of the state; while a great many of these cows have been shipped out of the state, a considerable number have been retained.

Up in the undeveloped country at the foot of the White Mountains, where the new railroad from Holbrook has opened up a new lumber camp, there is a considerable number of new settlers who have located on lands which they have been able to develop, and in consequence of the markets open to them by the building of this railroad, they have opportunities to do exceptionally well. It seems to us rather strange, but nevertheless true, that these farmers are producing cream which is being shipped on this branch line to Holbrook and then on the main line to Phoenix creameries, a distance of approximately 500 miles. In the Tucson district there has also been a marked increase in the number of dairy cows. In the Casa Grande country one dairy alone has 500 head of cows. Cream from this dairy will be shipped largely to Phoenix, so that from a broad state wide viewpoint the situation is not as serious as it might seem.

In the Salt River Valley land prices have advanced to a very considerable extent. I recently asked the manager of the Armour interests, who have two condensed milk plants here (both of which have been closed on account of the shortage of help), if he consid-

ered that there was any prospect of a revival of the dairy interests. He answered: "Yes, decidedly; we will keep our plants intact with the exception of a small amount of machinery, trucks, etc., which have about served their usefulness. All modern machinery will be retained and we expect to operate again when the time is ripe. I look for a change in the sentiment regarding cotton raising and a return of a considerable acreage to alfalfa." I asked him if he thought it would be possible to operate a dairy successfully on land priced as high as Salt River Valley land at the present time. He replied that he thought it was not only possible but practicable, but it meant the use of the best cows. I asked then what he considered the standard requirements of cows that would pay on land worth \$400 and \$500 an acre, and suggested 400 pound cows. He replied that cows producing 350 pounds of butter fat should pay provided good management was used.

Here and there throughout the valley I find many who are holding on to their dairy cows, like Derby Rucker, one of our farmers who has made himself a home and has stayed with the various vicissitudes of the valley fortunes for the last ten or 15 years. He says: "I am going to stick to the cows and chickens awhile longer, anyway. I have just finished harvesting 27 tons of oat hay from a five acre field, and as long as I can do this I am satisfied to keep the dairy and the chickens without going in heavy for cotton."

Henry Renaud (who, by the way, is our pioneer in the breeding of registered Holstein cows in this valley), says:

"There are only about one-tenth as many dairy cattle in the valley today as there were a few years ago, but I believe that the time is coming when there will be as many in the valley as there were at the time of the peak of our dairy industry."

Mr. Renaud is holding his cows, selling the surplus only as has been his custom for several years.

The George Brothers, who have operated a retail dairy out on north Central Avenue north of Phoenix for the past five or six years, state that they are going to stay with the dairy industry indefinitely. That means they have not set the time when they will dispose of their cows to raise cotton. They have a small acreage of cotton but are still milking a large number of cows and are making no plans for changes in the near future.

I learned of many cotton farmers who expect to put a considerable acreage back into alfalfa this fall. This is logical, as some of the land has been in cotton for several years and for best results should be rotated.

No one can foretell what the price of cotton will be this fall. Many expect to see it held steady at around \$1. Even if it does average \$1 a pound (and there is good reason to believe that it will), it seems probable that the area of land in cotton has now reached the height and there will be a gradual change so that only land which is best adapted to cotton will be put in cotton, and that which has begun to show a marked deterioration in yield will be returned to alfalfa in a rotation which will again fit it for cotton. If this proves true, then we may expect to see a gradual increase in the number of dairy cows, but with this increase will come better methods than were in vogue before. There will be few dairies established without the silo as an adjunct. There will be fewer cows producing less than 300 pounds of butter fat a year. There will be more cow testing associations and a higher plane of dairy management.

A DECREASE IN HOG POPULATION

There are in the United States at the present time approximately 70,000,000 hogs, and according to a government report this country will experience a shortage of hogs this year. With a ten per cent shortage of brood sows, as we have at present, it will mean a shortage of seven to eight million hogs.

Facts in BLACK & WHITE

Purebred Holstein Cows Return \$1.54 for One Dollar of Feed

Even though you may regard your farm as a diversion or your hobby, you would doubtless prefer to see it self-supporting, and perhaps take still greater pride in it for that very reason. Here are two or three facts! Holsteins are the largest, most vigorous, most even-tempered, the easiest-cared-for breed, and the greatest yielders of milk in the world. Their milk is the most evenly balanced in fat, sugar and proteins, and for that reason easily digested. It is everywhere recognized by the medical profession as absolutely the best for infant and invalid feeding as well as for general use. A herd of Holsteins will give you on the average \$1.54 for every dollar's worth of food they eat. Send for our free literature and look it over. Perhaps you will be interested in buying Holsteins.

THE HOLSTEIN-FRIESIAN ASSOCIATION
120 Hudson Street
Brattleboro, Vermont.

JERSEYS

Venadera Herd

Register of Merit Jerseys,
Senior herd sire Altama Interest, sire
of 12 cows in Register of Merit.
Junior herd sire Jap's Perfection Owl,
a line bred Springfield Owl bull.
Guy H. Miller, Modesto, Cal.

Young Jersey Bulls For Sale

One at the head of your herd will pay
big dividends on his cost. Write to

W. J. Hackett

Modesto Cal.

Jersey Bull

FOR SALE

A fine straight one, bred right, priced
right.

S. F. Williams
Chico, Cal.

Member Orland Jersey Cattle Club

For Sale--Registered Jersey Bull

17 months old. Sire: Noble's
Mayfair Hero, No. 122139. Dam:
Buttercup Loretta, No. 247777. A
very fine individual, at a bargain.

Arden Dairy

El Monte Cal.

Eastmont Jerseys

Will Sell Crack Young Show Bull
Financial Eugene 184816

Calred Nov. 26, 1919 Priced to Sell

Write Today

Grant A. Brown El Monte, Cal.

Bunting's Mission Herefords Are Profitable

They will increase cattle profits
by adding pounds of beef to
every steer sold. For the best
of breeding and individuality
visit my herd and see the kind
that win at the best shows.
Prices reasonable. You'll be
welcome.

JOHN A BUNTING

Mission San Jose Cal.

DIAMOND G HEREFORDS

A few choice young bulls, Big, heavy-
boned husky fellows sired by DON PER-
FECT 2nd, one of the best sires in the
West. Priced right and guaranteed.

H. H. Gable Esparto, Cal.

The advertisers in the California Cultivator are
known to be reliable and we recommend them to our
many subscribers.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
September 23, Allana Farms, Dixon.
Shorthorns
August 11, Butte City Ranch.
Duroc-Jerseys
July 21, Elmer Lamb, Ceres.
July 29, Conejo Ranch, Newbury Park.
July 28, Winsor Ranch at Los Angeles.
Hampshires
July 30, Conejo Ranch, Newbury Park.
Poland Chinas
August 21, Merced County Poland China
Breeders' Association, Merced.
September 27, Hugh C. Shinn, A. J.
Elliott and Alex D. McCartv, Tulare.
October 6, Kings Co. Poland China
Breeders Assoc., Hanford.
Shropshire Sheep
August 11, Butte City Ranch.
Berkshires
August 11, Butte City Ranch.
August 14, Southwestern Berkshire
Congress, D. J. Bastanchury Ranch, La
Habra.

The J. C. Craig herd of Durocs at Owensmouth is now to be accounted one of the leading herds of the state from the standpoint of individuality and blood lines represented. Within the past 12 months the foundation has been laid anew through expert selection from the best herds of the Middle West. Regardless of cost, Mr. Craig has secured just what he wanted. The big junior yearling boar Jack's Cherry Vic is pronounced a real representative of the big type hog. He is well proportioned and symmetrical, and he conforms strictly to the type of Duroc that has taken the Middle West by storm the past two or three years. The Craig herd is now to be based on high backs and strong underpinning, with all the stretch, vitality and good feeding quality that the breed commands. One of the leading sows is Wanda, a daughter of Great Wonder I Am. She has raised a remarkable litter of pigs, now eight months old, got by Pathfinder's Likeness, a son of old Pathfinder. Three boars and three gilts of this litter are still to be seen at the ranch, two young boars of the litter of eight raised having been sold. The dam is now in the East to be rebred to same sire. An outstanding boar of this litter, reserved for the show herd, is Pathfinder's Likeness Jr. A close second is his littermate, Pathfinder's Likeness Wonder. Choice Lady Orion is another Eastern sow raising litter of seven March pigs by Pathfinder's Repeater. Ruby Pathfinder is a fine yearling sow with nine pigs by Sensation Climax. Ranch Lady 2d, by Grand Model 8th, has fine litter by Winsor's Giant Orion. One of these young boars is sold to the Sonora Land Development Company, Sonora, Mexico. Two of the big yearling sows, one of them a daughter of Giant Wonder I Am, are now in Iowa to be mated to the great boar Pathfinder Supreme, the world's champion futurity boar of 1919.

Grant A. Brown, owner of Eastmont Farm Jerseys, is indefatigable in the interest of his favorite breed. Today Brown is getting within close range view of his hobby for an exclusive herd of Jerseys bred and reared at Eastmont Farm. At head of the herd of 47 females stands the well known line bred Financial King bull, Lady's Shylock's Financier 148173. There are 14 of his heifers reserved for the home herd and 11 heifers sired by his full brother. One of them, a 16 months old show heifer, is out of Shy Lady Viola, whose record is 501 pounds fat. She was grand champion at both Los Angeles and Riverside last year. Gertie of Willowood made record of 568.17 as senior four year old, showing 6.34 per cent fat. She has five months old bull calf by herd bull that is in a class by himself. Her yearling heifer won in every class last year. The Eastmont herd will be in the lineup at the shows again this year.

The Italian Vineyards, Guasti, have added the outstanding sow, Rival's Wondress 48th, to their large herd of Berkshires. She was secured in the sale of Piping Brook Farm, Greenwich, Connecticut, at the price of \$575. In breeding she is a combination of the breed's greatest blood lines, being by Lord Premier's Successor Jr., a son of the world's famous Lord Premier's Successor, and out of a daughter of Rival's Champion, whose blood is found in some of the coast's leading herds. She is bred for early fall farrow to Farview Ruler, grand champion at six state fairs, Eastern Berk-

HOT WEATHER

the season when a

DE LAVAL SEPARATOR

saves most over
any other separator
or skimming system



IT'S A GREAT MISTAKE for any dairy farmer without a separator or using an inferior machine to put off the purchase of a New De Laval Cream Separator in the summer months especially with butter-fat at the present unusually high price.

Great as are the advantages of the New De Laval over all other separators, as well as over any gravity setting system, at every season of the year, they are even greater during the mid-summer season than at any other time.

This is because hot weather conditions occasion greatest butter-fat losses with gravity setting and render it most difficult to maintain quality of product with any gravity system or unsanitary separator, while, moreover, the quantity of milk is usually greatest, and any loss in either quantity or quality of product means more.

Then there is the great saving in time and labor with the simple, easy running, easily cleaned, large capacity New De Laval machines over all other methods or separators, which naturally counts for more at this time of the year.

Hence the great mistake of putting off the purchase of a New De Laval Cream Separator in summer, whether you already have a poor machine or none at all, and every dairy farmer should keep in mind not only that a De Laval will pay for itself in a few months but may, if desired, be bought on such liberal terms as to actually save its own cost while being paid for.

Every claim thus made is subject to easy demonstration, and every De Laval local agent is glad of the opportunity to prove these claims to you, in your own dairy, without cost or obligation on your part.

Why not see the nearest De Laval agent at once?
If you do not know him, write to the nearest
office for catalog or any desired information.

DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

61 Beale Street

San Francisco, Cal.

TESTIMONIALS

"Cows Increased in one week 3 per cent in milk."

A. L. McCULLOCH, Alpaugh, Cal.

"I never saw hogs do so well or grow so fast as on this molasses ration."

C. H. HARTWIG, Yuba City, Cal.

"It has enabled me to keep my stock in better condition at less expense."

J. M. HENDERSON, JR., Sacramento, Cal.

"Have one calf that refuses to drink new milk—prefers skim milk with molasses. What do you know about that?"

R. HECKLEY, Santa Rosa, Cal.

"It has been a great advantage in getting the stock to clean up the roughage."

H. H. AMES, Chowchilla, Cal.

"One cow will turn down the choicest handfuls of alfalfa hay unless it has been 'Molassed'."

REDWOOD AYRSHIRE FARM, La Honda, Cal.

MOLASSES

cheaper than hay, but has same feeding value as corn or barley.

W. H. YOUNG COMPANY

58 Sutter Street

San Francisco, Cal.

Over Two Million Calves

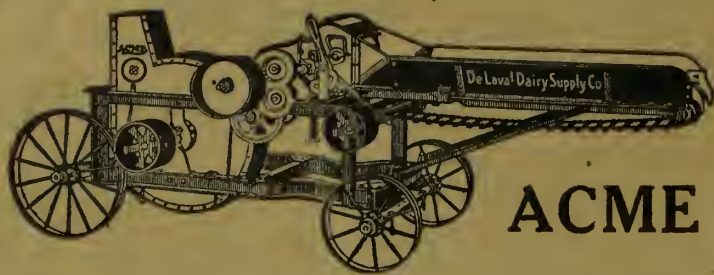
protected against Blackleg for LIFE with ONE treatment touch for Purity Blackleg Agglutinin (Germ-Free Vaccine made by the Kansas Process). Absolutely safe to use. Cannot transmit disease. Brand, castrate, etc., when you vaccinate. OTHER PURITY PRODUCTS: Anti-Abortion Vaccine for Cattle; Hemorrhagic Septicemia Vaccine for Cattle, and Sheep; Anti-Hog Cholera Serum, and High Count Mixed Infection Vaccine for Swine. For service that counts write, phone, or wire

PURITY SERUM CO., J. L. Thatcher, Mgr. Riverside, California

WHY continue to feed long hay when you can save 25% by chopping it with an Acme Feed Cutter?

If you are interested in reducing the high cost of feeding cows and conserving this year's hay crop we will gladly send you, upon request, the results of a series of feeding tests recently conducted by the University of Idaho.

They prove conclusively that chopping alfalfa hay increases its feeding value 25%.



The Combined Silo Filler, Hay Chopper and Alfalfa Meal Machine Will Make This Saving for YOU

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DE LAVAL DAIRY SUPPLY CO.

61 Beale Street, San Francisco

Milking Shorthorn Bulls

I am offering four young bulls of serviceable age and choice eastern breeding at \$250.00 to \$275.00 each. These bulls are good enough to go into any herd and priced within the reach of all. Write at once for information.

Thos. Harrison

Santa Rosa, Cal.

The Buckland Herd of Poland Chinas

Breeding of distinction characterizes our herd. Careful personal attention to each individual insures a class of breeding stock which is one of the many reasons for our growing business. Your patronage is solicited.

A. Buckland & Son, R.F.D., Fresno, Cal.

Registered Shropshires

Five Yearling Bucks, 12 Ewe and Buck Lambs For Sale
C. J. L. STONEBRAKER, R-2, Chico, Cal.

When Writing Advertisers Mention California Cultivator

shire Congress and the National Swine Show, 1919. In the same sale three sows carrying the blood of Grand Leader 2nd, the boar that won the grand championship for A. B. Humphrey at the P. P. I. E., averaged \$350. The sale average for 37 bred sows and gilts was \$234.

Howard Vaughn, who has been breeding Shorthorns in Iowa for a number of years, has recently arrived in California with the intention of making his home in this state. At the present time Vaughn is associated with George E. Dierssen, Shorthorn breeder, near Sacramento. Vaughn expects to locate somewhere in the Sacramento Valley and will bring out his herd of Shorthorns. Vaughn is a graduate of the Iowa state agricultural college and is well known as a breeder and judge throughout the Middle West.

It is understood that the University of California has secured the services of E. H. Hughes as assistant professor of animal husbandry. Hughes is a graduate of the Wisconsin agricultural college and for the last seven years has been connected with the college of agriculture, University of Missouri. He comes to this state with a splendid reputation as a sound and practical livestock man.

Berkshire breeders who have heard so much recently about the boar, Achiever, owned by J. Francis O'Connor, Castleview Ranch, Santa Rosa, are promised another surprise when O'Connor brings out his senior yearling boar, Enhancer. This fellow is a son of Big Leader and is one of the largest and stretchiest boars that the breed has produced in this state.

There is every reason to believe that the coming state fair will stage one of the best barrow shows yet to be held in this state. The prize list is liberal and the breeders are fitting some very high class representatives of the different breeds. Barrow shows are certain to become popular in California.

Roselawn Stock Farm, Woodland, is preparing a number of calves for the Shorthorn classes this fall and in the lot are several that promise to be troublesome. Several of the calves were secured in the East last winter, two of the most attractive being by the noted bull, Village Beau, and out of extremely well bred dams. Since the recent additions to the Roselawn herd that collection of cattle takes high rank among the top herds of the West.

The admirers of milking Shorthorns should see the young herd bull Count Tickford, owned by Thos. Harrison, Santa Rosa, at the leading fairs this fall. Mr. Harrison has refused more money for this good yearling than any dual purpose bull ever sold on the Coast and is not even interested in selling him as he would be hard to replace.

Among the good junior yearling Poland China boars to be shown at the state fair this year will be Headlight, owned by William Marshall & Son, Sebastopol. This boar was sired by Repeater, first prize junior yearling boar at the National Swine Show last year, and is out of a Disturber sow. Marshall & Son have refused several good offers for Headlight and expect to feature him in a bred sow sale next winter.

Mrs. Eliza Shepard of the Jack London Ranch, Glen Ellen, recently disposed of the Shire horses on the ranch to Thos. Stanton, Wheaton, Illinois, and received on the deal a load of straight Scotch Shorthorn cows that are now en route to California. These cows are of the best families and will greatly strengthen the London herd.

Geo. A. Stingle, El Monte, is able to show his customers and visitors in general a lot of ten young Berkshire boars of his early litters that are a credit to the breed. From one of these litters Mr. Stingle has just now shipped a young boar to a Kansas buyer. They are the get of such sires as Sensational Masterpiece 8th, Ideal Royal Lee and Mills Ames Rival. A litter of nine

are out of the big type sow Natomas Robin Hood and tracing close to the renowned Royal Champion's Best. A Star Leader dam has nine by the Ames Rival sire. Leader's Violet 4th, a granddaughter of Grand Leader, has litter of ten. A fine March litter is that of Poly Queen, got by Sensational Masterpiece 8th. At head of the herd now is the fine boar Prince Laurel 5th, his dam being a daughter of great Laurel's Champion. Fine alfalfa runs for the breed sows and the growing pigs are one of the features of the ranch. Visitors are welcome at all times.

K. S. P. J. Pet Segis, the remarkable junior two year old daughter of King Segis Pontiac Jannek, on test in the James J. Jeffries herd of registered Holsteins at Burbank, has to her credit 21.47 pounds butter from 632.2 pounds milk in seven days, best day's milk 99.6 pounds. As stated in these columns last week, this heifer will be continued on yearly test.

Prospects are fine for a big general attendance at the Conejo Ranch sales, July 29 and 30, Newbury Park. The California livestock breeding public is interested primarily in the rearing of better hogs and more of them, without reference to the color of the hair, and all the finer points that characterize any particular breed; and then, too, there are those who look special-

ARIZONA COTTON LAND

We offer for sale a few select tracts of Arizona Long Staple Cotton land, 160 to 640 acres, at \$40 to \$75 an acre. Some of the finest land to be found anywhere in all Arizona, close to railroad, absolutely free from alkali, hard pan or adobe; no better soil ever lay out of doors. Lies fine for irrigation and an abundant supply of water can easily be developed at depths of 35 to 70 feet on the different tracts. Will produce wonderful crops of cotton, alfalfa, fruits and vegetables. One good crop of cotton or one season's alfalfa crop WILL MORE THAN PAY THE ENTIRE COST OF THE LAND AND WATER PLANT. This land is easily worth two to three times the price asked, which is made for quick sale. We are ready at any time to show any of this land to bona fide prospective purchasers. Call or write at once if you wish to get some of this land being offered at bargain sale. It will not last long.

Buntman & Hall

606 Citizens National Bank Bldg.

Los Angeles, Cal.

Vaughn's Jones

Is a boar that is siring a high class of POLAND CHINAS good enough for the most discriminating buyer. Come and investigate; can show you.

A. J. Van Cleef, Riverdale, Cal.

HAMPSHIRE SWINE

Pure Breds—Both Sexes

FOR SALE

Fairview Ranch

L. L. Beal, Proprietor Red Bluff, Cal.

SICK ANIMALS

BOOK about Sick Horses, Cattle, Sheep, Dogs and Poultry, mailed free. Address Dr. Humphreys' Veterinary Medicines, 156 William St., New York.

ly to the improvement of their own favorite breed. At the big two days sale at Conejo Ranch there is room and opportunity for all. It would be a capital idea to be a "mixer" on this occasion. There will be sold from 80 to 100 head of breeding stock, everything registered and representative of the best in both Durocs and Hampshires. The records amply demonstrate this fact. A cordial invitation is extended to the public to come and see the big hog show.

At a meeting held at St. Louis, Missouri, June 29, participated in by each of the three Poland China record associations, several breed papers and a large number of breeders, a permanent organization, the Poland China Breed Promotion Association, was launched. The new association has for its object the general promotion of the breed, and each of the record associations has agreed to double the recording fees and to use the added receipts in promotion work. It is proposed that the new fees go in effect October 1.

J. H. Cook, formerly of Paradise, is now located near Chico and is making plans to increase the size of his herd. It is his ambition to have a sow herd second to none in the West.

The premium list for the Sonoma County fair will be ready for mailing within a few days, according to Secretary J. Francis O'Connor. Very liberal prizes are offered and every effort is being made to induce the breeders of pure bred stock to make an exhibit. The entertainment program is a very wide one and includes everything necessary to interest and entertain the public.

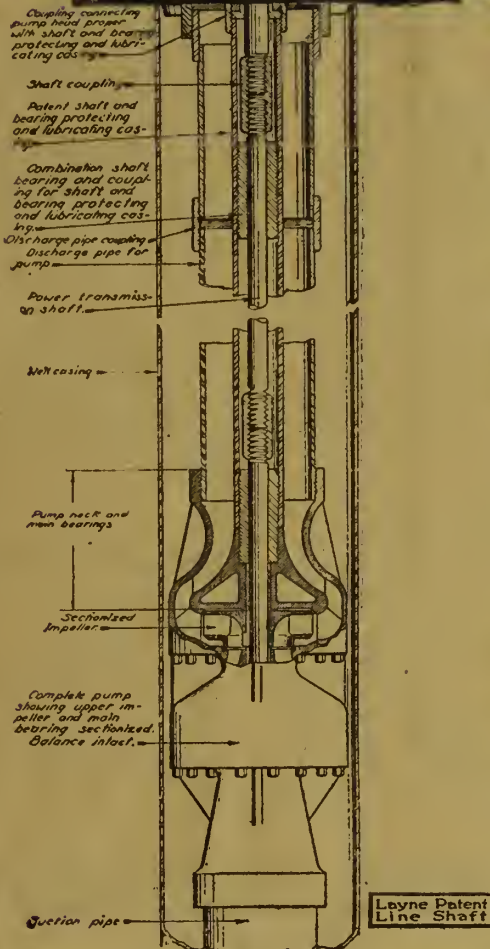
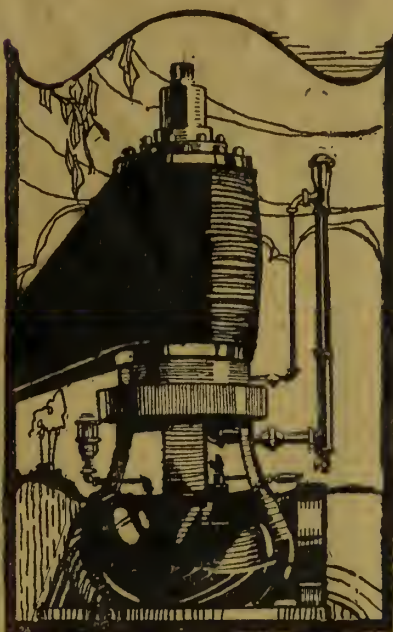
WINSOR RANCH OFFERINGS

The Winsor Ranch sale catalogue, now being distributed, gives ample proof of the leadership of this big institution as the pioneer breeding plant in the Western Duroc field. Among the 40 young bred sows catalogued are numerous stellar attractions. The fact is that Mr. Walker has just about gone the limit of genuine business enterprise to make this offering of bred sows come squarely up to highest anticipations. It is a truism today that the Winsor way is the right way. Walker has combed the older breeding districts for the right blood and the right type of Duroc, so that the alignment of young sows to be presented the public at Los Angeles on July 28 may be accepted as the correct thing in Durocs. Daughters of Great Orion Sensation, one of the most talked of sires in the Duroc world today, will feature this sale. There will be others by his famous litter mate, Orion Sensation. Others are by the great Pathfinder, and others yet by the noted Winsor Ranch boar Great Model, also daughters of the great Orion Fancy King. As a real leader in any public sale ring will be seen Winsor's first prize senior yearling sow at California state fair, 1919. She is a daughter of the noted Putman (Nebraska) boar Great Pathfinder, and she is not only a show sow but a producer par excellence, being the dam of the best young boar ever produced at Winsor Ranch. Her latest litter got by Great Sensation 3rd, the \$8,000 boar, is so highly satisfactory that she is to be sold carrying litter by same sire. Another last minute decision has been to list for this sale the 1916 grand champion Cherry Blossom, one of the tried producers of the ranch. She is known to be the dam or granddam of a long string of the best Durocs in Southern California. She is distinguished as being a half sister to old Pathfinder himself. Two of her litters have numbered 16 each. The great boars Winsor's Giant Orion and Great Sensation 3d are the sires in service for this splendid draft of bred sows. The catalogue is rife with timely information.

LUCKY MAN

"You say you served in France?" asked the restaurant proprietor, as he sampled the new cook's first soup.
"Yes, sir; officers' cook for two years and wounded twice."
"You're a lucky man. It's a wonder they didn't kill you."

The WORLD'S LARGEST WATER DEVELOPERS



The Largest ranch development companies and many of the most Successful ranchers in California prefer LAYNE & BOWLER Turbine (Centrifugal) Pumps Why?

Every prospective pump buyer should request Folder No. 30.

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Castlevue Ranch Berkshires

The Home of ACHIEVER the Boar
and Enhancer, the Other Boar

A few choice boar pigs for sale sired by the above boars. A few choice bred sows for sale at reasonable prices.

Castlevue Ranch, Santa Rosa, Cal.

Italian Vineyard Company Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

BIG PUBLIC SALE OF BERKSHIRE SOWS AUGUST 14TH

Alex. Wilson, Supt., Guasti, Cal.

Bastanchury
Better
BERKSHIRES
LA HABRA, CAL.
E. N. WHITEHORE, MGR.

Our age boar Royal Longfellow 5th is just about as good a boar as any at the age of five years. He is a sire, too. Not many stand on four good feet with large bone, and length and smoothness he has at the age of five years.

It will pay you to pay us a visit. Reasonably priced stock for sale.

Kreso Dip No. 1

(STANDARDIZED)

WILL
PROTECT YOUR PROFITS
BY KEEPING

All Livestock and Poultry Healthy

Effective. Uniform. Economical.

Kills Lice, Mites and Fleas.
For Scratches, Wounds, Scab,
and Common Skin Troubles.

PREVENTS HOG CHOLERA

Experiments on live hogs prove that a 2 1/2 per cent dilution of Kreso Dip No. 1 will kill virulent hog-cholera virus in 5 minutes by contact.

FREE BOOKLETS.

We will send you a booklet on the treatment of mange, eczema or pitch mange, arthritis, sore mouth, etc.

We will send you a booklet on how to build a hog wallow, which will keep hogs clean and healthy.

We will send you a booklet on how to keep your hogs free from insect parasites and disease.

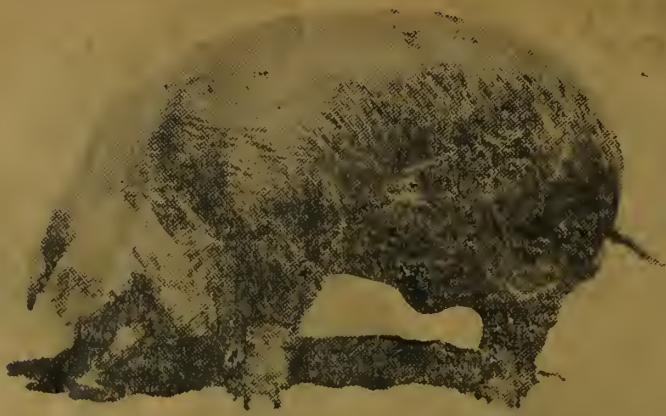
WRITE FOR THEM.

Animal Industry Department of

PARKE, DAVIS & CO.

DETROIT, MICH.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.



CONEJO RANCH AUCTION SALE

Thursday, July 29—Duroc-Jerseys

Friday, July 30—Hampshires

If you are looking for the big, growthy type of hogs, of either breed, which are now preferred by all the breeders, make arrangements to attend this sale. Lunch will be served at the ranch.

Autoists' Information

The ranch is located 40 miles northwest of Los Angeles on the Ventura State Highway near Newbury Park. On the Coast line, go over the Conejo grade and follow road signs. On the Inland route, go to San Fernando, cross over to the Ventura State Highway, and then go towards Camarillo to the ranch.

If you come by train, notify our Los Angeles office regarding transportation.

Write at Once for an Illustrated Catalog.

CONEJO RANCH

Newbury Park, Ventura County
Los Angeles Address

Janss Investment Co., 4th floor Metropolitan Bldg.



The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

The Young Breeder

If the novice or young breeder back in the corn belt has problems, surely the Californian has occasion to watch his step in the land of higher feed prices and less satisfactory marketing opportunities. Here is a bit of editorial advice from Wallace's Farmer of Des Moines, which may be of interest to young breeders of California:

During the past two years quite a number of successful young farmers in the corn belt have started pure bred herds of beef cattle. Some of these have been influenced by the high prices at which such cattle have been selling. They have seen comparatively new breeders make handsome profits and have felt that they might just as well get in on a good thing, and they have plunged rather heavily. Others have started pure bred herds in a more modest way because they have reached the conclusion that common grade cattle cannot be produced profitably on high priced corn belt land in competition with the cheaper lands of the West and Southwest, and that, therefore, the thing for them to do is to grow the best possible class of cattle and get out of this competition.

Some of these young breeders who have plunged will lose out, a smaller percentage of them will be able to make the turn before there is a severe drop in prices. Those who have started in a smaller way, with the idea of sticking to the business and gradually building up pure bred herds of their own, will mostly come out all right, and some of them will become noted as breeders in the years to come.

There are two or three things which should be kept in mind by the man who aspires to become a successful breeder of beef cattle. To begin with, he must have a real love for livestock. The true breeder finds his greatest reward in the satisfaction he gets out of working with his cattle. He has, indeed, the soul of an artist; and if he combines with it the skill of the scientist he will be successful.

He is dealing with the unseen forces of heredity. He has in his mind certain ideals of animal form which he strives to produce in the flesh by selection and mating and feeding. Year after year he works with these unseen forces and finds his reward as he sees his young stock more and more nearly approach his ideal. No man who has in mind the making of money alone can succeed permanently in the pure bred business.

The successful breeder must be as well a skillful feeder, and he must have a rich farm. A study of the history of any of the beef breeds shows very clearly that they originated on rich land. They had their beginnings on good feed and plenty of it, and with this as a basis they reached their present state of excellence through skillful mating. The finest specimens of any of the beef breeds, if taken to thin land and given the same kind of care and feed as that given to the native cattle produced on this thin land, will within a few generations become to all appearances about the same sort of cattle as the natives. The young breeder who fails to recognize this fundamental requirement in the production of the highest type of beef cattle is doomed to failure. There is no use trying to grow such cattle on land that produces poor grass. The farm must be rich and in a high state of cultivation.

Prices of pure bred cattle will not continue as high as they are now. In fact, they follow very closely prices of common cattle. The pure bred business has its ups and downs just as all other kinds of business. But the young farmer of the right sort, who does not plunge beyond his means, who has the instincts of the true breeder, who has the rich land, who will study the principles of breeding and feeding, can feel reasonably safe in starting a pure bred herd in a modest way. He may pay high prices for his seed stock, but if he buys wisely the increase will gradually grow into money for him.

Ten Thousand Hogs

N. B. Balis, in charge of the hog ranches on the big Fontana Land Company's holdings at Fontana, San Bernardino County, says: "We have very close to 10,000 hogs located here, at El Monte and in Santa Monica Canyon, the two latter plants being at garbage stations. On the home, or Fontana ranch, there are at present about 3,500 hogs, 600 of which are

brood sows. The numbers and kind are about the same at El Monte. No finishing is done at El Monte or at the Wade station where we now are, but at 90 to 100 pounds weight they are sent to what we call Station One, several miles up the ranch. At four weeks I turn the pigs into the alfalfa fields from the farrowing pens or 'batteries.' They are left there until 40 to 50 pounds in weight when they are vaccinated. They are then placed in dry lots until reaction is past, being fed on cut alfalfa and mash rations of a considerable variety. When fully recovered they are put back in the alfalfa runs until about 100 pounds in weight when they are sent to Camp One to finish.

In the mash feed we use a variety of material cooked in a giant steel vat. We use tankage, harley, milo, shorts, rice bran, ground cocoa shells, copra meal, beans and other crops grown on the ranch. At present we are getting milo in car lots from Oklahoma. Other feeds are purchased within the state. At this camp we have about 25 feeding floors, six by 18 feet, on runners. These are now mostly in the dry lots but will later be pulled into the alfalfa runs. We have here 160 acres of alfalfa divided into lots of two and a half acres each. Into each of these I turn 50 pigs as soon as weaned. They seem to make little inroad on the crop, for I have to cut it as often as though they were not there.

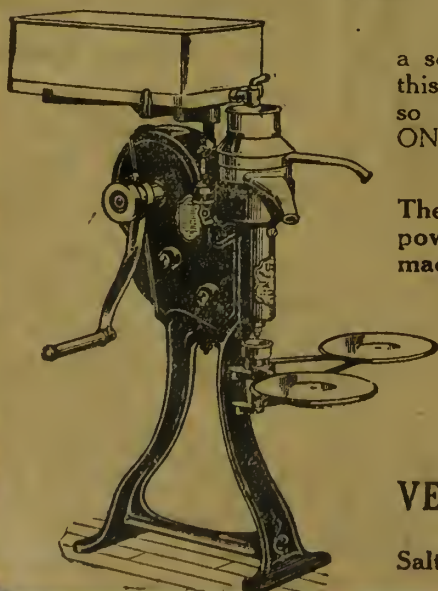
"Our litters for the past two years have averaged 6.6, and the heaviest litter was 18 pigs. We have seven batteries or lots of farrowing pens with a total of 152 and there are 152 sows in them at present. As you will notice, the house part of each pen is in the middle, so the mother and pigs may find shade at all times of day. Suspended doors close down for the winter season. The 'front yard' has a concrete floor upon which we do all feeding. The troughs are for water only and are automatically kept full. The 'back yard' is of natural soil. The front and back sides of the houses are kept hooked up and open during summer, to provide shade and venti-

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for the man who owns a

UNITED STATES CREAM SEPARATOR

"With Perfected Disc Bowl"



Years before "labor shortage" on the farms was such a serious consideration as it is today, the men who make this wonderful separator had anticipated this very condition so thoroughly that even today the United States is the ONLY cream separator that can be run with

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The U. S. can be fitted for gasoline engine or electric motor power without removing the crank—a hand and power machine combined—ready for any emergency.

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Have a United States agent show you what a marvel of easy cleaning the U.S. Perfected Disc Bowl is. You'll say it "shines by comparison." Send for literature.

VERMONT FARM MACHINE CORPORATION

Bellows Falls, Vt. Chicago, Ill.
Salt Lake City Portland, Ore. Oakland, Cal.

lation, but in the rainy season all is closed tightly. The front of each pen is hinged at top so it swings inward for the placing of food on the feeding floor without having to lift it over the fence. Though we have pure bred Durocs, we sell none as such. All our hogs are for pork only."

RABIES

Through proper enforcement of a dog law, the population of dogdom can be greatly reduced. By this means all dogs on which no tax is paid can be destroyed. Compulsory muzzling is not always a wise plan, for in the first place it affords no protection when done in a perfunctory manner, and in the second place cruelty is often inflicted upon the beast when muzzling is resorted to in the proper manner.

All owners of dogs should be compelled to chain them, and all dogs running loose should be destroyed in communities where rabies exist, and this in view of the fact whether animals are suspected or not. All animals bitten by a rabid dog do not take the disease. However, it is a wise plan to assume that they will and to securely confine such animals so that the disease will not be transmitted to others.

Where animals are concerned we have no available means whereby infection can be prevented after a rabid bite has been received. When humans are bitten the Pasteur treatment is resorted to. This consists of a preventive inoculation which is a rather sure means of preventing the disease. While a rabid bite does not always transmit the infection, it is a wiser plan not to take chances but submit to the preventive treatment, since the disease in the active stage is an incurable one. In spite of the different conclusions made by various workers in this line, all agree that nowhere is cool judgment and prompt action more imperative than in our dealings with this disease.

HAMPSHIRE BREEDERS WILL MEET

E. C. Stone, secretary of the American Hampshire Swine Breeders Association, has sent out a call to all breeders of Hampshire hogs in the West to meet with California Hampshire swine breeders at their annual meeting to be held at the Conejo Ranch near Newbury Park on the Ventura state highway about 40 miles northwest of Los Angeles, on July 30, at 11 a. m. The National Association will be represented by Secretary Stone or one of his associates. Mr. Stone expects to arrive in California about July 15 and visit all the prominent Hampshire breeders in the West. President F. V. Gordon of the California Hampshire Swine Breeders Association expects a record attendance and states that this meeting will be of particular interest to all Hampshire breeders. Mr. Stone or his representative will explain in detail how the leading swine breeders over the country are all breeding up to the big type animals.

This is to be the annual get-together meeting of the Hampshire breeders. It is contemplated that the breeders will at this meeting talk over the feasibility of employing a competent field man to help boost the Hampshire breed.

WOOL CONSUMPTION LESS

Textile mills in the United States consumed 58,600,000 pounds of wool, grease wool basis, in May, 1920, as against 52,000,000 pounds the corresponding month last year, according to a report just released by the United States bureau of markets. The figures are low in comparison with the two preceding months—April with 66,900,000 pounds and March with 67,900,000 pounds—and are far under May, 1918, a war month, when 74,600,000 pounds were used.

The drop in consumption is attributed to transportation difficulties which confronted the mills, a slackening in demand for finished goods, and the tighter money situation obtaining the latter part of the month.

The Arizona Cattle Growers is issuing report of its last annual convention. Some of the southern counties report pastures drying and stock in serious condition.

Winsor Ranch Duroc Sow Sale

Sows by the world's leading sires, including Great Orion Sensation, Orion Sensation, Pathfinder, Orion Fancy King, and Cherry Chief.

The greatest proven sire in the west.

The largest boar on the Pacific coast.



Winsor's Giant Orion



Great Sensation 3rd

We believe this is easily the best bunch of BIG TYPE Duroc-Jersey sows ever sold in the west and they are all bred to—

The Two Leading Sires of the Coast

The sows are all backed by WINSOR RANCH SERVICE, the best guarantee a Duroc-Jersey hog can have.

Exposition Park Los Angeles
Wednesday, July 28

Write for Catalog—Address
WINSOR RANCH, BONITA, CAL.
Morris C. Allen R. K. Walker

COME TO THE

Great Dispersal Sale of Lamb's Durocs, at Ceres, Cal. Wednesday, July 21st, 1920

Offering is sired by such boars as Pathfinder, Orion Model, Orion Model Jr., Orion Cherry Pathfinder, Orion's King Gano, Lord's Orion Cherry King and Grand Wonder. Thirty sows and gilts bred to Orion Cherry Pathfinder, the big grandson of Pathfinder and Orion Cherry King Jr., Lord's Orion Cherry King, First Prize senior yearling at Sacramento last year, and Donald Orion Gano, a good son of the great boar Orion's King Gano. About forty open sows and gilts and ten boars complete the offering. Catalogues out in a few days.

ELMER LAMB
CERES, CAL.

Johnson's Defender Jr.

Heads my herd of carefully selected sows. He should be seen to be appreciated. I can spare a few choice females or young stock either sired by or mated to this good boar. You will be pleased with any purchase made from me.

H. C. WITHEROW

Live Oak, Cal.

Craig's Duroc Ranch

Owensmouth
California

Home of the Aristocrats of the Breed
The big type junior yearling boar, Jack's Cherry Vic, at head of herd. Wanda by Great Wonder I Am is one of the great brood sows of the breed. Many others in same class. Herd to be represented at fairs. Strictly top quality young boars for the trade.

Address J. C. Craig, 601 City Mutual Life Bldg., Los Angeles

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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

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that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be reduced with

ABSORBINE



also other Bunches or Swellings. No blister, no hair gone, and horse kept at work. Economical—only a few drops required at an application. \$2.50 per bottle delivered. Book 3 R free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Cysts, Wens, Painful, Swollen Veins and Ulcers. \$1.25 a bottle at dealers or delivered. Book "Evidence" free. W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

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BABY CHICKS

FREE! FREE!

A Fireless Brooder with every order of one hundred chicks. We ship in the brooder, thus there is no chance of chilling in transit and you have an excellent way to raise them. We have the following varieties of thoroughbred chicks every week: Anconas, Barred Rocks and R. I. Reds, \$20.00 hundred. Extra fancy dark R. I. Reds and White Rocks at \$25.00 a hundred. White Leghorns \$17.50. We guarantee safe delivery. Every one a strong, healthy chick. Orange County Hatchery, 403 E. Santa Clara, Santa Ana, California.

Spring Baby Chicks For Sale—400,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) Stock. Price during May and June, 25¢, \$5.00; 50¢, \$9.00; 100¢, \$14.00. Special prices 500 and 1000 lots. Safe delivery guaranteed. You pay only for chicks received alive and in good condition; no money in advance, pay on delivery. Shipped safely anywhere west of the Rockies. Finest hatchery in the world. Established 1898. MUST HATCH INCUBATOR CO., PETALUMA, CALIF., 438 Seventh St.

White Leghorns — From the home of heavy layers. Buying carefully selected spring cockerels now is economy. We have them from our choicest pens. All breeders have orchard range. Fall chicks pay big. Free folder tells why. Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, California. Phone 492.

Baby Chicks for August and September delivery. Barred Rocks and R. I. Reds, \$20 per 100. Fall delivery Anconas, \$20; MacFarlane strain W. Leghorns, \$16. Send 25 per cent of amount with order, balance before shipment. Hargett Hatchery, Route 2, Compton, California.

Baby Chicks from my carefully selected, thoroughbred flock of S. C. White Leghorns. May, June and July delivery at \$13.00 per 100. Good, strong chicks at this reasonable price. Write for particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

ATASCADERO POULTRY FARMS

S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write Henry Miller, Supt.

White Leghorn Baby Chix from heavy laying HOGANIZED STOCK. Safe arrival of full count, live, strong chicks guaranteed. Price list and interesting literature on application. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Thoroughbred B. P. Rocks, Trapnested Cock and Cockerel matings, 250 egg record and better, mine 210 and better. Fertile eggs, \$2.50 15, chicks, 25c. Phone 5599, Mrs. M. A. Warren, 36 Little Delmas Ave., San Jose, mornings only.

Raise Fall Chicks — We will have them every week. R. I. REDS, BARRED ROCKS, WHITE LEGHORNS. Write for special circular. See why they pay. Stubbe Poultry Ranch and Hatchery, P. O. Box 67, Palo Alto.

Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vadden, Los Gatos, California.

Buff Orpington, Buff Ducks, Bourbon Red Turkeys, White Guineaes. The Ferris Ranch, S. Reservoir, Pomona, California.

White Minorca Baby Chicks and Hatching Eggs — Dark Cornish and Silver Campine eggs. Folder Leech Poultry Yards, Baldwin Park, California.

Baby Chicks from selected egg type S. C. White Leghorn hens. Tupman Poultry Farm, Box 7-C, Ceres, California.

SALESMEN WANTED

Agents Wanted to sell seeds, plants, bulbs, trees, garden supplies, etc. Liberal commission, large firm, part or full time, good opening for any one. Boys and girls also wanted to sell package seeds during vacation and after school. I send box of seeds free—you pay as sold. Give age, reference, and photo with letter. Send at once to Wm. Dart, Santa Rosa, California.

Men With Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write J. H. Yetter, 115 North Broadway, Los Angeles.

Wanted — Salesman who can sell high-grade, dependable nursery stock; exclusive territory; outfit furnished and cash advanced weekly. Commission basis. Address Albany Nurseries, Inc., Albany, Oregon.

Agents—Would an all year round quick seller interest you?—then write Dept. 23, Martinek Company, 405 Lexington Avenue, New York. Opportunity to build up a national and international trade.

GOVERNMENT LAND

300,000.000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book, THE HOMESSEEKER, which tells you how to acquire this land or send \$2.00 for book direct. The Home-seeker, Dept. M, 313 Grant Bldg., Los Angeles, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT. Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

RABBITS

New Zealand Reds—Young stock. Reasonable prices. Josephine Spencer, 1915 21st St., Sacramento.

TREES

For Sale—Ten thousand one year Sour Seedlings, six inches up to twenty. No better stock to be had. Price \$60.00 the thousand, also 500 3/4 inch up Valencia one year, \$1.40 each, 300 pedigreed Eureka Lemon trees 3/4 inch up, two years. The above is first class, fine roots. C. W. White Citrus Nurseries, Home 303, Glendora, California.

For Sale—Placencia Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. Ketscher's Nursery, 1101 E. 4th St., Santa Ana, California. Phone 572WK.

50,000 Florida Sour Orange Seed Bed Trees; 100,000 California Sweet Seedling Seed Bed Trees; Valencia, Eureka Lemons; Supply Co. buds. SOUTHLAND NURSERIES, 1941 East Colorado St., Pasadena, Cal. Phone, Colorado 6352.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Fruit Trees—Berry Plants scarce, order now. Cash Nursery, Sebastopol.

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Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Wineville, California. E. R. Stalder, owner.

Registered Holstein Bulls of various ages for sale. Milbrae Dairy, Milbrae, California.

Sunshine Farm Jerseys — No females for sale. Bulls from high testing cows for sale. E. E. Greenough, Merced.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

SEEDS AND PLANTS

Reliable Cabbage Seeds — I grow them. You want them. Let's get together. Write me for special trial offer on just what you will need. Isaac F. Tillinghast, 40 Podel Street, Santa Rosa, California.

Order Now Nursery Stock for fall planting. Sudan, Rhodes Grass, Honey Sorghum and Cane seeds. Box 501, Fowler, California.

Pumpkin Seed — Mixed Pumpkin Seed, good germination, 25¢ per lb. Aurora Seed Mill, Stockton, California.

WANTED

Wanted—Situation as Cook and House-keeper for two to four MEN on ranch, by middle aged man. Experienced in general family housework, washing, care of milk, poultry, etc. Careful, cleanly, temperate, clean habits. Moderate wages. State number of men and wages. Bank references. Address John, 227 S. Main Street, Los Angeles, California.

Wanted — Married man, who has done some A. R. O. work, to milk and feed test cows and take care of small herd of registered Holsteins. Wife to cook for few men. State age, experience and salary expected, first letter. Todos Santos Rancho, Daggett, California.

Experienced Poultry and Dairyman would like position on ranch as foreman. Married, 32, no children. First class references. 5 years in last position as manager of poultry and dairy ranch. Address: San Fernando, Route 1, Box 140.

Wanted — to hear from owner of good ranch for sale. State cash price, full description. D. F. Bush, Minneapolis, Minnesota.

Wanted—Immediately, experienced bud-ders and tiers. Address or phone Kirkman Nurseries Fresno

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BUTTE CITY RANCH

Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Next sale at Ranch, Wednesday, August 11, 1920, W. P. Dwyer and W. S. Gullford, Box C, Butte City, Glenn County, California.

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Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

PIGEONS

For Sale—White King Pigeons. Old mated breeding birds, \$3 a pair; unmated birds \$2 a pair. Paradise Valley Poultry Ranch, National City, California.

BERKSHIRE

ANCHORAGE FARM BERKSHIRES

Orland, California.

BRED GILTS FOR SALE.

I have the Only English herd of Pure Bred Berkshires in the West. There is not a weakling or a runty pig in all the litters of these English sows, sired by the Champion of England. It has been claimed that the English Berkshires have the largest and strongest litters. The pigs' sire is one of the greatest sons of the famous Epochal. If you want a boar pig that will put bone, heart and vigor into your herd you had better order him now. They are going fast and they are guaranteed to please or your money refunded. Boar pigs \$35.00. Sandercock Land Co., 703 Market Street, San Francisco. In charge of Natomas land sales.

A few choice young boars sired by

"Achlever" out of Grand Champion. 600-

700 lb. Sows for sale at \$50.00 each.

CASTLEVIEW RANCH, SANTA ROSA, CALIFORNIA.

Your Choice of 10 Crack Boar Pigs from our early litters. We want you to see these pigs, their litter mates, and their dams. Have just shipped a choice boar pig to Kansas. These young boars are of correct blood lines, right in type, and well developed. Represent the close-up blood of Laurel's Champion, Star Leader, Ames Rival 118th and other excellent families. Write or come to the ranch. Yours for better Berkshires. Geo. A. Stingle, Lark Meadow Ranch, El Monte, California.

Grape Wild Farm—Berkshires, Guernseys. Big Type Berkshire Boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion. A. B. Humphrey, Prop., Escalon, California.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calaveras, Martinez, California.

Real Good Berkshires, cholera immune Frank B. Anderson, Box 724, Sacramento, California.

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Borge's Big Duroc Jersey Hogs — Herd headed by California Golden Model 3rd. A few choice females of desirable breeding for sale at very low figures. I am offering for sale the tried boar Dos Palos Chief (an Orion Cherry King Jr. boar). Here is an opportunity to secure a tried sire at a very low figure. Satisfaction assured. Write at once. Jack Borge, Dos Palos, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

Bargains in Bred Sows and Gilts—Pathfinder and Great Wonder I Am blood. Derryfield Farm, Capitol National Bank Bldg., Sacramento, California.

L. & M. Ranch, Van Nuys — Buy our young boars by such sires as May Rose King, Winsor's Giant Orion, Orion's King Gano, Top Sensation 3rd.

SWEETWATER DUROCS

The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co. Address: R. K. Walker.

Durocs — Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. J. L. Stevenson, Van Nuys, California.

December and March Duroc boars; Pathfinder breeding. Sterling Smith, Route 1, San Diego, California.

For the Best in Durocs write June Acres Stock Farm, Davis, California.

POLAND-CHINAS

Bred Poland-China Gilts sired by California Gerstade and bred to Some Price. \$75.00 and up. J. H. Crawshaw, Hanford, California.

The Big-Type Polands direct from Iowa. The best blood lines in the game by the Iowa man. J. L. Dunlap, Pomona, California.

The Grand Champion El Proffito heads our big type Poland Chinas. Letters promptly answered. Viola L. Renwick, Santa Barbara, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding Ferguson & McKaig, Orland, California.

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My Victor Herd — Headed by Billiken Chester Whites. For quality and big litters. E. E. Fulton, Box 7, Fair Oaks, California.

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White Muscovy (Quackless) Ducks—Eggs, Ducklings, Breeders. Free circulars. Caldwell Farm, Box 274-E, Los Angeles.

White Pekin Baby Ducks—White Pekin Duck Eggs for hatching. 152 East Spruce St., Inglewood.

Mammoth Muscovy Ducks, Ducklings and Hatching Eggs; heavy fowls and great layers. Woodland Hatchery, Woodland, California.

FARM LAND FOR SALE

Diversified Farming Lands—Natomas Irrigated, Sacramento County; terms. Alex. Murdock, 38 S. Sutter, Stockton.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

Best Cheapest orchard berry and range lands. John F. Beckett, Arroyo Grande, California.

FARM LANDS FOR SALE

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On the banks of the Sacramento River. Water from never falling deep wells. 40 acres of fruit land, 2 second feet of water, \$150 an acre. 20 acres, adapted to prunes, apricots, peaches, \$150 per acre. 80 acres, 25 in alfalfa, 25 in two year old trees, balance graded and ready for crop, good house, large barn, water under pressure, lights and bath, farming tools and stock. Price for immediate sale \$300 per acre, good terms. Fred A. Clark, Resident Agent, Capay Rancho, R. F. D. No. 2, Orland, California.

For Sale — \$30,000 — In Visalia, one mile south from Court House, 30 acres of best soil all under cultivation and bearing, plenty of water, pumping plant, 5 inch pump and ditch water. 2 houses, 4 rooms each, and 2 barns. All farming implements can be bought with the place. 15 acres in Thompson Seedless, one and two year old vines; 6 acres in 6 year old french prunes; family orchard on each place consisting of pears, apples, apricots, peaches, walnuts and almonds. Two and one-half acres in alfalfa and balance in corn. Five thousand rooted Thompson Seedless, one thousand apricots, and two hundred peach trees, ready for planting next spring. This is all included in the price. This is certainly the best buy in Visalia. The place must be seen to appreciate its valuation. Address owner, Mrs. H. Gredsmakar, Visalia, California.

Lake View Citrus Farm 10 Acres \$2200, Easy Terms. Dandy little farm, pleasantly located, only 200 yards lake, fine fishing, boating, bathing, fruited 80 orange and grapefruit trees, remainder land high state cultivation, big crops, ideal for poultry; good 5-room house, barn, large new poultry houses; owner has larger farm, offers this beautiful little place low; \$2200, easy terms. Details this and another with 13 acres oranges, grapefruit, Page 52 Strout's Catalog Orange Groves and Other Semi-tropical Farms. Just out. Copy free. STROUT FARM AGENCY, 503 E. J. Wright-Callender Bldg., Los Angeles, California.

160 Acres Dairy Ranch well located six miles from county seat, 1/2 mile from highway. 50 acres alfalfa, 25 acres in corn and sorghum, balance pasture. 50 tons of hay. Fenced and cross fenced. One pumping plant. Good two story house, barn and other outbuildings. Family orchard and vineyard. 21 milk cows, 19 yearlings and two year old heifers, one exceptionally good bull, 7 pure bred Poland China brood sows, one pure bred Poland China boar, 23 head of 3 months old pure bred Poland China pigs, 10 head of work horses, one jack. All can be had for \$35,000, 1/4 cash. Balance to suit purchaser. W. H. Nyswonger, R. C. Box 123, Hanford, California.

Ranch for Sale—160 acres 1/2 mile south of Yermo Division Point, S. L. R. R., formerly called Otis, San Bernardino County. About 30 acres in fence and has been cropped. House and well for domestic use. One deep well for irrigating, complete with 6 inch pump, 20 H.P. engine. Water lift about 20 ft. Watermelons, tobacco, cotton, milo do well here. Now is the time to see it while things are growing. Will sell on easy terms and might exchange part for good property. Further particulars, address F. C. Brandt, Yermo, California.

240 Acres Near Parkfield, Monterey County, within 5 miles of oil rig now drilling; land on the same anticline rig is on. All fenced, no other improvements; 125 acres of good farming land. Price \$25 per acre, 1-3 cash, balance on easy terms. Can lease to oil Co. for a cash rental of \$1.00 per acre per year for 5 years by giving oil Co. option to buy at \$100.00 per acre. Many other stock and grain ranches to sell. Can get you oil leases from 10 acres up. C. P. Gould, 1032 Junipero Avenue, Long Beach, California.

120 Acres Irrigated alfalfa or fruit land, 52 acres cleared, 36 acres partly cleared, balance timber. Price \$5,000; 2-3 cash, terms on balance. Abstract title, plenty water. No trade considered. Located in Happy Valley, Shasta County, California. Write Box 133, Cottonwood, Shasta County, California.

FOR SALE AND EXCHANGE

10-20-40-60 and 80 acre ranches, rich level, plenty water; proven grape (Thompson seedless), fig and alfalfa land. Price right, easy terms.

FOR SALE

Some of the finest dairies in the state. Chas. McNeely, Alhambra, California.

ANTELOPE VALLEY

Buy cheap, good alfalfa and fruit land in the easy lift water district near improved dairy and hog ranches. \$50 to \$75 an acre, one-fifth cash. Send for circulars. The R. & L. Ranch, 611 Fay Bldg., Los Angeles.

Many Bargains in real estate for sale or exchange. Citrus and deciduous fruits, olive groves, and farm lands. I am a resident agent. Joe Sproule, Fallbrook, California.

For Sale—3 miles from Visalia, 10 or 20 acres of best soil, improved. House of 5 rooms. A snap for a party looking for an ideal place. Address owner, J. C. Aulman, Visalia, California.

Canadian Wheat Land — 160 acres improved, 1 1/4 miles from town of 4000. \$50 per acre. Terms. P. O. Box 98, Merced Falls, California.

If interested in securing farm lands or have same for sale write me. John G. Mee, St. Helena, California.

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Best Mental, Moral and Physical
Training for useful Life.

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Admits to all Colleges and West Point
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Col. C. M. Wood, Supt., R. D. 2, Box 12
Pasadena, California.

Get Maximum Income from your land by
having your irrigation and drainage
problems properly attended to by the En-
gineering Service Company, 1316 Wash-
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For Sale—Two hundred ton of first class
oat hay, cut and in the barn. 105 head
of high grade Holsteins. Ten head of
horses, six head of young mules, all
broke. M. Varenco, two miles east of
Redding, California.

Parties Interested in Securing Plans for
the best and cheapest Evaporator of
large capacity on the market will find it
to their interest to communicate with F.
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Avoid Law Suits by having your property
lines properly surveyed and established
by the Engineering Service Company, 1316
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ifornia.

Stains of all kinds removed quickly. Large
tube Dollar Postpaid. Dept. 72, Mar-
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property write me. JOHN J. BLACK,
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Poultry Queries

Conducted by J. A. Koethen

Intestinal Worms

Will you let me know what to do
for chickens with intestinal worms?
The chickens are just about broiler
size. They are droopy and sluggish
and their intestines seem full of thread
like worms.—Subscriber, Kennett.

Dr. Beach, pathologist at Davis, has
for several years recommended dry
tobacco dust, one pound of dust to 50
pounds of mash, well mixed into the
dry mash and kept before the birds
three or four weeks at a time, then
removed for three or four weeks, after
which it may again be placed before
them if necessary. It has been found
that tobacco dust, used in this way,
rids fowls of any age of round worms
and has no harmful consequences.
Tobacco kills the worms in a short
time, but if the birds are on infected
ground they are likely to be rein-
fected, hence the advisability of re-
peating the dose. It would be much
better to move the chickens to clean
ground as soon as they seem free from
infestation, but this is not always
possible.

Mixed Pictures

Thanks to my own carelessness,
probably, in not marking the photo-
graphs explicitly enough, a picture ap-
pears on page 1028 of the Cultivator
of June 26 which should have appeared
with another article two weeks earlier.
The caption is "Trapnesting the Lay-
ers," and the cut should have been
used with the article describing the
trapnesting methods of the Waldeck
Ranch at Burbank on page 970 in the
issue of June 12. I am the more sorry
for the blunder because Mr. Keppie
and Mr. Smallwood are both doing
really scientific and very successful
work, each in his own way, Mr. Keppie
with trapnests and Mr. Smallwood
without, and it is a pity to mix their
methods.

Caponizing Wanted

Do you know of any person in this
part of the country who caponizes
young fowls? If you know of such a
person we would take it as a favor
if you would send us such address.
We enjoy your department very much
and have utilized many a suggestion
given there. Your advice about de-
stroying vermin on poultry by using
fluoride of sodium was worth the price
of the Cultivator many times over.—
Subscriber, Fullerton.

The address of one such person has
been mailed this inquirer. It looks as
if the Cultivator might be a good place
for more poultry advertising. Requests
for names of breeders, etc., come to
us nearly every week. While the
Cultivator is a farm paper pure and
simple, you can't keep city folks from
reading it because it always delivers
the goods. Thanks for your words of
appreciation. We are honestly anxious
to be of service to all poultry people.

Blind Pullets

My three months old pullets start to
get blind in both eyes. There is a
grey skin over the eyes and water
runs out of it. Next morning they are
dead. What is the trouble, and can
you give me a remedy?—Subscriber,
Turlock.

This looks like a pretty good de-
scription of roup of the eyes, though
severe inflammation of the eyes is
sometimes caused at this season by
foxtails or barley beards getting into
the passage between the eyes and the
nostril. If the trouble begins with the
growth of the grey film over the eye,
without previous irritation or redness,

we must conclude, I think, that it is
a severe case of roup. Very likely if
you examine the mouth and throat you
will find patches of what is sometimes
called canker but is really diphther-
etic in character. The eyes should
be washed twice a day with an anti-
septic solution, either two per cent
boracic acid in a decoction of cham-
omile flowers, or a one-half per cent
solution of corrosive sublimate. Any
druggist will put up these preparations
for you. A simple solution of boracic
acid—a level teaspoon in a cup of
warm water—is sometimes effective.
Use an eye dropper or drop the solu-
tion into the eye with a bit of ab-
sorbent cotton. Follow the use of
either of these solutions during the
day with a slight application of pure
white vaseline at night. If there is a
discharge from the nostril it may be
syringed out with a two and one-half
per cent solution of creolin and glycer-
ine. Meantime you must look for the
cause of the disease, which, nine times
out of ten, is insanitary conditions
somewhere. It may be your pullets
are breathing foul air at night or are
roosting in a draft or are so crowded
on the roosts they never get a decent
breath of pure air. Possibly your
yards have not been spaded or puri-
fied with a green crop for several
years, or the droppings are allowed to
lie on the droppings boards till the
fowls are poisoned by the odor. Clean
up; give your birds pure air at night;
isolate the sick ones, and band each
one that recovers so that it will never
be used for breeding.

Culling Early Molters

In July 3 issue of your helpful paper
you say cull out early molters. This,
I judge, applies to the Leghorn. Some
of our White Rock early molters have
been splendid layers. Does your rule
mean to cover Rocks?—Subscriber,
Upland.

Very likely these White Rocks are
the exception that proves the rule.
The color test applies only to yellow
shanked birds, but the early molting
test is understood to apply to all. In
the case of hens that have raised a
brood in the spring I doubt if it would

apply, for a hen that has been allowed
to sit sometimes molts before she goes
back to laying, but in general I be-
lieve you will find the rule holds.

Okanogan County, Washington, is
suffering severe losses because of
grasshoppers. The legislature has ap-
propriated \$3,000 to aid in the fight.

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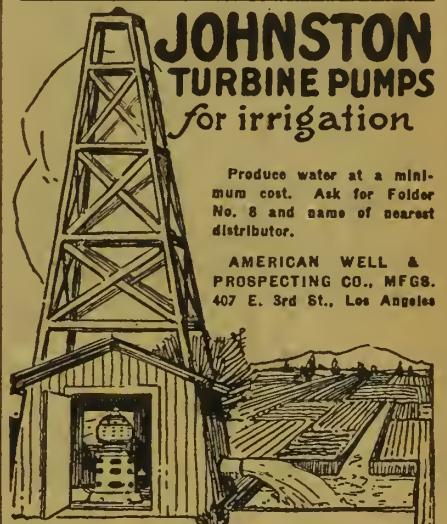
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Household Department

WHERE CROSS THE CROWDED WAYS

'Tis only a half truth the poet has sung
Of the house by the side of the way;
Our Master had neither a house nor a home,
But he walked with the crowd day by day.
And I think, when I read of the poet's desire,
That a house by the road would be good;
But service is found in its tenderest form
When we walk with the crowd in the road.

So, I say, let me walk with the men in the road;
Let me seek out the burdens that crush;
Let me speak a kind word of good cheer to the weak
Who are falling behind in the rush.
There are wounds to be healed, there are breaks we must mend;
There's a cup of cold water to give;
And the man in the road, by the side of his friend,
Is the man who has learned how to live.

Then tell me no more of the house by the road,
There's only one place I can live;
It's there with the men who are toiling along,
Who are needing the cheer I can give.
It is pleasant to live in the house by the way,
And befriend, as the poet has said;
But the Master is bidding us: "Bear ye their load,
For your rest waiteth yonder ahead."

I could not remain in the house by the road,
And watch as the toilers go on,
Their faces beclouded with pain and with sin,
So burdened, their strength nearly gone,
I'll go to their side; I'll speak in good cheer;
I'll help them to carry their load;
And I'll smile at the man in the house by the way,
As I walk with the crowd in the road.

Out there in the road that goes by the house
Where the poet is singing his song,
I'll walk and I'll work 'midst the heat of the day,
And I'll help falling brothers along.
Too busy to live in the house by the way,
Too happy for such an abode.
And my heart sings its praise to the Master of all,
Who is helping me serve in the road.—
Walter J. Gresham.

CONTACT WITH THE ENEMY

(Concluded from last week.)

Crouching in one end of the short bend, he loosened the flap that held his automatic; he rested his rifle in front of him.

The gun on his left was now firing in little bursts of two and three shots. Soon it ceased altogether. Somewhere behind the German lines an ammunition dump was burning with a dull red glow. Dick peered into the darkness ahead of him. He had ceased to shiver.

Suddenly out of the night three grotesque shapes loomed up in front of the boy not a dozen yards away. He threw his rifle to his shoulder and fired into their midst. He saw one of them fall. Rushing immediately to the other end of the trench, he drew his automatic and fired two shots in quick succession; then he leaped out and ran forward. The two figures threw up their hands; expecting to find only one American, they had been fired on from two points.

For a moment Dick was confused as he stood in front of his two prisoners. What should he do with them? He could not kill them; but he must do something and do it quickly. The prisoners doubtless were armed, and he did not dare approach near enough to take their weapons. Beside the trench lay the twisted machine gun barrel. With his automatic held out threateningly, he advanced a step and pointed to the piece of twisted iron.

"Put it on your shoulders!" he commanded in a low voice. "Quick! Auf die Schulter!"

They bent over and swung the heavy gun barrel to their shoulder and steadied it with both hands. Dick then indicated the direction of the strip of woods. They were about to start toward it when a long-drawn outcry came from behind. Dick turned with a start; then he remembered—the third member of the German patrol. Again came the cry, not so loud this time, but ending with a deep groan. Dick hesitated. Could he leave a wounded man—even a German—to lie in the open and suffer? Yes, he could, he told himself with fierce conviction; and he faced about just in time to catch the larger of his two prisoners in the act of lowering one

hand from the machine gun barrel.

"Keep your hands up!" the boy commanded, and his finger trembled on the trigger of his automatic.

Both Germans were big men, but he could plainly see their chests heave and hear their breath come in short gasps as, with his body bent aggressively forward, he held the gun on them. The cry sounded again behind him. With all the caution he could command, Dick manoeuvred his two prisoners with the twisted barrel on their shoulders back to the place where the wounded German lay. The man was lying face downward, with his left arm under him. The boy noticed that the fellow was short and rather thin. The German trembled all over as Dick bent down and removed the grenades from his belt. The bullet had apparently passed through his shoulder, and he made no effort to conceal his pain.

After disarming the wounded man Ellis had planned to make the two prisoners carry their comrade. "Put that down and pick him up!" he commanded, pointing to the wounded man.

The larger of the two glanced quickly back, and Dick thought he heard him speak under his breath to his comrade. The shorter man grunted. The grunt may have meant nothing at all, but the boy was suspicious. Just as the two Germans were about to lower the gun barrel to the ground, he said, "No! Keep it there! Auf die Schulter halten!"

The two men held fast to the gun barrel, for Dick's automatic was full of meaning.

It was an awkward situation, and the boy realized it. Both men were armed with grenades in their belts and perhaps with other weapons that he could not see. Furthermore, they were well trained fighters. He dared not approach near enough to search them thoroughly; lest they try to grapple with him. What could he do?

"If I let them put down that machine gun and bend over the wounded man, one of them's likely to sling a grenade," he thought. "No. It's too dark, and it's too risky."

Again the wounded man groaned. Still covering his two prisoners, Dick stooped to his knees, seized the wounded man by the wrist and with a quick twist threw him upward so that his right armpit rested on Dick's right shoulder. Then he rose to his feet with the man slung across his back. His burden was by no means light, but he could handle it.

Again he indicated the direction of the little strip of woods, and the two prisoners, walking close together with their hands steadying the twisted gun between them, started forward. Dick followed a few feet behind and a little to one side. Not for an instant did he take his gun off the men in front of him.

The wounded man on his shoulder had ceased to groan; he seemed to have lost consciousness. The two machine guns that had been so active half an hour ago were now silent, and the harsh crunch of heavy hobnails on loose stones and the splash of unseen puddles sounded unnaturally loud even in the pouring rain. The booming of the heavy distant guns seemed a part of the stormy night.

They were going uphill, and Dick was breathing hard. He adjusted the wounded man higher on his shoulder as he went along, and the German uttered a slight groan. They were within fifty yards of the little strip of woods at the crest of the hill.

A flare went up far to the right, and Dick turned his head to glance at it. At the same instant, with fingers of steel, the wounded man clutched his throat. The suddenness of it threw Dick into a panic. He stumbled ahead. The man's fingers sank deeper into his throat; Dick felt the sharp nails bite into his skin; his breath was cut off. Letting go the man's wrist he tried to tear the fingers away with his hand, but like a flash the man had him by the throat with both hands. Dick staggered on. His mouth was open, and he felt his eyes starting from his head. Instinctively he clung to his automatic. The two Germans ahead were apparently unaware of the silent struggle, but how long would they remain so? Confused thoughts surged through the boy's mind; he

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was choking; his helmet slipped off and splashed in a puddle.

He staggered on another step and in an agony of pain dropped to one knee. His head throbbed, but the fingers about his throat tightened. When he raised his automatic, the German clutched at it with one hand, missed it by less than an inch, and then sank his fingers into the boy's throat again. As he did so he uttered a loud cry to his comrades ahead.

Dick heard the cry only faintly, but it served as a stimulus to his confused brain. He reached behind him with the muzzle of his automatic, felt blindly until it touched the body of his enemy and pulled the trigger in desperation.

The sharp report threw him forward, and his burden slid lifeless to the ground. Dick regained his feet, gulping and shaking his head as the sound of his shot echoed and re-echoed in his ears; in a moment or two his mind was clear again, though his throat, torn and bleeding, seemed as if stung by a thousand needles. A short distance ahead of him plodded his two prisoners. They had heard the cry, followed instantly by the shot, but they had not dared to look back. What they thought, Dick never knew. He held his automatic again in readiness.

A few minutes later they passed through the strip of woods, and Dick breathed easier. The American sentry who halted the trio just outside the American lines was almost too astonished for words. When Dick had turned his prisoners over to a sergeant, together with his sketch for battalion headquarters, he examined his automatic. A low whistle escaped him. The chamber was empty! Hastily he refilled it.

DESSERTS FROM DRIED APRICOTS

Many people who never dried apricots before are drying them this year instead of canning, because of the excessive price of sugar. More would perhaps if they realized there were other ways of serving them than stewed. Here are a number of recipes for using in dainty desserts, prepared by the Sunsweet apricot people, who are, of course, the Prune and Apricot Growers Association, who are, of course, ourselves, if we happen to be wide awake apricot growers:

Apricot Pudding

In a double boiler scald one and one-half quarts of sweet milk and stir in four teaspoons of sago. Let stand until sago is quite clear; add three beaten eggs, one-half cup sugar, one teaspoon lemon essence, a little butter and a pinch of salt. Add two cups of hydrated apricots. Bake 45 minutes. Serve hot or cold, with or without cream.

Baked Apricot Whip

Wash well one-half pound apricots and stew over fire, stirring slowly until the water has all evaporated from them. Then chop or put through a colander and add one-half cup of sugar and set over the fire until the sugar melts. Still well and then set to cool. When cool add this to the stiffly beaten whites of six eggs. Turn into a well buttered cake mold and bake in a moderate oven for one-half hour. Turn out on a plate and allow to cool. Serve with whipped cream.

Apricot Foam

Stew until tender one pound of apricots. Drain and then rub apricots through a sieve. Beat the whites of six eggs to a stiff froth, until it is smooth, thick and velvety. Pour into a mold, which must be placed on ice. Serve with sweetened whipped cream.

Jellied Apricots

One quart of stewed apricots, three-fourths cup of sugar, one tablespoon of lemon juice, one box of gelatine. Make a syrup of the sugar in the juice of the apricots and lemon juice; boil two minutes. Dissolve the gelatine in the water, strain and add the syrup and the fruit. Turn into molds and wet with cold water and let stand until ready to serve.

NO CHANCE

Judge: "The policeman says you and your wife had some words."

Prisoner: "We both had some, Judge, but I didn't get a chance to use mine."

THIS WEEK'S PATTERNS

Two dainty print dresses for the small girl top the column of this week's patterns. We never had mere charming prints than are shown at present and now during the summer season one can often pick up a remnant of sufficient size for a small garment at reasonable price.

The dress 3265-3252 has exceptionally good lines. The decoration as applied in this illustration may not appeal to many, but there is a good foundation for originality and adapting to one's own style. We recently saw a charming white Indian head worked out in a similar design, the embroidery of brightest Turkey red with line of black to give it body. This, worn by a dainty little brunette, was quite the most fetching thing on the beach. Note this pattern is in two parts, waist and skirt, each ten cents, both 20.

A beautiful and practical combination slip is shown in 3264. Every woman's ideal is, of course, to have an underslip fitted to each gown. This, however, would be usable for many. The back closing may be omitted and the garment slipped on over the head if the waist is not fitted closely, as it should not be for the present mode.

A very pretty, easily made, easily slipped on and easily laundered work apron or dress is shown in 3263. The slight butterfly draping of the kimono sleeves gives a dainty touch which would adapt the pattern to use as a negligee in silk, voile, challis or similar soft material. With pockets omitted and sash or belt added, it is a practical girl's dress. Such a simple and adaptable pattern should always be at hand in your exact size, so as to be instantly available. Without the pockets it would also be an unusually good night dress. When you use it for the first time, if you find a quarter inch longer or shorter on the shoulder or sleeve is necessary for you, be sure to mark clearly on the pattern, so that future recutting and fitting is unnecessary.

WOULD YOU WAIT FOR PERMISSION?

What do you think of having to telephone for permission to run from a flock of bears—and then having your more or less palpitating proposal turned down?

That is what happened to J. W. Hodge, a fire guard on the Shenandoah national forest, a few days ago.

Hodge was stationed at the lookout tower on Hankey Mountain. It was his job to scan the skyline and to make expert diagnosis of far away smoke smudges or any other indication of fire in the forest. This particular morning when he went to the lookout tower on the mountain top, he failed to attach his gun to his person. It was a mere formality, anyhow, and guns are cumbersome things to carry around.

Well, he got into his lookout box and began searching the dim blue distances that look like the further fringes of the world. He was very busy at that for a while. Then his eyes came back closer home and what he saw made him wish for an airplane to take him immediately to one of those far fringes. Three bears were browsing around only a little distance from his lookout tower. They were not apparently giving him any thought, but he did not know how soon they might become hungry. There being no airplane at hand, he decided to use his legs.

Then he remembered he could not leave his post without permission, so he called up District Ranger Shanklin, laid the case before him, and requested permission to go for his guns. He was promptly told that the thing was impossible. The forests were dry and fire might start anywhere at any time. Bears or no bears, it was Hodge's business to stay in that lookout box. Being a perfectly good forest guard, he stayed. Fortunately another lookout happened to listen in on the telephone conversation and succeeded in sending help to Hodge.

Taste and Smell—There are many persons who are able to recognize oleomargarine, almost without fail, by taste and smell alone. The flavor and odor of both oleomargarine and butter become more apparent and characteristic upon melting the fat. These tests can readily be applied while performing the spoon test.

Fairbanks-Morse "Z" Farm Engines



KEROSENE

takes the place of distillate. The fact that there is no more distillate to be had does not bother the "Z" engine owner. The "Z" is designed to use kerosene and operates as well on gasoline. This inbuilt adaptability has won for it the approval of over a quarter million farmers.

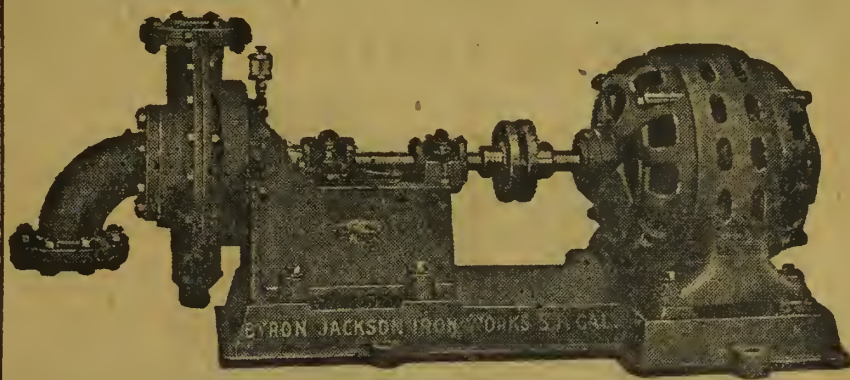
Such widespread acceptance of the Fairbanks-Morse "Z" Engine was not achieved by claims alone. Nor by the high repute of the house which manufactures this phenomenal farm engine. Over \$15,000,000 was paid by farmers for "Z" Engines because of *Quality* which makes for service—and performance—and surplus power—and enduring farm engine dependability.

Equipped with Bosch Magneto. Thousands of "Z" dealers furnish Fairbanks-Morse service to every engine buyer. See your dealer today.

Prices: 1½ H. P., \$75.00; 3 H. P., \$125.00; 6 H. P., \$200.00. All F. O. B. Factory.

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MANUFACTURERS CHICAGO

Western Branches:
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Have You a Producing Ranch?

IF NOT, WHY NOT?

The difference between a "live" and a "dead" Ranch is "Water" and "No Water."

"Byron Jackson" Pumps Meet Every Water Condition

Write us giving your water conditions and requirements. Our New Catalog No. 60-B for the asking.

Byron Jackson Iron Works, Inc.

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Visalia

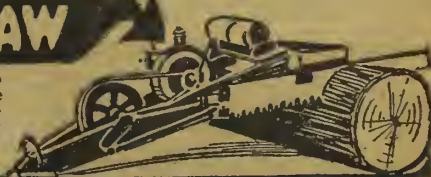
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Salt Lake

ARNOTT DRAG SAW

Will saw logs up to 6 feet in diameter, 15 to 30 cords of 4-foot wood per hour. Engine fitted with clutch. Not necessary to stop engine when moving saw. Write for full information. Call and see them when in the City.

ARNOTT & COMPANY, Inc.
112 S. Los Angeles St., Los Angeles



When Writing Advertisers Mention California Cultivator

FOUR ROW AUTOMATIC LIFT BEET PLOW

Killefer
Efficiency



It Is None Too Early To Plan For Beet Harvesting

The above cut showing our Four Row Automatic Lift Beet Plow, the most practical beet plow on the market today, was designed for use behind the larger size tractors for plowing out beets at a minimum cost and saving not only time, but plowing deep enough to get the tap root, which contains the greatest percentage of sugar.

The value of a good implement of this kind is not only in its ability to perform a perfect job of beet lifting, but in the condition it leaves the ground for next season's crop. Subsoiling has proven very beneficial on the Pacific Coast soils, and a good job of beet plowing is nothing more or less than subsoiling.

Our beet plow is equipped with either the straight wings as shown in the cut, or with angle wings, whichever is preferable.

Place your order early, for, owing to the shortage of steel, there will be a limited number of these beet plows available.

Price f.o.b. Los Angeles, \$575.00

Write for catalogue Number 2, also our booklet on Deep Tillage.

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave.

Los Angeles, Cal.

Almond Huller, \$415.00



Manufactured and Patented by
L. K. VAUGHAN, 172 Elm St., Woodland, Cal.

Some Smiles For The Farmer

Have you seen the Almond Huller that don't wear out the fingers and you don't have to stand at the stacker and see the meats going into the hulls as loss? With this machine you can hull or crack all the nuts and no waste at all and have time to go to all the fairs and no worry. Write for any information. 1-3 tons in 10 hours guaranteed.

"FOR THE LAND'S SAKE" USE

A. C. W. FERTILIZERS

By buying fertilizers on a unit basis and not a cost per box basis, you are losing a money making, labor saving, crop increasing advantage.

Agricultural Chemical Works

513 E. N. Van Nuys Building

Telephones: Pico 3619; Home 4-027

Los Angeles, Cal.

Los Angeles Markets

Los Angeles, July 14, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 62 cents.

Dairy Exchange prices last week on extras:

July	7	8	9	10	12	13
'20 ...	62	62	62	62	62	62

CHEESE

Brokers' prices:

California flats, 31 per lb.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 51 per dozen; case count Prod. Exch. closing price, 48. per dozen; pullets, Produce Exchange closing price 46 per dozen; pewee pullets, 31.

Dairy Exchange prices last week on extras:

July	7	8	9	10	12	13
'20 ...	50	51	51	51	51	51

POULTRY

Price to producers: Hens, lt., 18; heavy, 24; colored, 28; broilers, 26@30; roasters, 38; old roosters, 14; fryers, 32; ducks, old, 17; ducklings, Pekin, 3½ up, 20; others, 17; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 41@45; pigeons, doz., 1.00.

Belgian hares, live, 17; old, 9.

LIVESTOCK

Los Angeles, July 13 — Weighed and delivered off cars without food or water: Hogs (hard-grain, 125 to 175 lbs., 15.50; 175 to 225 lbs., 16.50.

Cattle (on foot, gross weight): Steers, good, 8.59@9.00; medium, 8.00@8.50; cows, good, 8.00@8.50; medium, 7.50@8.00; bulls and stags, 6.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.50.

Sheep—Ewes, 8.00@8.50; lambs, 11.50@12.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, July 13 by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

New stock: Supplies liberal, market steady: Local Early and White Rose, No. 1's, mostly 2.35@2.50; No. 2's, 1.00@1.50 per lug, according to size; 100 lbs., sacked, No. 1's, 5.75@6.25.

Sales to jobbers: New stock: White Rose, No. 1's, sacked, mostly 5.50@5.75; lugs, 2.20@2.35.

Onions: Supplies of Wax, liberal; Yellow, light; wide range in quality; some badly decayed; demand and movement slow; market weaker. New stock: Coachella Valley: Wide range in prices; Bermudas, best, 1.25@1.50 per crate; lugs, 60 @1.00; Crystal Whites, per crate, 1.10@1.40; lugs mostly 60@90; sunburned and decayed stock at all prices; poor stock cleaning up. Stockton Yellow, cwt., sacked, 1.50@1.75.

Sales to jobbers Coachella Valley: Sacked Yellow Bermudas, mostly 1.50@1.75 per 100 lbs. Stockton: Sacked Yellows mostly 1.35@1.50 per 100 lbs.

Garlic: lb., 20@25.

VEGETABLES

These are the actual prices obtained July 13 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 4@5.

Beets: Doz., 40@50; sk., 2.25@2.50.

Cabbage: Supplies moderate, market strong, movement good, wide range in quality. Best mostly 3@4 per lb., per field crate, best 3.00@3.75.

Carrots: f. o. b. usual terms: Cannonball and Winningstadt, per ton, mixed cars, 45.00@50.00.

Carrots: doz., 40@45; sk., 2.40@2.75.

Corn: Local 75@1.00 per box.

Cucumbers: Market steady; local, best, lug, 40@50.

Egg Plant: Best, lb., 8@15.

Lettuce: Local, cr., best, 75@85.

Carrots: Few shipments, mostly on consignment. Quality generally poor, market steady. Few sales mixed cars mostly 1.75 per crate.

Peas: Northern: lb., 10@12.

Spinach: Doz., 20@30; lb., 2.

Squash: Local summer, large lugs, 40 @50.

Tomatoes: Imperial and Coachella, supplies moderate; market strong; cr., best, 2.25@2.75; local lugs, 3.00@3.50.

Turnips: Per dozen, 30@40; per sack, 1.00@1.25.

DECIDUOUS FRUITS

These are the actual prices obtained July 13 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apricots: Local lugs, 1.25@1.65.

Bananas: lb., 10½@11.

Blackberries: Supplies light, per crate, mostly 4.00@4.50.

Cantaloupes: Market steady; supplies heavy; quality and condition, wide range. Imperial Valley: Standard, best 2.50@3.00; Ponies, 2.25@2.50; flats, 1.25@1.40.

Carrots: (Direct wire from Phoenix, Arizona) 83 cars shipped. Temperature past 24 hours: maximum 106 degrees, minimum 69 degrees. Haulings very heavy, quality and condition good. Some small size. All consigned.

Cherries: Supplies liberal; market firm; various varieties, best, mostly 16 @22 per lb.

Grapes: Thompson Seedless: lb., 12@15.

Peaches: Local, best, lug, 1.25@1.75.

Plums: lb., 4@8.

Raspberries: Cr., 4.00@4.75.

Strawberries: Cr., 3.75@4.50.

Watermelons: Supplies liberal; lb., 2@3.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.25@2.75; special packed brands, 3.25@3.50.

Lemons: Market unsettled, wide range in prices. Local Stock: packed, 3.75@4.25; loose, 1.25@2.25.

Oranges: Supplies liberal, market firm. Valencia's; packed special brands, 126's 5.50@6.00; 150's and 176's 5.75@6.25. Local packed, mostly 4.25@4.75; larger sizes, low as 3.00. Packing house culls, 1.00@2.00 per lug.

HONEY

Old honey practically exhausted, new supply light; few sales; demand good movement limited. Carloads f. o. b., usual terms. New crop orange, 21; Hawaiian it. amber, 17½. Old crop white amber sage, 19; wh. alfalfa, 19½. Beeswax, 42.

HAY

Alfalfa Growers of California, under date of July 14, says:

Continued active demand for alfalfa hay, with diminished offerings by growers, led to sharp bidding by buyers in most parts of the state; this demand is principally for forward shipment for the purpose of stocking up for winter consumption. Prices in the different markets of the state ranged from about the former level to a dollar or two higher. The period of heavy marketing by growers is now drawing to a close and offerings from first hands can be expected to gradually taper off from now on, as usual at this time of the year. The unsold stocks in growers hands are so far rather light in most sections, and the majority of growers, being already booked ahead and having to look out for their own requirements during winter, are now waiting for the result of the remaining cuttings and in the meantime are going slow in offering their marketing surplus. During the week of July 10 there were received 1,700 tons on the Los Angeles tracks of all grades as compared with 1,500 for the week ending July 3.

Southern Prices:

Choice alfalfa	41.00
No. 1 dairy alfalfa	36.00
Standard dairy	33.00
Stock hay	29.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats	25.00@27.00
Barley	18.00@24.00
Alfalfa	26.00@32.00
Barley straw	8.00@10.00

GRAIN AND FEEDS

A little weaker, especially in spot stuff. There is a great range in price because of vast difference in quality.

Milo: Good bright, Imperial milo commanding No. 1, 3.50 and Eastern milo is running around 2.80 to as high as 3.17 for best stock.

Spot bran, Northern, 65.50 per ton.

Bran, Kansas, 61.00 per ton.

Wheat: Utah-Idaho Milling, 6.00; feed wheat is running around 4.45@4.55.

Corn: Sacked, Yellow, 3.65 to 3.71.

Barley: No. 1 Feed, 41 lb., 2.77@2.83.

Barley: Export 46 to 48 lb., 3.10@3.30.

Wheat: Mixed feed, 6.05@6.35.

San Francisco Markets

San Francisco, July 13, 1920.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The price paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	60½
Prime Firsts	58½

CHEESE

Dairy Exchange quotations:

Jack, full cream	23@24
Cal. Y. A.	3
Ore. Trips	3
Cal. Flats	33½

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	5
Extra Pullets	4
Undersized	3

POULTRY

Wholesale prices are:

Leghorn, 23@25; large, 37@38; roosters young, 45@50; old, 18@20; broilers, 30@35; fryers, 33@35; turkeys, live, 37@40. Ducks: Indian Runner, 21@23; Pekin 22@25. Squabs, 55@60; pigeons, doz., 2.30@2.50.

Belgian hares, live, 15@17; Jack rabbits, dozen, 1.50@3.50.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 10@10½; do, 1,200 to 1,400 lbs., 9½@10; do, second quality, 7@thin, 6@7. Bulls and stags: Good, 3½@fair, 3@3½.

Cows and heifers: No. 1, 8@9; second quality, 6@7; common to thin, 2@4. Calves: Lightweight, 10½@11; medium 9@10; heavy, 8@8½.

Lambs: Milk, 11@11½; yearlings, 8@8½.

Sheep: Wethers, 8@8½; ewes, 6@6½. Hogs: Weighing 100 to 150 lbs., 15; 150 to 225 lbs., 15½; 225 to 300 lbs., 15; 300 to 400 lbs., 14.

Virgen Packing Company quotes prices on livestock, weighed and delivered off cars at its plant, South San Francisco, as follows:

Cattle: Good steers, 1,000 to 1,100 lbs., 10@10½; top steers, 1,100 to 1,200 lbs., 9½@9¾; good heifers, 1,200 lbs. and over market price; good cows and heifers, 7½@8; No. 2 cows and heifers, 6½@7; good bulls, 4½@5.

Calves: Light, 13@14.

Hogs: Top packer, hard and well finished, 100 to 150 lbs., 15; 150 to 225 lbs., 16; 225 to 300 lbs., 15; over 300 lbs., 14½ under 100 lbs., 13½.

Ewes: Full wool, 6½@7.

Wethers: Full wool, 7½@8.

Yearlings: 9@9½.

ONIONS

Onions: New reds, 50@75; whites, 7

When Writing Advertisers Mention California Cultivator

Since
1902

Pomona Duplex-Plunger Pumps

One Pump Will
Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

Send for Catalog 103

Pomona "Made Right"
Irrigation Gates and Valves

PRICES RIGHT-QUALITY RIGHT
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POMONA MFG. CO.
POMONA, CAL.

T-I-Z-I-T SPRAY

Kills Black and Citricola Scale and controls Red Spider. Put it on your trees now—it works all summer. Thoroughly tried, tested and proven.

It makes larger crops, better fruit, healthier trees.

Put up in 200 pound barrels at 25 cents per pound, f. o. b. Los Angeles.

T-I-Z-I-T Spray Mfg. Co.

Telephone 12089. 1344 Willow St.
Los Angeles

Place Your Order NOW for Nitrate of Lime

Guaranteed not less than 13 per cent Nitrogen—almost 100 per cent Pure.

Nitrate of Lime supplies Nitrogen in the most available form. Packed in solid wooden casks about 240 pounds.

Ask for prices, delivery from warehouse, Los Angeles and San Francisco, or ex steamer to arrive. C. HENRY SMITH, General Agent Pacific Coast and Hawaiian Islands 311 California St., San Francisco.

The advertisers in the California Cultivator are known to be reliable and we recommend them to our subscribers.

cr.; green onions, 1.25@1.50. Garlic, new, 10@15.

POTATOES

River, cwt., 4.00@4.50; fy., 5.50.

VEGETABLES

Wholesale selling price:

Asparagus: lb., white, 6@8; graded, 9@11.
Beans: Lb., String, 4@6; Wax, 2@5.
Cucumbers: Eng., doz., 75@1.00; other, 75@1.25 per box.
Corn: Sack, 2.00@5.00.
Eggplant: Livingston, 10@12½; So., 3@10.
Okra: bx., 1.00@1.25.
Peppers: Bells, 15@20 for large, 5@8 for small; Chilli, 12½@15.
Peas: lb., green, 2½@4.
Radish, 7@9 doz. bunches.
Spinach: lb., 4@5.
Squash: Summer, cr., 50@75; Sacramento, lug, 1.00@1.50.
Tomatoes: Cr., 1.25@2.50.

DECIDUOUS FRUITS

Apples: Red Astrachan, Los Angeles lug, 1.25@1.50; wrapped, bx. 2.00@2.75; Crab, 1.25@2.00.
Apricots: Imperial Valley, Los Angeles lugs, 4@8 per lb.; 1.00@1.50 per crate.
Bananas: lb., 8@10.
Blackberries: Dr., 35@50.
Cantaloupes: Ponies, 1.75@2.25; standards, 2.50@3.00; flats, 75@1.35 box.
Cherries: Black, 1.50@1.75 per drawer; blacks, 6@12½ lb., according to quality; Royal Annes, lb., 12@16.
Currants: 35@50 dr.; 4.00@7.00 ch.
Figs: 50@60 for white and Brunswick per box of one layer; two layer, 1.00@1.25.
Gooseberries: lb., 5@7; English, 15@17½.
Loganberries: Red, dr., 35@50.
Peaches: boxes, 1.00@1.75.
Pears: Madeline or Dearborn, lugs, 2.00@2.25; small, 1.00@1.25; Bartlett, nominal.
Pineapples: Doz., 3.00@4.25.
Plums: Apex, 1.50@1.75 per crate; Beauty, 1.50@1.75; Climax, 1.25@1.50; Clyman, 1.25@1.50.
Raspberries: dr., 60@75; cr., 1.50@1.75.
Strawberries: Large, 75@1.00; small, 50@65.
Watermelons: Imperial Valley, lb., 2@4.
Honey Dew: cr., 1.50@2.00.

CITRUS

Box: Lemons, standards, 2.50@5.50; lemonettes, 1.25@2.00; grapefruit, 2.00@3.50; navel oranges, 4.00@6.00.

BEANS AND PEAS

California Bean Growers Association, San Francisco, July 10:

There has been no material change in the California bean market since our last report to you and we do not look for much activity until the latter part of this month or, perhaps, next month. Quite a little interest has been shown recently in California Pinks but the White varieties have been very inactive. The trade here is offering for shipment at about the following prices:

Large Whites 6.15@ 6.30
Small Whites 5.75@ 6.10
Pinks 6.65@ 6.75
Cranberries 6.75@ 7.00
Black Eyes 8.25@ 8.50
Red Mexicans 8.25@ 8.50
Red Kidneys 14.00@14.50
Bayos 10.25@10.50

HOPS

1919 crop, 85@1.00 per lb. Prices to growers for 1920 crop, 65@80 per lb.

HONEY

Reported by Rafael & Wing:
Very little honey arriving. Not enough sales to establish prices. White orange offering in this market at 20@21. No change in wax. It is bringing from 40 to 42. From all indications, there will be a very good honey crop from the San Joaquin and Sacramento valleys. The sage crop in Santa Clara and San Benito counties is practically a failure. Some Honolulu honey offering, but not enough to affect the market.

GRAIN

Wheat: 4.25@4.40.
Oats: Red feed, 3.00@3.15.
Corn: California Yellow, 3.65@3.75 per cental; California milo maize, 3.50@3.65.
Barley: No. 1 feed, 2.75@2.85.

HAY

Under date of July 10, A. W. Scott Co. says:

Receipts past week 1,988 tons. No purchasing in any amount has been done and the consumer still declines to purchase in advance at prices asked. The readjustment and moving about of baling rigs through the cutting of large quantities in regular grain districts has delayed shipping and prevented large quantities of hay from coming in which would by this time have been shipped here. Country trading is equally dull. Alfalfa is relatively stronger than any other hay but during the week reports of sales at lower figures have come from several sections. Export is slow and affected by the general dull market conditions with a tendency on the part of buyers to wait until later in the season before placing orders in quantity.

We quote today wholesale prices in carload lots (old crop) as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.)

Old Hay:
Prices nominal. Old straw nominal.
New Hay:
Wheat hay (light 5 wire bales) 26.00@28.00
Tame Oat hay 26.00@28.00
Wild Oat hay 20.00@22.00
Barley hay 20.00@23.00
Alfalfa hay first cutting 20.00@25.00
Alfalfa hay second cutting 24.00@28.00
Alfalfa Growers of California quote prices for Northern Districts:
No. 1 dairy alfalfa 33.00
Standard dairy 32.00
Stock hay 28.00

Newcastle reports infestation of phylloxera in one of its vineyards.

Citrus Markets

Los Angeles, July 14, 1920.

Valencias have been against vast quantity of Eastern small fruits and California cantaloupes and the market is generally lower. Good stock, however, is commanding ready sale and at ready prices.

Lemons are still in the dumps and it now appears that they cannot command any exceptionally long prices this season.

Shipments

Shipments of oranges to date from Southern California since November 1, 1919: Oranges, 24,510 cars; lemons, 6,260; total, 30,770. To same date last season: oranges, 27,269; lemons, 7,777; total, 35,046. From Central California to date this season: Oranges, 5,374; lemons, 288; total, 5,662. To same date last season: Oranges, 3,714; lemons, 251; total, 3,965. Northern California this season: Oranges, 261; lemons, 23; total, 284. To same date last season: Oranges 244; lemons, 2; total, 246.

AT THE AUCTIONS

July 8

New York: 19 or., Val. 5.65-10.25.
Boston: 9 or., 4 lem. Val. 6.80-8.30, lem. 1.05-3.10.

Pittsburg: 6 or., 2 lem. Val. 4.80-8.55, lem. 65-2.55.

July 9

New York: 33 or., 3 lem. Val. 4.00-10.25, Seeds, 7.60-8.05, Bloods, 6.05, grapefruit 4.15.

Boston: 6 or., 3 lem. Val. 6.55-8.05, lem. 85-1.65.

Philadelphia: 8 or., 5 lem. Lem. slightly better. Val. 4.85-8.10 most sales running between 6.00 and 7.00, lem. 1.20-2.50.

Cleveland: 4 or., 4 lem. Val. 5.30-7.80, lem. 60-3.55.

July 12

New York: 53 or., 6 lem. Orange market lower. Val. 3.90-9.00, grapefruit 4.45, Seeds, 4.50, lem. 70-2.85.

Boston: 14 or., 6 lem. Val. 5.30-8.25, grapefruit 2.25-4.75, Sweets, 6.85, lem. 80-2.85.

Philadelphia: 12 or., 8 lem. Val. 4.20-8.75, Sweets, 4.95-5.90, Mikes, 5.80-8.25, lem. 1.25-2.10.

Pittsburg: 7 or., 4 lem. Val. 4.10-6.85, lem. 60-1.95.

July 13

New York: 33 or., 6 lem. Val. 1.30-7.90, grapefruit 1.70-7.10.

Boston: 12 or., 5 lem. Val. 5.00-8.10, lem. 1.25-2.95.

Philadelphia: 8 or., 4 lem. Val. 4.15-8.60, lem. 1.10-2.20.

INCREASING FARM POWER

Mr. Hawkins of the International Harvester Company informs us that the International motor truck has increased its sales volume 1,500 per cent since 1914 and plans are now forming by which greatly extended production will enable more rapid extension in the future. A new plant is to be erected at Fort Wayne, Indiana. This in addition to the Akron works. The Fort Wayne people under the direction of the chamber of commerce are now completing the first quota of 1,000 cottages for use of the laborers of the institution.

"The buildings of the new plant will embody the improvements of every important modern automobile and motor truck plant in the United States. It is the determination to combine all noteworthy individual merits of America's successful manufacturing establishments into this super truck plant in order to make it as nearly perfect as practical and scientific ingenuity can devise. Health and comfort of the workers and ease, efficiency and perfection of work will be the major ends involved. The machinery and equipment will follow the same principle and no expense or pains will be spared to equip the great plant for the happiest and most satisfied workmen and for making the best and most economical motor truck which can be built."

TRACTOR PAPER

Tractors "on time" has hardly been possible with the immense growth of the industry and the consequent demand on the manufacturer for every dollar at his command to carry the great stock necessary. All the producer's capital was likewise invested to the last cent possible in equipment and seed, under the past few years' urge, and this demand has made it practically impossible to accumulate the thousand dollars or more which is necessary to purchasing a farm tractor. Now come credit companies making a specialty of financing the manufacturer, or, in other words, buying the paper which farmers put up for purchase of this expensive equipment. The paper is turned directly to the credit company by the tractor manufacturer, the money is placed in new steel and takes up its continual circulation.



Actual tests

By exhaustive study and engine tests, our Board of Lubrication Engineers has determined the correct consistency of Zerolene for your make of automobile. Its recommendations are available for you in the Zerolene Correct Lubrication Charts. Get one for your car at your dealer's or our nearest station. Use Zerolene for the Correct Lubrication of your automobile, truck or tractor.

STANDARD OIL
COMPANY
(California)



A grade for each
type of engine



BEES
PAY

Bee-keepers can obtain from the Apiary Department of the Diamond Match Co. the finest quality of Bee-Keepers' Supplies at fair prices.

The Apiary Department, which is in charge of experienced Bee-Keepers, is one of the largest of its kind in the United States and maintains a constant excellence of produce and unsurpassed service.

Write for catalogue and if a beginner for Cottage Bee-Keeping, which will be promptly mailed free.

THE DIAMOND MATCH CO.
APIARY DEPARTMENT
CHICO, CALIFORNIA, U. S. A.

ORNAMENTALS

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

July 24, 1920

No. 4



A Tree Which May Some Day Be Historical

Overland

TRADE MARK REG

Stamina

STAMINA is the power to suffer blows without succumbing. The Overland, on the new *Triplex* Springs, has lasting strength and staying powers because it has in-built stamina.

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March 3, 1920, a stock of Overland finished a test run of seven days and nights over frozen Indiana country roads. It traveled 5,452 miles in 168 hours continuously. Yet under this ceaseless pounding it never failed or faltered and finished ready to run the gauntlet again.

Blazing the Trail for the Army

From July 7 to September 6, 1919, three stock Overland cars blazed the trail for the U. S. Army Engineers in their famous cross-continent drive. These cars covered almost impassable roads in all kinds of weather and in all altitudes. They proved again the marvelous stamina of the Overland, the modern light car.

42,104 Foot-Pounds Blow on Springs

Daily at the last annual Stock and Horse Show at Denver, Colorado, a stock Overland leaped eighteen feet, clearing a five-foot hurdle. In landing it sustained a blow of 42,104 foot-pounds on its spring system. On *Triplex* Springs, designed to ward off the jolts and jars of the roughest roads, it emerged with not so much as a cracked shackle bolt.

Races 25,000 Miles in Pursuit of Speeders

The Houston, Texas, police use an Overland day and night in pursuing "speeders." Since October, 1919, the car has covered more than 25,000 miles, much of it at 35 to 45 miles an hour. And in that time there has been absolutely no expense for mechanical upkeep. Because this car has never failed its drivers, six more Overlands have been purchased for similar arduous work.

YOU never would want to put your car through such punishment, but it is gratifying to know you *could*. Power plant and body are cradled upon the marvelous *Triplex* Springs, which create riding qualities undreamed of in a light car. They lower upkeep costs. They guarantee Overland Serviceability.

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SAN FRANCISCO

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California Cultivator

Vol. LV, No. 4

Los Angeles, July 24, 1920

One Dollar Yearly

Rambling Along the Edges of Rice Paddies

By C. B. Messenger

RECENTLY blew into Chico in Butte County, county of rice. I say "blew in," but perhaps, more correctly, melted and ran in, for it was the kind of a day the rice growers love to look upon. I had been up in Shasta and noted there what Shasta producers hope will be the beginnings of a great rice industry for that county and had a ride over hills and amongst the pine trees and down through the great Stanford ranch at Vina and over wonderfully rich acres of Shasta, Tehama and Butte Counties and I was fully impressed with upper Sacramento's rich possibilities.

The first one encountered was Secretary Frank Durkee of the Chamber of Commerce, and Chico has a real Chamber of Commerce and, I may al-

ticular moment and with true Sacramento Valley hospitality the dust of travel was overlooked and I was made a welcome guest at a delightful luncheon. And here is where I learned as to some of the real activities of the Chamber of Commerce and my opinion was formed that it should be renamed and "Agricultural" added. The attendance at the luncheon showed that the commercial interests of the community are even secondary to the larger, more inclusive, soil products interests. Its president, Dr. E. B. Copeland, is one of the larger rice growers of Butte County. Other members have large farm holdings. The cordial welcome and the spirit of the county was shown by Dr. Copeland's

is just being applied to cover for the season. The illustrations on this page give more graphic idea to one not familiar with rice cultural conditions than anything I may say. First we drove south of the town, seeing scores of pumping plants only recently in-

seriously infested paddies as high as \$20 per acre.

Dr. Copeland is breaking in a new section which heretofore had been considered a fruit or grain section. It is west of Chico, not far from the Sacramento River, where a battery of wells supply water for several hundred acres. The illustrations in this column were made on this ranch.



Disseminator of Weed Pests

One of the smaller supply canals in Butte County lined and filled with water grasses, cattails, willows and other pests of the rice fields.

most add, of Agriculture, that is true to the entire interests of its own community and of the Sacramento Valley, and that means it does all in its power to advance the interests of the farmer and the fruit grower. I was scheduled to stop in Chico but an hour or two but Mr. Durkee referred to the monthly luncheon of the Chamber of Commerce which was due at that par-

remark, as soon as the various reports and discussions before the organization had been disposed of, by his offering, even in view of the already strenuous gas shortage, the use of his machine for the afternoon, and still better his own company.

I saw rice as never before, as far as the eye could reach, mile after mile of rice fields in the stage where water



Rice Just Coming Under Water

Water will now be held over the entire field for from 60 to 90 days. The light color in the field immediately back of the rice in the foreground is wild oats, but through this is a good stand of rice and the water will need to be held on the field but a few days before oats will begin to go down.

stalled, then farther into the Nelson, and to where we could overlook Richvale and Biggs sections. On Dr. Copeland's own place near Nelson was seen one of the cleanest paddy fields of the day's trip. By cleanest we mean freest from those distressing weed pests, the water grasses, sedges,

Across the river in Glenn and Colusa Counties the rice growing campaign seems to be even intensified. This section was not as early in the game in a large commercial way as was Butte County. County Horticultural Commissioner Wrenn of Glenn was guide and counselor in this section.



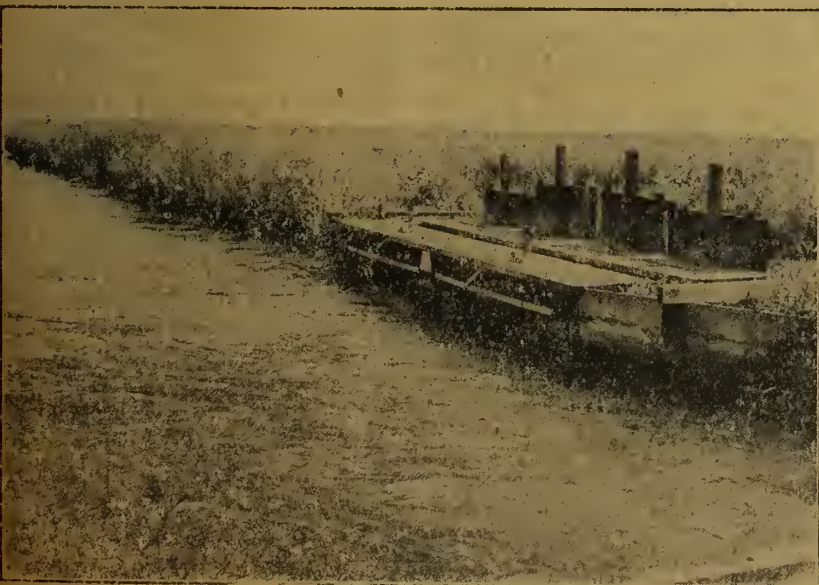
One of a Battery of Efficient Pumping Plants

Dr. E. B. Copeland, the one in lighter shirt, and associate, in front of one of the pumping plants of a battery of five on the ranch west of Chico, which is a pioneer in a new rice section. This ranch is somewhat different from many of the old time rice fields in that it is not underlaid with hardpan and the soil is more or less of a loamy nature.

cat tails, docks and some of the other plants which revel in water and foul the land. The method of weed control is simply hand pulling. Dr. Copeland's work is in charge of a corps of Filipinos. The grasses are simply pulled after the water is applied, the boys going through the field either in rubber boots or barefooted as they prefer. The cost may be as low as \$4 or \$5 per acre or in exceptionally

Across the river at Hamilton City, and from there down to Willows, we passed through thousands of acres of rice fields. The most astonishing feature of this short ride was the powerful pumping plants, lifting literally rivers of water from the great Sacramento. The Sacramento increases one's respect for it wonderfully as he sees the wealth it carries to these Glenn and Colusa lands.

(Continued on Page 119.)



Measuring the Water to the Users

Meters admitting the water to one hundred sixty. Many districts, however, are not so careful in distribution and division of water.

Agricultural News Notes of the Pacific Coast

Northern California

Orland, Glenn County, is building a \$50,000 schoolhouse.

Hop picking in Yuba County will start about August 5.

A shipper of scabby sheep was last week fined \$50 in San Francisco.

Willows, Glenn County, will pave eight miles of streets before 1921.

The first carload of Bartlett pears from Yuba County was shipped July 3.

Vacaville, Solano County, shipped 82 carloads of fruit during the first week in July.

Butte County supervisors appropriated \$1,500 to aid farmers in fighting grain fires.

Alameda County's apricot growers have sold the most of their crop around \$100 per ton.

Hamilton City, Glenn County, is building a city lighting system and paving several streets.

Tehama County residents have raised \$10,000 with which to hold a county fair in October.

An irrigation district of 6,000 acres north of Thermalito, Butte County, was perfected last week.

The supervisors of Placer County have appropriated a sum sufficient to continue the farm adviser through his second year.

In Siskiyou County a movement has started to divert water from Klamath Lake and Klamath River to irrigate Shasta Valley.

Hayward, Alameda County, is making plans for a farm products show which the committee announces will be "one hummer."

The first trainload of seed peas raised in the Sacramento delta lands was shipped East last week. Several more trainloads will follow.

Various sections of Northern California report the death of domestic geese from eating Johnson grass containing prussic acid.

Shortness of grazing in northern districts is responsible for death of livestock through eating poison hemlock, wild tobacco and larkspur. Enclosed pastures should be cleared of these plants.

F. A. Ursua of the Argentine embassy at Washington, after a cattle survey in California, will recommend to his country adoption of California laws for protection of the cattle industry.

Placer County plum growers are investigating the shortage in the plum crop. Some think it due to the wearing out of the soil; others to the exceptionally warm winters during the past two or three seasons.

The slump in the wool market caught many of Sonoma County's wool producers, who refused to sell at present low prices, and Cloverdale reports warehouses full. The farm bureau shipments are being made to Chicago.

Manager Riley of the Pacific Rice Growers Association has just finished inspection of the rice districts of Sutter, Yuba, Colusa, Glenn and Butte Counties and says that the yield promises to eclipse that of former years in spite of the dry season.

Colusa County reports rice not in best condition, largely because of cool spring and shortage of water. "The water grass is very bad around here and many growers have let their land lie idle this year, as they had too big a crop of grass seed instead of rice."

Central California

Help prevent fires.

California's 1920 crop will average much below normal.

"Sunsweet" prunes will sell around 18 cents for standards.

San Jose reports extra fancy Moorpark quoted at 33 cents.

Fruit shippers are organizing a cooperative association at Fresno.

Stanislaus County has appropriated \$1,000 for exhibit at the state fair.

Modesto's new cooperative cannery is now ready for the season's run.

The first watermelons from the Turlock district this season were shipped July 11.

San Jose reports some apricot growers as having sold canning fruit at \$110.

Tulare cannery is running full handed on peaches. It will process 2,000 tons.

Fresno creameries paid five cent higher price for June than for May butterfat.

The Pajaro district of Santa Cruz County has just organized a farm bureau center.

Modesto, Stanislaus County, is to have a dehydrating plant. It will cost nearly \$7,000.

Fruit and vegetable canneries have arranged wage of \$4.60 per day for adult male labor.

Porterville, Tulare County, has over 800 acres in cantaloupes. "Fine quality, situation inviting."

The California state dairy council recently held a two day meeting at Hanford, Kings County.

President Giffen of the Associated Raisin Company has been East investigating marketing conditions.

Nurseries of the central part of the state report nursery stock will be fully as short next year as it was last.

San Joaquin Valley horticultural commissioners recently met at Fresno and discussed standardization.

The Melvin Fruit Growers Association is building a new shed and warehouse near Clovis, Fresno County.

Some of the wheat on Tulare's bottom lands has been running as high as 44 sacks per acre, barley 50 sacks.

Turlock's cantaloupe crop on irrigated lands is doing exceptionally well; unirrigated fields not doing so well.

Kings County board of supervisors is planning a general county exhibit of agricultural products at state and other fairs.

Turlock reports sufficient help for handling the coming cantaloupe season. It is estimated that section will ship about 3,000 cars.

Sales Manager Sturtevant of the California Peach Growers, back from Eastern trade centers, has optimistic report for dried fruits.

Fresno County farm bureau meetings: Wood Colony, July 19; Laurel Lodge, 19; Turlock hog auction, 20; Hickman-Waterford, 21; Ceres, 22; Patterson, 23; Orange Blossom, 26; Claus, 28.

Fresno County farm bureau has just closed the third year of its existence. Among other work reported taken up are campaigns for silos, rabbit drives, cow testing association, hog auctions, good roads, cotton culture.

Southern California

Help prevent fires.

Imperial County's cantaloupe season has ended.

Almost everybody signed the highway bond petitions.

West Riverside is growing cotton, which is now in full bloom.

Nearly all citrus sections report promise of bumper orange crop.

"No gas" is the usual sign in all sections of Southern California.

The Valencia market is exceptionally good; lemons disastrously low.

Two hundred acres of grain went up in smoke at Arlington last week.

Imperial Valley's production this year will aggregate about \$75,000,000.

Orange County poultrymen are taking lessons in "culling out the boarders."

Southern California's beach resorts were treated to a great spectacle in high tides.

Pomona irrigators have installed a new compressor which will increase the irrigation supply.

Pomona district reports no restrictions at this time on farm power for pumping or other farm use.

Citrus fumigators held convention Friday, July 16, at Covina, and hold another at Pomona this week.

Palo Verde Valley is making a campaign for production of Durango seed, with the promise of \$200 per ton.

Arlington, Riverside County, reports "apricots larger in size, finer in quality and more canners than usual."

San Bernardino County is maintaining an exceptionally fine system of highways to her mountain resorts.

Foothill Honey Producers, whose season ends about July 1, find the harvesting continuing longer than usual.

The Pasadena Horticultural Society has announced the holding of an autumn flower show, October 28, 29, 30.

Governor Stephens has replied to request that he place an embargo on gasoline that the state has not the power.

The Ventura County farm bureau has joined in the drive to secure funds for protecting the Santa Barbara national forest from fire.

La Verne, Los Angeles County, is building orange packing house, 180 by 137 feet, with basement and strictly up to the minute equipment.

Orange growers have been pleased with the season, there having been no hot spell to cause the usual June drop. An advanced guess on the coming crop is that it will be larger than normal.

California Lima Bean Growers Association has paid to members above eight cents per pound for last season's delivery. It is predicted the final payment will bring the total up to about 9½ cents.

Willis S. Jones of Claremont reported at the Riverside frost protection conference: "Frost protection does pay for itself. In the years I did not protect my groves I lost sufficient to pay for a 50 year frost protection campaign."

At the meeting of county assessor, board of supervisors and date growers of Riverside County the board suggested that in assessing bearing date trees a valuation of at least \$50 for four year old date trees would be fair. The growers protested that such valuation would be excessive.

The Coast and General

Help prevent fires.

Pluma County, Arizona, is having a silo building campaign.

The county agent of Yuma County, Arizona, is making a campaign against Johnson grass.

The Indian women about Elko, Nevada, have formed a labor union and adopted a scale of wages.

The price of retail milk was advanced July 1 in Phoenix, Arizona, to 17½ cents a quart for B grade milk.

Arizona wool growers have asked for embargo on further importations of beef, mutton or wool for the present year.

Wool prices in Lake County and district in Oregon have dropped during the past month from 55 to 41 cents.

Kennewick, Washington, shipped 15,000 crates of strawberries during the past season, one grower netting 1,200 crates from five acres.

The state department of agriculture reports information from the East that some 13,000 new refrigerator cars are to be added to California's fruit carriers.

Win. Ladd of Portland, Oregon, reports a Jersey cow producing 999 pounds of 85 per cent butter within 12 months. Her name is Adelaide of Beechlands.

Because of a recent ruling of the Salt River Valley Water Users Association in Arizona, 40,000 acres will be covered by the waste waters of the Roosevelt dam.

A terrific storm visited the Inland Empire of Eastern Washington, ruining thousands of acres of crops, uprooting orchards and razing many farm buildings.

Dairymen of Whatcom County, Washington, recently held annual picnic and made "Jersey excursion" into some of the more important Jersey sections of the county.

C. C. Cragin has been appointed project manager of the Salt River Valley Water Users Association. Mr. Cragin succeeds W. R. Elliott, who resigned to enter business as a civil engineer.

Jackson County, Oregon, farm bureau has recently purchased warehouse for storage of grain, poultry, eggs and other farm products and to serve as distributing station for needed supplies.

Although the cotton picking season in the Salt River of Arizona does not open until well into September, E. P. Satterfield, living south of Phoenix, is showing some matured cotton bolls of the 1920 crop. These are from a field of volunteer or "rattooned" cotton.

The first car of cantaloupes in the Salt River Valley was shipped July 1. This is a little later than last year. Prospects are that while the acreage of cantaloupes is somewhat less than last year the crop will be better, so that total shipments may almost equal those of 1919.

The summer rains on Arizona ranges have not been sufficient to prevent the drying out of pastures to some extent. The soil of most ranges, however, was well saturated so that on the whole range conditions are very fair. There have been some showers in Apache and Navajo Counties and Mohave County, near Kingman.



DIFFERENT plants differ in the mechanism of the roots which absorb the water. Many roots are equipped with multitudes of very fine hairs that in the total give a tremendous absorption surface. Other roots consist only of smooth fibers which do most of their absorbing of water through that portion of the rootlet near the end. The citrus root belongs to this latter class and it is thus less perfectly fitted for rapid absorption of water than certain other plants. Under our arid conditions it is imperative to the well being of the citrus tree that a vigorous and continuous development of fiber roots be encouraged during the spring and summer season.

As a general rule, water does not come to the rootlets in position in the soil, but rather the rootlets must seek out the water. It is quite probable that a very few days after an irrigation the water in the soil has reached an equilibrium and has ceased to move in quantities that are of importance to root absorption. This is another reason why vigorous root growth must continue throughout the spring and summer. The common observation that the great bulk of citrus fiber roots are within two feet of the surface and nearly all of them within four feet has an interesting connection with this point that will be discussed later.

In the leaves certain chemical-physical digestive processes take place. The mineral salts contained in the water that the roots absorbed are recovered for tissue building, and large quantities of distilled water are given off into the air by the process known as transpiration. The water thus given off may reach surprisingly large amounts. It is estimated, for instance, that a summer crop of melilotus alba yielding ten tons of green clover per acre will require in the neighborhood of 1,000 tons of water transpired through the leaves. This means about nine acre-inches of irrigation or nine inches of rainfall. Citrus trees belong to the group of plants that transpire large quantities of water continuously. Nearly all plants are equipped with an ability to modify the openings in their leaf surfaces through which this transpiration takes place. This ability varies greatly with different plants. The slight curl of citrus leaves on a hot day is a part of this attempt. The closing of the small breathing pores or stomata is probably more important, although less noticeable. Many plants have certain parts that are used somewhat as storage reservoirs from which reserve moisture can be utilized in times of drouth. Citrus trees apparently have no such special parts, with the result that water that has been passed into the fruit of the tree under certain especially trying condition of the atmosphere is drawn back into the twigs and transpired through the leaves. This phenomenon is said to be one of the contributing causes of "June drop." Increasing the number of newly developed fiber roots must partially offset this tendency through permitting the trees to absorb greater total amounts of soil moisture to be transpired. To the extent that the furrow manure method or surface mulching encourages fiber root growth they should likewise help in the holding of a crop. To the extent that irrigation both ways in an orchard develops fiber root growth in more ground it must be of value in this connection. One must be sure in practice, however, that the irrigation both ways is sufficiently

Duty of Water

From Address by Prof. R. S. Vaile at Citrus Institute, Santa Ana

thorough and sufficiently frequent to be conducive to good root growth, else it would be better to limit the application to one way where favorable moisture conditions might surely be maintained.

I believe that it is very generally understood that the roots of plants cannot take all of the moisture out of soils. Soil that is practically dry, just retaining its granular structure but showing little or no adhesive quality and little or no color due to moisture, will still give off a very perceptible amount of water when subjected to a temperature sufficient to boil water. Soil in the condition mentioned has approximately reached the moisture content known as the hygroscopic coefficient. This point varies in different soil types. Sand will then contain only two or three per cent of its dry weight of water, while very heavy clays may contain as much as 15 to 18 per cent. Most plants, particularly the annuals, will permanently wilt before the soil surrounding their roots becomes as dry as this, although field trials with walnuts indicate that they can utilize the moisture to prevent wilting just about to the h. c. Active growth will have ceased, even with walnuts, some time before this degree of dryness is reached, and the reserve supplies of moisture stored in the plant itself will likely be strongly called upon.

Soils in general will hold under field capacity just about 2.5 times as much water as is represented by the hygroscopic coefficient. In other words, in a sandy soil with a h. c. of four per cent the maximum field capacity two or three days after a rain or an irrigation will be somewhere near ten per cent. Much of the soil in the Anaheim, Covina and Ontario sections would be of this general nature. A clay soil with a h. c. of 12 per cent will have a field capacity of 30 per cent. As a matter of fact, however, it is rather difficult to get the clay soil to this high a point, and there is much field evidence that slightly less moisture is more desirable. The heavier soil on the Leffingwell rancho is typical of this class.

In the irrigation of citrus we should always irrigate before the soil has reached the h. c.; while it still shows considerable color and feels slightly moist to the touch. We should then plan to put on enough water at a time to raise the moisture content of the surface four feet to its field capacity. The use of more than this amount is probably wasteful. With walnuts and probably with beans, deeper penetration is highly desirable, but as already pointed out, nearly all the fiber roots of citrus are in the surface four feet. This is an easier thing to control than might be supposed, for as water moves downward in soil the moisture content is raised to the capacity or above as far as the water penetrates at all. In other words, the point between the wetted and unwetted soil is very distinct rather than a gradual grading one into the other. This fact gives opportunity for a very easy testing of the depth of penetration of irrigation water. A steel rod of 1/2 inch to 5/8 inch diameter, equipped with a T handle, and a convenient length, from

4 1/2 to 6 feet, can be shoved down in the irrigation furrow as far as the water has penetrated, when it will come to an abrupt stop. The best way to operate such a prod is to push it down with short, jerky strokes, for in that way the transition point will be more clearly recognized. Flowing water in the furrow is of great aid as a lubricant. In this way the penetration in many furrows can be accurately tested in a short time. Of course, a plowsole or other obstructing layer may make the soil above it much wetter than the ordinary field capacity for a time, but unless the layer is entirely impervious the downward movement will continue until field capacity equilibrium has been reached, and this will bear approximately the same ratio to the h. c. at the lower depth of penetration as in the upper soil. Where a plowsole does exist so that the entire surface is saturated before the penetration starts on downward the water in the surface soil is almost wholly lost by evaporation. The surface soil that is to be cultivated should be kept as dry as possible during irrigation to avoid this loss.

Water will move more freely in moist soil than in dry soil. You know how hard it is to wet road dust. You also know that the early spring irrigation seems to require more water than the late fall ones. Certain field trials indicate that while an inch of rainfall will only penetrate six inches into the soil that has dried down to the h. c., it will penetrate about a foot into the same soil when it is already half way between the wilting point and field capacity—the condition in which I have suggested that citrus should be irrigated. Toward the end of the irrigation season, therefore, it is frequently desirable to run smaller streams for longer times than in the early spring.

I have already intimated that moisture moves upward through soil to the roots very slowly, if at all. Because this is somewhat contrary to general belief, I reiterate it here. Very elaborate tests have been conducted to show that we certainly cannot expect water over one foot below the roots to come up to the roots in any one year. With our system of fairly frequent irrigation it is doubtful if the trees get any benefit from the water that has passed beyond the root zone. So with citrus irrigation we have the surface four feet to deal with.

May I outline two practical examples from the statements made above. A sandy soil with a h. c. of four per cent should always be kept moist enough so that it will show a moist color and feel slightly moist to the touch. This will mean probably about six per cent of moisture. Its field capacity is ten per cent, so that the margin that is to be supplied by irrigation is only four per cent of the weight of dry soil. This means that the surface four feet of such a soil can only retain about 2 1/3 acre-inches of water at one application. Field determinations made in the Ontario and Covina sections on sandy soils bear this out very closely. For those who are not familiar with the term acre-inch, I may say that it is the equivalent to an inch of rainfall. Two miner's inches running for 24 hours

give an acre inch, or 45 miner's inches for 24 hours distributed over ten acres give 2 1/3 acre inches. In other words, the use of more water than that at one time on a sandy soil is probably wasteful practice for the irrigation of citrus trees. It is probable that the small margin between field capacity and the danger point for drouth will require rather frequent applications of this small amount, possibly every three weeks, for the transpiration rate for citrus is high and the amount of usable water is low. Two and one-third inches will be partially wasted by deep penetration if it is all applied in the strip between the trees one way, rather than through all the soil. This, of course, is assuming a good irrigation, with little or no run off and without complete saturation of the surface soil.

In the case of a clay soil, with a h. c. of 12 per cent we have a much wider margin between the drouth danger point and the practical field capacity. It is probable that as much as six acre inches can be retained in the surface four feet of such a soil, i. e., a 60 miner's inch flow for 48 hours on ten acres. This larger amount of water which may be stored in the surface four feet of soil will permit of longer intervals between irrigation than on the sandy soil up to six weeks or even 60 days. This is generally borne out in practice. Sometimes, however, the root systems are not so well distributed on the heavy soils as on the lighter ones. This is especially noticeable in the adobes of Tulare County, where a three or four week interval sometimes seems necessary. In such cases the application should be governed so as not to wet the soil over two or three feet, as the root development might dictate.

The old economic law of "diminishing returns" applies to the use of irrigation water just as clearly as to the use of any other goods. As Mr. Jones has said, the annual yield of alfalfa in the Sacramento Valley was increased less than three-fourths tons per acre when the irrigation application was increased from 30 to 60 acre inches. Not only was the return in crop yield from the additional water entirely insufficient, but doubtless a continuous application of this sort would prove injurious to lower lands through seepage, to say nothing of the injury to the other man whose well is unnecessarily lowered through too heavy demands.

With citrus, then, the problem is to constantly prevent the soil which comprises the root zone from losing its moisture to such an extent that the moist feel and color begin to disappear; to wet the soil to field capacity only to the limits of the root zone, and to do this just as often as transpiration through the leaves uses up the supply of water that can be stored in the soil area.

Just about the only excuse for heavier irrigation for citrus than that outlined above is to be found in connection with the alkali problem. Where excessive alkali salts occur either in the soil itself or in the irrigation water the soil solution should be kept as dilute as possible through the use of fairly liberal quantities of water at frequent intervals. Then, too, where there is an open subsoil it is often possible to wash the injurious accumulations down below the root zone by using very copious amounts of water occasionally. This method should not be resorted to unless actually required, for it might often be employed at the expense of injuring

(Continued on Page 99.)

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We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

SKIN GAME

Shoes and other finished leather products are still beyond all reason in price. Cattle are down and hides are being "hoarded" by cattlemen who are unable to sell them, sometimes at any price whatever, and in any case not at a price which will pay for the labor of skinning. Yet the cattlemen continue to be profiteers. Yes!

ABOUT FIRES AGAIN

A scanning of the local country papers of California shows too often headlines like these: "Two Hundred Acres Grain Burned"; "Fires Sweeping Through Timberlands North of Shasta"; "Brush on Watersheds in Angelus Forest Burning"; and others which convey to irrigator and to producer a lesson of loss from uncontrolled fires. Repeat the slogan often, "Help prevent fires."

MORE BRIDES

A Japanese steamer landed in San Francisco last week, a Japanese steamer under a Japanese flag, and bringing to the United States 40 picture brides.

And some Americans maintain that such incidents should lead to closer relations between this country and

Japan! The short distance which some people can see into the future leads us to express ourselves editorially thusly:

Oh gosh!!

A NOTHER BOOST FOR H. C. L.

The federal government through its railroad labor board has given a lusty boost to old High Cost. Railway workers are to receive an increase of approximately 21 per cent. This will add between 600 and 700 millions to the compensation of the workers. Chiefs of the railways are now in session, devising ways of meeting this enormous increase. How much passenger rates will be raised is not yet announced, but the freight increase will be at least 18 per cent, and very probably 20 per cent, greater than prevailing at present. The increase to individual workers will be from 80 cents to \$1.04 per day.

CLEAN EGGS

The Poultry Producers of Southern California issues a live wire circular to members, usually made up of newsy items and especially of statement of market and financial conditions. Here is one from the last circular:

"Remember that dirty eggs cannot be advantageously handled at this season of the year. It is to your interest, as well as to the interest of every other member, to clean all eggs before packing for shipment to the association."

Of course a dirty egg contains just exactly as much nourishment as does the purest and whitest. It is possibly true that even the flavor is not affected. But notwithstanding these and similar suggestions which may come from the producers of dirties, they won't go in the market. There is only one way to produce what the market wants and that is to produce what the market wants.

PERMANENCY

D. B. Macoun, superintendent of the Mills Orchards near Maxwell, Colusa County, gave us a text for an editorial the other day. The text consisted of one word, "Permanency." Mr. Macoun says that word expresses more as to agriculture than any other which may be used. We are not here to mine and exhaust the riches of the soil; we are here to perpetuate and make it more productive for the next generation than it is for our own. Unfortunately, such preachment may be ill received by some who show by their practice that they do not believe such doctrine. But the welfare of the human race calls for greater consideration of this topic, and, most fortunately, our best farmers are appreciative of the great truth expressed by that word.

The orchardist is asking: "How may I grow a tree which will produce more at 20, 30, or even 40 years than it does at ten?" The nurseryman answers: "Secure a tree which has longest lived and most vigorous rootstock for foundation and on which is grafted scion from vigorous tree of known producing type."

The grower of crops asks: "How may I handle my soil so that records which have been made by producers of this country during the last two score of years may be reversed, that is, how may crop yield increase from year to year, instead of following the usual rule and showing annual decrease?" The soil experts give answers which are wonderfully diverse,

but, in a word: "Maintain and increase humus, or vegetable mold, content and restore the elements which have been removed."

But the questions which arise may not all be answered excepting through ages of time and by innumerable crop producers.

Meantime let the producers' hanner be inscribed, "Permanency."

REAL PROBLEMS

In this day when the average city newspaper editor feels that he is displaying good "newspaper sense" by taking a fling at the farmer producers and charging them, in boldface type, with being at the root of the H. C. L., simply because he thinks that city readers like that sort of "bunk," it is refreshing to find an occasional city paper that makes use of its editorial columns to comment in a sane way on pressing agricultural problems. Such a paper is the Sacramento Bee. During the past two weeks several editorials have appeared in that very excellent paper that indicate that the editor has not permitted politics and the general run of news to break his contact with agricultural affairs. So far as we have observed, the Bee is the only metropolitan paper in California that has commented on the sensational exploit of California Holsteins at St. Paul. It is likewise the only paper that has pointed out that while the price of hogs is at a point where many producers are being forced out of the business, the retail price of pork has not shown any appreciable decline. More recently a half column was devoted to the proposed pure fabric law.

If more city papers displayed the same broad concern on vital agricultural problems a deal of misinformation now reaching the public through twisted stories written by small hore reporters would be counteracted and all interests would be better served. The day of the city editor who regards the farmers of this country as fair game at which to take a "crack" is about over. Restricted production can, to a large extent, be charged to the short sighted policy affected by many city newspapers.

LET'S COOPERATE

The California Cultivator fully believes in the shoemaker sticking to his last and allowing the butcher, the baker and the candlestick maker each to have a chance to make a living and to make for us our candlesticks and other things which may be necessary for us in conducting farming operations. Presumably they can make them better and cheaper than can we whose training has been entirely to a different purpose. But if the profits demanded by manufacturers and middlemen become so excessive that we cannot continue to purchase needed supplies, there is some way of securing relief. If we must continue to pay 25 or 30 cents a pound for sugar, \$100 for a suit of clothing, the wool in which netted to the producer only \$5 or \$6, and \$10 or more for a pair of shoes when hides remain a drug on the cattleman's hands or sell at a price so low that he cannot hire the animals skinned and secure his expense back, something has got to be done.

There is faint indication of a little relief. A financial review, issued by large commercial institution, reports "reductions in cost of textiles and huge cancellations received in the furniture business and other indica-

tions of falling prices." But these "favorable" indications are more than offset by nearly a billion just added to the wage scale of railway employees and a probable 20 per cent boost in all transportation charges.

Perhaps the beet grower cannot build a sugar factory nor the wool grower woolen mills, but the only salvation for the producer these days is a fairly close understanding, or gentlemen's agreement, between himself and his neighbor. Or another suggestion comes as we look back in memory to scenes in the homes where mothers used the spinning wheel and the loom to increase the comforts and even the luxuries of the family. The suggestion may cause a spinning wheel or loom trust to boost prices!

MORE GAS

The gas line at the filling stations is still lengthening and we, the dear public, the gas users, are slowly arriving at the conclusion that there must be either more gas or fewer gas consumers. No other word expresses the situation created by the increase in automobiles, trucks, tractors and other power better than "astounding." This is not to be used as an apology for a gas trust, or other than a mere statement of fact. But the American people may well open their eyes and think a hit on this problem which must be solved. If more of mineral oil can be produced, so much the better. If not, then other sources of power must be, for it is unthinkable that the world could now move along without automotive vehicles and power.

Some years ago congress made provision for the manufacture and denaturing of alcohol, and an enthusiastic believer in the virtue of the enactment wrote: "When congress provided for the denaturing of alcohol after January 1907 it did for the agricultural industry more than it has been able to do for any other. It made possible thereby the new use of its products and in vast quantities for the manufacture of a fuel and gave the farmer a chance to compete with the coal and oil industries as a producer of a fuel to drive his own machinery as well as that of other industries."

That was some 13 or 14 years ago, and the act from which so much was hoped has proven another failure. Perhaps this was because of the alleged jokers in the amendments. Again, it is possible that if it had not been for these amendments which it was charged at that time, were secured by interested influences, the use of this form of power might have been held back by inherent weaknesses in manufacturing methods which scientific investigation would have been called upon to correct. But if that were the case 14 years ago, a situation now confronts us which calls for the best thought of our brainiest investigators.

The Standard Oil Company has issued a statement from a California standpoint, and an outline of the statement is:

"Crude Oil Supply: California will this year produce about 100,000,000 barrels of crude oil.

"Crude Oil Consumption: The Pacific Coast will this year consume about 110,000,000 barrels of crude oil, the 10,000,000 barrel difference being drawn from reserve stocks.

"Gasoline Supply: Greatest in history of California oil industry and augmented by the importation of millions of gallons from Eastern and Mexican fields.

"Gasoline Consumption: In 1915 there were 239,000 motor vehicles on the Pacific Coast, in 1920 more than 780,000; in 1915 there were 3,000 tractors, in 1920 at least 25,000. There are many thousands of gas engines in operation. In 1918 the Standard Oil Company's sales of gasoline amounted to 152,000,000 gallons. In 1919, 193,000,000, while the sales of 1920 will be more than 300,000,000 gallons. So far this year this company has sold 48.4 per cent more gasoline than for the same period of last year."

Now the question is squarely up to the users of power, and the greatest of these is the farmer.

Increasing the State's Wealth

By C. B. Messenger

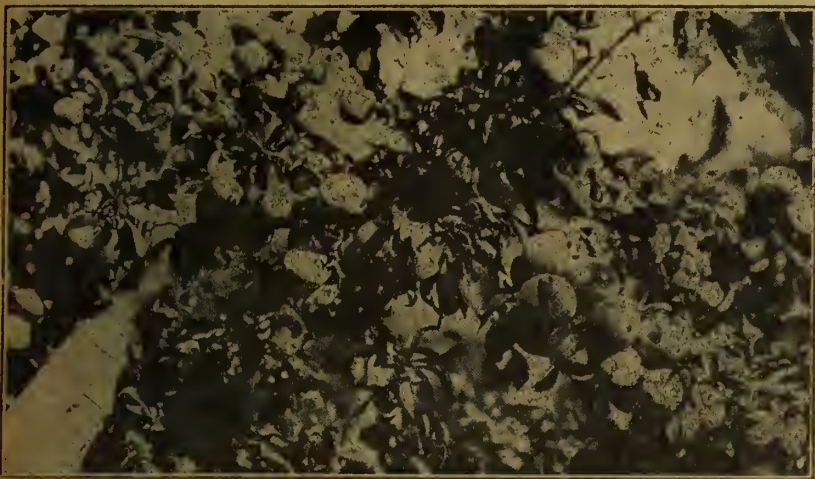
It has been remarked that it is a wonder that with the slipshod methods often followed in farm operations the measure of success secured by farmers is as great as it is. The rule of thumb or "doing as Dad did," was formerly, at least, quite sufficient. Today we are learning, and learning very rapidly, and we find there are better ways of doing things than those of yesterday.

We have often felt that orchardists were rather in advance of the general farmer. However, a look at the orchards of California, the greatest fruit state, and we find conditions which compel us to stop and ask: "Really,

work is progressing nicely, although we have had some minor difficulties. It has been necessary that we enlist the aid of fruit authorities on different standard varieties of California fruits in order to get the best action this first summer. We find that horticultural commissioners and members of different fruit associations are very willing to help us in every way possible."

CALIFORNIA CITRUS INSTITUTE

We have approximately 200,000 acres planted to citrus in California and produce annually a crop valued at about \$75,000,000. Yet until very



One of the Best of Its Kind

Photo of Santa Rosa plum in Madera County orchard. This particular tree was discovered by Commissioner Marchbank.

are the fruit growers so far in advance?" But there are orchards that are outstanding. Thrifty appearance gives indication of power of producing more wealth, and we say: "Why the difference?" The methods of culture are but little different from those of neighboring orchards, but that "little" expresses much. One of the items of this slight difference in the handling of the productive orchard may be in the selection of tree or selection of nursery to supply that tree.

Formerly, the principal nurseryman was the "tree agent," representing sometimes an unknown or far away nursery. Fortunately, he has never been received here with open arms, as in many Eastern sections. Established nurserymen have been in better form, and these established nurserymen, aware of this fact and the further fact that they are looked to as security in the building up of new orchards, have adopted methods of work in California far in advance of those followed in any other section. Hence the reputation of our nurseries.

Now they have gone a step farther and every nurseryman has insisted on more careful selection of buds and root stocks. An indication of this careful work we give on cover page this week in the picture of one particular tree that may mean much to the history of California horticulture. Regarding this tree, William T. Kirkman, president of the Nurserymen's Bud Selection Association, writes:

"Apricot tree under investigation by Nurseryman's Bud Selection Association of California. The best actual bearing record turned in by a grower of apricots this season is on an individual Tilton in F. E. Mannel's six year old orchard at Shafter, Kern County. This tree bore 591 pounds of fruit. It is the aim of the Bud Selection Association to secure records year after year and propagate only from trees that are proving to be consistent bearers of superior quality fruit.

"The other photograph shows a limb from a Santa Rosa plum tree which has been selected with the aid of George Marchbank, horticultural commissioner of Madera County. This is apparently the best tree in a good Santa Rosa orchard. There are practically no plums on the tree that would not go into a three-four or four-four pack.

"We are endeavoring to get all of the nurserymen of California into the Bud Association, as you know. The

recently we have had no general citrus association at which growers meet to discuss their cultural problems and learn advanced ideas from each other.

To meet the need of this great industry the citrus growers answered a call issued by the management of the National Orange Show and met at San Bernardino last February. There had been several of these informal meetings held under direction of J. W. Jeffrey and Dr. A. J. Cook when they were at the head of the state horticultural commission; others under direction of the citrus experiment station at Riverside. The one held last February under direction of Dr. Webber of the state experiment station afforded opportunity to discuss the need of making permanent this institute. The suggestions immediately took definite form in organization and adoption of by-laws, providing that there should be held two institutes each year; the one in the summer to be movable, held from place to place, the other to be held in San Bernardino during the time of the National Orange Show.

The declared purpose of this institute is to advance the scientific and practical knowledge of the industry through the holding of public meetings, publication of reports and such other means as may be deemed advisable. Any person interested in these purposes may be elected to membership by a vote of the directors and by paying the annual dues of \$2 per year. R. S. Valle of the Riverside experiment station is secretary of the institute.

FOREIGN OLIVE CROP

Consular reports from abroad show the olive trees in flower at present. In Italy rain is much needed, but orchard conditions are better than at same date last year. In Africa the report from Algeria is "very good," but in Algeria, while flowering took place under good conditions, some difficulties are being experienced with insect pests.

PEACH GROWERS NAME PRICES SOON

Sales Manager Sturtevant Jr. of the California Peach Growers writes: "Stocks of 1919 crop dried peaches on the Coast are now exhausted. We have no prices at this time. We do not expect to name prices on the new crop for a few weeks yet. It now appears that the new crop of dried peaches will be about the same in tonnage and quality as last year."

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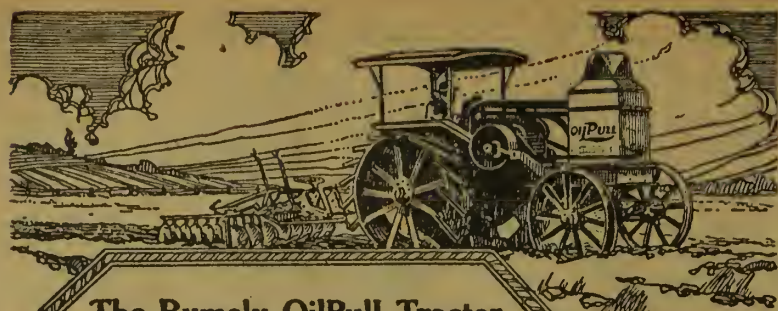
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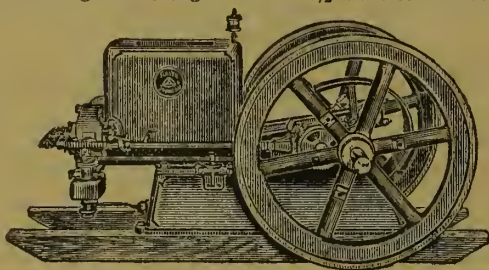


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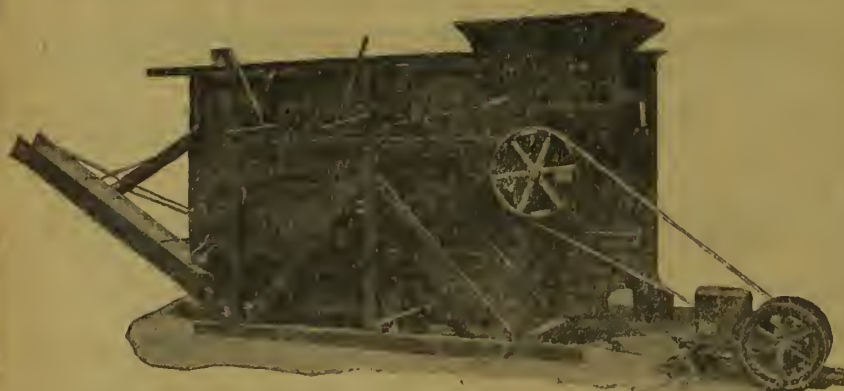


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Promise of Good Apricot Prices

Apricot growers who are members of the California Prune and Apricot Growers, which claims to market 75 per cent of the prunes and apricots produced in California, will be paid from 18 cents to 33 cents a pound for their 1920 crop of dried apricots, according to prices named today by the board of directors of the association.

Prices to be paid the growers are, according to quality and size, Sun-sweet quality: Extra Fancy Moor-parks, 33 cents a pound; Fancy Moor-parks, 30 cents. Sun-sweet quality, all varieties: Extra Fancy, 30 cents; Fancy, 28 cents; Extra Choice, 26 cents; Choice, 24 cents. Growers' quality: Fancy, 26½ cents; Extra Choice, 24½ cents; Choice, 22½ cents; Slabs, 20 cents; Standards, 18 cents.

Though the tremendous export demand, which so strongly influenced last year's high prices, has completely collapsed, according to H. G. Coykendall, general manager of the association, the association has been able to name a slightly higher average

price for this year's dried apricots than last year.

In announcing the prices to be paid the growers, Mr. Coykendall said: "The growers are very fortunate in being able to sell their 1920 crop of dried apricots for an average price slightly higher than the one they received last year. It is entirely due to the association that a market has been developed capable of taking care of this year's crop of dried apricots at the prices named today. By good salesmanship and advertising, the association has built up a domestic market which will make up in great part for the almost entire failure of the export trade, upon which last year's prices were based."

"If anybody thinks that the association, through its 10,000 grower members, is not responsible for the market conditions which made possible today's prices, let him ask this one question, 'What price would the packers pay the growers for their dried apricots today, in the face of a dull market and no association?' The price would be so low as to be ridiculous."

Peach Popular

THE volume of peaches shipped to market surpasses that of grapes, cantaloupes, strawberries, pears, grapefruit and plums, and is exceeded only by that of apples, oranges and watermelons, according to figures compiled by the bureau of markets. Among the ten leading domestic products classed commercially as fruits, irrespective of length of season, therefore, the peach ranks fourth in average number of cars shipped yearly. The four year average number of cars of each of the leading fruits shipped annually is: Apples, 37,375; oranges, 35,000; watermelons, 28,600; peaches, 25,384; grapes, 22,300; cantaloupes, 17,500; strawberries, 11,950; pears, 10,070; grapefruit, 6,800; plums and prunes, 2,980.

The four year average of about 25,000 cars of peaches may be compared with an average of about 35,000 cars of oranges, 29,000 of watermelons, 20,000 of grapes, 18,000 of cantaloupes, 12,000 of strawberries, 10,000 of pears, 6,800 of grapefruit and 3,000 of plums.

Production Irregular

Owing to the uneven yield it is not easy to say whether production is increasing or decreasing. The total crop estimate for 1918, including both the commercial and general crop, was about half the average of the two preceding seasons, while in 1919 the estimate was two and one-half times that of the preceding year and larger than that of any year from 1916 to 1920. Some Northern states, particularly New York, suffered heavy losses from winter killing of trees during the past two or three years. New York led the states in peach production before 1917 and in that year shipped more than 7,000 cars, or one-fourth the total out-movement of peaches that year, but dropped to 1,057 cars the next year and shipped 1,434 in 1919. The official forecast shows a moderate increase in the New York crop this season.

During the past few years Georgia and California have kept far in the lead as peach shipping states, with combined volume equal to that of all other states. Formerly about nine-tenths of the great California peach crop was used for drying or canning. The increasing demand for market fruit brought out nearly 8,000 cars from California last year, or a little more than the Georgia shipments for the same season.

The general trend of shipping volume for the past four seasons has been downward in the East and North and upward in the South and Southwest. The Rocky Mountain section apparently is holding its own, with gains in Utah, but this season the crop in the whole Northwest is expected to be light on account of injury from cold weather.

The original commercial peach country, including Maryland, Delaware, New Jersey and adjoining sections, shows no decided trend in production, but the section is now of relatively

less importance in the market. The general crop forecast for the present season shows a decrease of about ten per cent for the whole country, with losses chiefly in the Southwest and gains in the North and Middle West.

Season Two Weeks Late

Beside the two great shipping states of Georgia and California, the other early peach shipping states are light in volume of movement this season, and time of beginning shipment is one to two weeks later than last year.

Texas, which shipped nearly 2,000 cars last year, has shipped none in car lots as yet and probably will have but few to spare on account of a peach shortage, amounting to a crop failure in parts of the state. Independent estimates made locally place the Texas crop at only two per cent of last year's, which would mean that very few cars will be shipped out of the state.

The movement just beginning from California is so far about equal to that of the early part of last season. The crop in that state was reduced considerably because of unfavorable weather but still compares favorably in size with previous crops, except that of last year.

The latest available estimate of the South Georgia crop shows probable movement about equal to that of last year. The present indicated yield is somewhat less than last year and less than early estimates of this season, but shipments last year were cut down before the end of the season because of rainy weather, damaged condition of the crop and shortage of ice for refrigeration. Many of the Elbertas had to be sent to local canners.

Early varieties of Georgia peaches have sold this season at 25 to 75 cents per carrier higher than a year ago and still farther in advance of early average prices of the preceding seasons. The Carman, a leading mid-season kind, particularly in northern markets, sold near the end of June, or two weeks later than last season's market opening for this variety, at \$3 to \$4 per six-basket carrier, compared with \$1.75 to \$2.75 a year ago, when the market was unsettled by offerings of much stock of poor keeping quality.

California early kinds, like Alexander and Triumph, have appeared in a few Western markets. Triumphs sold in Chicago July 1 at \$2 to \$2.25 per box. Last season, from June 17 to June 30, the range of early California varieties at auction in Chicago, Kansas City and Minneapolis was 80 cents to \$1.95.

A few Texas Early Wheelers were sold in June at \$4.50 to \$5.00 per six basket carrier, compared with early quotations of \$2 to \$3 a year ago. The local supply is light in the South Central markets usually held by these peaches, owing to peach crop failures in various adjoining states.

Consideration of price ranges in the various cities quoted in the paragraph above suggests that high averages of price are common in large

mental plants, and on the methods of their control, and by furthering co-operation between the scientific investigators and the manufacturers of chemicals and appliances, especially for the sake of effecting standardization and economy in the production and use of the means of fighting pests. Also, it expects to aid in the dissemination of scientifically correct information regarding the control of injurious insects and plant diseases.

BORDEAUX MIXTURE BENEFITS CITRUS BLAST

Of the ten or 12 sprays used in the Butte County farm bureau citrus blast control experiments in demonstration orchards, Bordeaux mixture has given the most beneficial results as reported by the farm adviser.

Not only has Bordeaux mixture helped in the control of the citrus blast, but it has helped to the extent of being almost a cure, and this is most gratifying to citrus growers in this county and all over the state.

This bacterial disease is widespread in Northern California, but it is not yet found in Southern California. No control measures were known and this is the first time any methods of controlling the disease have been tried out.

Dr. H. S. Fawcett, who is in charge of the experiment work, gave a report of his findings on the sprayed plots in the McCune orchard. Those trees which were sprayed all had less than five dead leaves per tree, while the check trees which were sprayed had from 20 to 40 dead leaves per tree. The spraying was done in the fall, during the early part of December.

Although one year's experiment will not give conclusive evidence, nevertheless, the indications are very hopeful, and with one more year of work very reliable information should be secured in reference to the control of this blast.

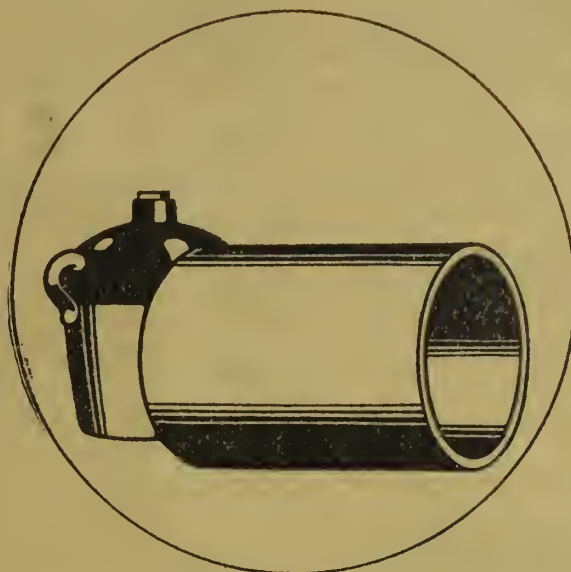
The following farmers have had citrus blast demonstration in their orchards and have given liberally of their time in helping with this experiment: Fred Cornehl, Joe Black, R. P. McCune of Wyandotte, Geo. Gates, and Dr. Middlehoff of Thermalito.

ERADICATION OF CITRUS WHITE-FLY AT BAKERSFIELD

For a number of years one of the citrus feeding species of whiteflies has existed on the Stockdale Ranch near Bakersfield. An attempt was made by the old state horticultural commission to eradicate the pest on this ranch, but without success. Viewing the occurrence of this insect at Bakersfield as a menace to the citrus industry in Southern California another attempt at eradication has just been completed through the cooperation of the county horticultural commissioner of Kern County and the office of pest control. Mr. Knowlton, the local commissioner, and Mr. Brannigan of the office of pest control have given the work their personal supervision and it has been painstakingly carried on. Approximately \$750 was spent by the county and the Stockdale Ranch. It is hoped that this will mark the end of the infestation, but the work will be followed up with frequent careful inspections.—Harry S. Smith, in charge of Office of Pest Control.

LANT PROTECTION INSTITUTE

At a recent meeting of the Arizona state horticultural commission, E. W. Hudson was elected chairman. Mr. Hudson has been a member of the commission for the past year and a half. He succeeded Hon. Andrew Kimball as chairman, who still retains a place on the commission as a member. Don C. Mote has been re-appointed state entomologist. W. H. Robinson was reelected secretary of the commission. Dr. Oscar C. Bartlett was reelected field entomologist and D. C. George succeeds himself as plant entomologist. Three new assistant entomologists were added to the staff. These are: R. J. Fiske, with headquarters at Stafford; Frank E. Todd, with headquarters at Yuma, and E. E. Russell, for the Santa Cruz Valley and Mexican border.



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Fumigation of Citrus Trees



IS IT possible to fill the bugs which infest citrus trees so full of prussic acid gas that they learn to like it and thrive upon it? In other words: "Are black and other scale pests of citrus trees becoming immune to the ordinary fumigation dosage?"

Years ago "Only black scale. Easily controlled" were common remarks. Today "The black scale is our worst citrus pest" is heard wherever citrus growers meet.

Last week they—300 of them—met at Covina because of call of Horticultural Commissioner Ryan and discussed fumigation.

R. S. Woglum of the United States bureau of entomology was the chief speaker. He presented data compiled from experiments and field observations made during the past season and mentioned various factors influencing the kill of black scale, such as off-hatch, temperature conditions, heavy cover crops, resistant scale, insufficient dosage, poor equipment and careless work.

He stated that the presence of heavy cover crops at the time of fumigation militates against efficient work by preventing the skirt of the tent from setting close to the ground and because the liquid gas, which reaches an extremely low temperature when leaving the pump nozzle, freezes on the cover crop and vaporizes too slowly to keep up with the tent leakage, thus preventing a high enough concentration to kill the scale.

"Liquid hydrocyanic acid is not a failure," said Mr. Woglum. "Some districts have had as good work done this past year with liquid gas as ever before in their history. In our own experience during the past three years we have in every case observed at warm temperatures exactly as good results with the liquid gas as with the pots. Series of trees side by side have been fumigated at normal temperatures under both systems, and in such cases if either way was to be favored, it was the liquid gas."

The following specific recommendations for fumigation procedure in the Covina and Charter Oak districts were made by Mr. Woglum:

Trees should be taped, not guessed; and dosed according to schedule.

Black scale should be in the immature condition when fumigated.

Use heavy dosages. Certainly not less than 88 per cent schedule; a 100 per cent as soon as the trees will stand this strength.

Fumigate as early in the season as the scale is in condition.

Where "off-hatch" is present, double fumigation is advocated. The first treatment should be early in the season. The second probably two to three months later, or as soon as eggs are all hatched.

Avoid having a heavy cover crop about trees while being fumigated.

Avoid winter fumigation, particularly at cold temperatures, if possible. Where winter treatment is necessary, practice daylight work.

Caution operator to prevent nozzle of pump coming close to tree trunk.

Results at temperatures below 500 degrees Fahrenheit average poorer than at higher temperatures.

Fruit injury increases with high dosage. A slight loss from pits is less expensive than a heavy loss from scale infested trees.

Do not fumigate trees that have been sprayed with Bordeaux mixture within a year; painting high upon the trunks and branches is also conducive to injury from fumigation with hydrocyanic acid gas.

Each grower to keep records of individual tree dosage; also of temperature.

Commissioner Ryan called attention to the abundance of scale at the present time due to favorable climatic conditions and presented figures compiled from reports of district horticultural inspectors, showing that 27,000 acres of citrus trees were fumigated in Los Angeles County last season for black scale, at an estimated cost of \$850,000, and that 2,000 acres were sprayed at an estimated cost of \$50,000.

Of 548 fumigated groves reported on to date, in approximately 60 per cent good to excellent results were obtained. Of 147 sprayed groves, good results were secured in 20 per cent.

J. R. LaFollette, foreman of pest control of Leffingwell Ranch, gave account of his three years' work on that ranch. This address will be given almost entire in a later Cultivator.

The effect of arsenical sprays on the flavor of oranges was discussed by Professor George P. Gray, chief chemist of the California state department of agriculture, who gave the results of investigations recently carried on here by his office in cooperation with the Fruit Grower's Supply Company and the office of the county horticultural commissioner.

He stated that the surprising fact has been established that the use of two well known proprietary sprays, sometimes applied to citrus trees in the effort to control black scale, results in a material reduction in the acid content of the oranges and affects the flavor to such an extent that the fruit is rendered flat and insipid.

The spray materials in question are composed of lead arsenate, soap powder and sulphur. In reply to a query put by one of the growers, Professor Gray stated his opinion that the arsenic in the spray was the cause of the loss in flavor.

Concerning Our College of Agriculture



MR. ROYCE'S article which was given in the California Cultivator of June 5, together with a letter by Mr.

Wing, has caused no little comment and has brought to the office heartiest of support for the college of agriculture and for the university; at the same time other comment which contains suggestions which may be of interest and of profit to Cultivator readers.

One communication we will not give. This has to do with a condition claimed to exist as to lack of incentive to the highest and best in spiritual or at least moral life. This condition, however, is not peculiar to California, as may have been noted by many of our readers, especially those who noticed a recent issue of the Literary Digest which quoted from addresses made to students by President Richmond of Union College, Chancellor Day of Syracuse, Dean Jones of Yale and President Hibben of Princeton. Strange as it may seem, these educators, in making the addresses to their classes and appealing for the proper attitude toward life's problems, charge to the late war responsibility for lowering our moral ideals.

Dr. Hibben

Today I have particularly in mind the danger of a loss to you of something of incalculable value. It is not the danger of missing something which you have never experienced, but of losing that which you have already possessed, that possession you shared in common with us all during the years of 1917 and 1918. There came to you then a peculiar elevation of spirit, when the world suddenly awakened to a realization that there was a cause to defend, challenging one's loyalty and commanding one's devotion, and that there was something to believe in, something to fight for, and something even to die for. There was no one of us who failed to experience this moral and spiritual exhilaration. In those days we lived on the high places of the earth and saw the vision and dreamed the dream of a new order of things in the world. The words "duty, sacrifice, service," were often on our lips and constantly in our thoughts. More than that, they were actually illustrated in the lives of most of the men now before me. The cause itself has been vindicated by arms, but its ideals have not been realized as yet in the days of peace. Too soon we

are tempted to forget past allegiance and loyalty.

President Richmond

There is evidence enough to show that for the moment at least we have reacted to a lower level. The magnificent spirit called out by the demands for sacrifice and heroism has flattened out into a passion for self indulgence and a mean competition of greed. It is a passing phase. We have too much faith in human nature to believe that we shall not recover. But we must not blind ourselves to the fact that the world over the mass of men and women are in the mood to barter their spiritual inheritance for a mess of pottage.

Dr. Day

When the average workingman can earn the living of seven days in two, it is a great temptation to loaf four days. It is not the rich oppressing the poor. It is the poor oppressing both the poor and the rich. It is getting money on false pretenses.

I would move an amendment on the profiteer price law: Fine the man who pays three times more than he can afford to pay. And if you are going to fine the traders for charging too much, fine the mechanic and workingman for exacting three times what their labor is worth simply because they can get it.

Dean Jones

It is astonishing how much faith many parents have that Divine Providence will bring up their children. They are becoming more and more indulgent. There is no longer insistence on the sacredness of the moral code. When something is twisted in a boy's life, if he gives you his full confidence, you may be practically sure that his trouble can be traced to some peculiarity, neglect, or blindness in his home training. Unfortunately, the training of parents is not always negative; the blind imparting of worldly ambitions is too characteristic of the American family.

Dean Jones places the responsibility and failure directly up to the parents, and there it belongs. There should be more oversight of our young. However, this does not entirely release our colleges from the duty before them. We will not touch this phase of the subject further but will give some of the comment brought out by Mr. Royce's former article.

R. R. Lockhart

Like a great many other alumni, I read the article "Concerning Our College of Agriculture" in the Cultivator with a keen sense of pleasure and with a feeling that at last someone had come to the front to initiate an active inquiry into ways and means for the development of a more efficient college of agriculture.

Not infrequently, when two or more of us, who have long since worn out the last remnants of our college corduroys and senior sombreros, come together; after we have found out what "Ed" is doing now, and where "Bill" is located, etc., the question arises, "Well, after all, what do you think now of the college of agriculture?" We remember the farm and what fine fellows and wonderful instructors "Tommy," "Daddy" True, Sam Beckett and others were. We still think them that, and in addition have added, due to some severe knocks in the school of experience, a larger respect and appreciation for what they taught us. We know now the handicaps of equipment and organization against which they contended and how they made up for it by greater personal effort and sacrifices. But the trouble was, especially in animal husbandry and in agronomy, that we didn't get enough of it. True, we spent four long years in college, but for the first two and one-half years we were taught farming on the campus at Berkeley, a place wonderful for that which it is intended, yet a place artificial in substance and life, and which is far removed from the atmosphere and the life in which farmers are wont to grow thrifty and prosperous. We plodded along through the fundamental sciences underlying the broader agricultural fields, yet failing in a large measure to appreciate the application of these to the practical. Don't mis understand me. I do not contend that students should not go to a place designed and adapted for study, nor that they should not study the fundamental sciences. But it does seem to

me that the present plan should be revised. Why not take prospective farmers early in their college courses to Davis, there let them see, let them discover for themselves what farming is, what livestock looks like in actual life, how plants actually grow and are cared for? Let them see why it is necessary to dig down to the underlying causes of why things have to have certain attention from their germination or inception on through their natural life to a successful fruition. Having then an intimate, even though superficial, idea of the actual animal or plant, by the developing of which at some future time they expect to make a living, let them go to Berkeley where lecture rooms and laboratories are provided and let them there dig out the scientific side of their particular specialty. But, above all, keep an intimate association between the practical money making and money losing farming and the theoretical side. Don't fill the student with theories innumerable and let him find their practical application by the sad knock of experience and by financial losses, resulting in discouragement and disgust with his life profession, rather point out to him in the field as he progresses the relation of theory to actual practice.

There is another side to the question. No one denies the value of the associations at Berkeley. Many value them more highly than their actual studies, and rightly so. For this reason, for administrative reasons, and for the reason that there are so many divisions and parts of divisions of the more scientific side of agriculture that can more easily be taught at Berkeley than at Davis, I do not see wisdom in the suggestion of moving the headquarters from Berkeley. Why not leave it headquartered where it is now with its connections and associations with the university as a whole, but have various branches of it located with reference to the type of farming in various parts of the state? Then let the student who is to major in animal husbandry go to Davis early in his college career and get that intimate touch and association that will make him a judge of livestock to compete with any. If there are certain things that he can be taught better at Berkeley, let him spend at least one year there. In a similar way let the citriculture student spend not over three years of his course at Riverside, the pomology student at Davis or San Jose, and so on. One can see eventually a branch in the north Coast counties where dairy problems of that section can be better worked out and taught than elsewhere.

The university and the college of agriculture are now overflowing their accommodations. Why not eventually have a branch in the central Sacramento Valley (Davis), the central San Joaquin Valley (Fresno), one in the South at Riverside and so on, where students of each locality can get in intimate touch with the problems of that locality as part of their college course?

The state must realize that its strength lies in its agricultural population. It will eventually take care of them and in the locality best suited to teach them that which will be of most value to them.

Let the college of agriculture be headquartered at Berkeley but do not have it limited to the bounds of Berkeley. Let it spread to the various agricultural community centers, yet let it still remain a part of the larger university.

Louis G. Sutton

I am very much interested in the suggestion to move the entire agricultural college to Davis. I believe that an agricultural college student should have an opportunity to be in close touch with the farm during his entire course. Your enterprise in bringing this matter to the attention of the state is commendable.

W. S. Guilford

I have read with a great deal of interest your article in the June 5 issue by R. P. Royce entitled "Our College of Agriculture."

There seem to be a great many reasons for moving the entire college of agriculture to Davis. The most important thing a boy can get from an agricultural college course is the actual contact with the college farm and with the men who have working

charge of the various departments. As I look back at my work in the Wisconsin college of agriculture, I am satisfied that I received far more benefit from Frank Kleinheinz, the shepherd; George Little, the hog man; Jimmie Hutton, the horseman; George Hutton, the farm superintendent, and Arthur Banks, the dairy herdsman, than I did from Professors Henry, Russell, Babcock and a lot more of the heads of departments in the institution.

I do not believe it is possible to maintain an entirely successful college of agriculture, except on a farm, and if it is to be moved, the quicker it is moved the better.

Roy E. Campbell

I have been much interested in the discussions of the college of agriculture of the University of California in your recent issues, especially that of June 5. As the writer is a graduate of several years standing, he feels that he can look back on his college course and see both its advantages and disadvantages much better than a graduate of this year. Great as the disadvantages may be under which the college is now laboring, the writer feels, and believes that most graduates will agree with him, that it would be a great mistake to separate the college of agriculture from the university and move it bodily to Davis.

Collier's Magazine recently ran a

series of articles on our American colleges by several of the most prominent business and professional men in the country. Diversified as their several interests were, throughout all the articles ran a similar thought, which was that the colleges should give the student a thorough training in fundamentals rather than specialized training alone, that he should be taught to think, to view things broadly, to have a keen understanding, as distinguished from mere technical training. The importance of the latter was readily recognized, but emphasis was placed first on a very thorough preparation as a foundation, and then on the proper technical training.

The courses in the college of agriculture at Berkeley are practically all founded on certain basic sciences, such as chemistry, botany, physics, biology, etc. These must be taken in order to lay the proper foundation for the advanced agricultural subjects to follow. Having taken these basic courses, the student is able to readily comprehend the whys and wherefores when he gets into agricultural chemistry, stock feeding, plant and animal breeding, etc.

Along with these fundamental elementary courses for the first two years are given others in economics, history, English, mathematics, etc., which are recognized as necessary in a balanced education. These elementary, and the so-called cultural

courses, go a long way toward training the mind and broadening the viewpoint, so the student is well equipped to tackle the more technical problems along the line he has chosen to follow, whether it be animal industry, fruit (Continued on Page 115.)

DUTY OF WATER

(Continued from Page 93.)

lower lands by seepage. Fortunately the alkali problem does not affect a very large area of citrus orchards at present. Careful attention to the economic use of water will doubtless delay and possibly prevent serious alkali effects in later years, while such effects might easily be expected to follow careless or extravagant use of water.

Many of the details, such as the length of time water should run in a furrow and the rate at which it should run, must be left to the individual irrigator. Each individual will likely find that his practice must be varied for each irrigation, depending upon the degree of dryness of his soil or the development of plowsole. The penetration of the plowsole and the prevention of run off are also rather individual problems. Thus it is that the experience of others is of most value to us, not when we attempt to adapt it in its entirety, but when it causes us to see our own problem more clearly or from a new viewpoint.



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Harvesting Sweet Potatoes



THE growing of sweet potatoes has become an extensive industry in Texas within recent years. To meet the general demand for information as to most profitable handling of the crop, the Texas college of agriculture has just issued a bulletin from which we take the following points on harvesting, which will be of interest to the many sweet potato growers of this state:

Dig at Right Time

A great deal of success in storing sweet potatoes depends on the way in which the crop is handled in the field. Except for early marketing, sweet potatoes should not be dug until they are well matured, as immature stock is much harder to cure and to keep. Sometimes an early frost will injure the crop, but ordinarily the season in Texas is such as to allow full maturity. It is never safe to take chances on a late frost. Where a dry summer precedes a wet fall most growers are often inclined to delay digging until too late in the season. Where this is done there is danger that the potatoes will become frost bitten in the field. If the vines are merely frosted, the potatoes are still safe for storing, but they should be dug as soon as possible. On the other hand, if the frost has killed the vines to the point of injuring the tips of the potatoes, there is little chance of the crop keeping well. If this condition arises, the potatoes should be sold immediately for early use.

The natural yellowing of the foliage is usually a good indication that the potatoes are ready to be harvested. Another test for maturity is to cut several potatoes and if the cut surfaces become white and dry in a short time the potatoes are mature; on the other hand, if the cut surface remains moist and turns to a darker color, it is an indication that the potato is immature. Furthermore, the skin of the mature potato cannot be rubbed off as easily as that of an immature one.

Digging Hints

The potatoes should be dug as carefully as possible, avoiding all unnecessary bruising. For this purpose a plow with two rolling colters attached to the beam to cut the vines, and several steel prongs on the mold board to separate the soil and the vines from the potatoes makes a very handy implement for digging. A "middle buster" with rolling colters also does satisfactory work. A common mistake is made in not going deep enough with the plow, and as a result many of the potatoes are cut or bruised. The best time to dig is during warm, dry weather, since the potatoes, especially the bruised ones, are more likely to rot when dug while wet; besides, the potatoes dug during wet weather will be more watery, and hence harder to cure. However, in wet seasons the grower will often be forced to dig when potatoes are wet and muddy. Under these conditions sweet potatoes require extra care in that they must be dried quickly and the moisture not allowed to stay on the potatoes for any considerable length of time. Wet potatoes should never be stored in great bulk, but should be spread out in small quantities if possible. It is poor policy to dig the potatoes late in the field, as they may be injured by frost or rain. Neither is it wise to dig early in the morning when the ground is more or less cool and the vines wet with dew.

The best time to dig is after the sun is well up and not later than three or four in the afternoon, or until such a time that the grower will be able to pick up before night all that he has dug. It is not safe to allow the potatoes to remain exposed long to a hot sun, although a mild sunlight will help them to dry off.

Grading

The potatoes should be graded while being picked up. To do so will save time, labor and excessive handling. Some of the pickers should gather the No. 1's and others the No. 2's, and still others the bruised, the cut and the jumbo grades. Mechanical graders are being perfected, and no doubt they will play an important part in the fu-

ture in the proper grading of sweet potatoes.

Handle With Care

Potatoes should be handled with extreme care and as little as possible if they are expected to keep well. Where storing is done in hampers, baskets or crates, it is best to gather the roots in these containers and place in the house as soon as possible. They should never be handled in sacks or hauled loose in a wagon box. When the potatoes are hauled from the field to the

Cutting Labor Costs in Irrigation



EVERYTHING the farmer has to buy, from a jute sack to a 40 horse power tractor has gone up and up in price since the peaceful days of 1913. Feed and fertilizer, fuel and flapjacks have climbed to perches wholly out of reach of anyone not equipped with a step ladder and a grappling hook. But perhaps the most effective change in increasing the farmer's outlay is the increased cost and surprising scarcity of farm labor. There never was a time when labor saving devices were so essential to success. In these days the rancher who has so equipped his place with labor saving tools and machinery that one man can raise the crops and attend the stock that formerly required the labor of two is reaping a deserved reward for his foresight.

It is just as practicable to reduce the labor of irrigating by the use of modern equipment as that of plowing or harvesting. Old style wooden gates and flumes demand extensive repairs and labor once a year to keep them in working condition, and after a few seasons must be entirely rebuilt. They always leak more or less (generally more) and sometimes permit the flooding and scalding of valuable crops. Sometimes, in the dry season, they get afire, as a result of weed or brush fires creeping up about them, and hundreds of dollars worth of lumber and labor go up in smoke.

The shrinking, and warping which they undergo in dry seasons makes their water holding qualities more like those of a basket than a pail, and the swelling which ensues after the water is turned in makes wooden slides and flash boards stick and balk like an old fashioned barn door over a settling sill. There is an unconfirmed rumor that one farmer was moved to use unseemly language by the behavior of a wooden check under such conditions.

Wooden gates and flumes compare with the corresponding articles made of metal about as the wooden plow of

house they should be placed directly in a spring wagon and carried over the smoothest road, the aim, of course, being to avoid unnecessary shaking and jarring, which injures the potatoes. It is also necessary to fill the crates and to place the cover tightly on top so as to prevent jolting. If a spring wagon is not available, a deep layer of straw or hay should be made in the wagon box.

It is very important to prevent bruising, which is mostly caused by rough handling, because bruised potatoes are harder to keep, and even if they go through the storage period without rotting, they are practically unmarketable on account of their unsightly appearance.

ancient days compares with its twentieth century successor. Their operation calls for the use of twice as much time and strength and the results achieved are much more uncertain. Wooden irrigating devices should always be operated by careful and responsible men, whereas the opening and closing of metal gates, being easier and surer, may sometimes be left to cheaper assistants. When the owner of a small farm who has no hired help has to be away for a day or two, the working of a few metal gates, the heavier types of which are provided with hand wheels, need not be especially burdensome to his wife or half grown son.

Cast iron automatic drainage gates do away with all the labor connected with the drainage of lands which lie between the high and low water levels of near by ditches, rivers or bays. Attached to sections of corrugated pipe which run through the dike or levee, they readily swing open to allow the flow of water from the land, but close tightly when the water level in the ditch or stream is raised, and permit of no back flow. Once installed they will perform their work for many years with little or no attention from the owner.

The farmer with small or large acreage to drain or to irrigate, who makes no use of metal gates, adjustable irrigation dams and other articles which have been devised to lighten his labor is in a position similar to that of the one who refuses to see the advantages of a planting machine in place of hand dropping in the furrow, or of wire fencing in place of rails. The Biblical command to the worker whose tools were dull was to "Put forth more strength. Strike fiercely and many times." Californians get more results by holding them for five minutes on a grindstone driven by a gasoline motor, or by junking old style tools altogether and substituting modern devices that do the work themselves.

Organized Protection



CALIFORNIA bean growers, in fact, bean growers of the whole country, have had a real problem in disposing of their 1919 crop at a price which would pay for the labor of preparing the ground, cultivating, hoeing and harvesting. Profit has hardly been considered. The Eastern growers are talking of cooperation as a means of securing fairer prices and to that end will hold on August 17, either in Lansing, Michigan, or Chicago, Illinois, a meeting at which bean growers of the United States are asked to gather and devise ways and means of perfecting a nation wide organization.

Bean growers of California are looking to legislation for relief. In his address before the recent annual convention of the California Bean Growers Association, President Mendenhall touched upon every phase of the bean question that had to do with production. He said:

"We are confident that the growers in the main realize the necessity of an organization to protect the bean industry which means so much to the state and to each and every bean grower's prosperity.

"During the year investigation was made of the advantages of selling hand picked package goods under brands of the association; also the

cost and benefits of advertising. The possibilities of securing sacks at low cost for the growers were looked into, but it was not deemed advisable to enter into any of these activities, at least until such time as the association is in a stronger financial position, particularly with reference to surplus working capital which can be safely appropriated for these purposes.

"It is believed that a proper accounting system has now been worked out, and as soon as the bulk of the heavy work in connection with the handling of the large 1918 crop has been completed, a perfected system will be installed.

"Some study has been given to amending our present contract when the present period has run out, with the view of eliminating unworkable provisions, strengthening powers and widening the scope of the association's activities. One of the weakest points of our present contract is the right given the members to withdraw beans on April 1, 1920. This gives rise to complications in accounting and selling which are almost insurmountable. Even now some few members have not expressly stated whether or not they have withdrawn their beans as of April 1, which leaves the association officials in doubt as to just what course to take. The accounting in

such cases must also necessarily be held in suspense.

"I cannot conclude this report without commenting on the apathy of many of the members in reference to the request of the management for the legal consents for moving the offices from Stockton to San Francisco. This was a small matter, and yet the fact that many members neglected to send in these consents has caused extra expense and difficulties in connection with holding the annual meeting of the association. I trust that members will cooperate a little more promptly in the future in such matters.

"It has been the conclusion of the management that the association must necessarily give more attention to its organization department and the district field work than is the case with other associations. A bean crop may be raised on a particular parcel of land one year and then a crop may not be raised for three or four years. Hence, the areas planted to beans will constantly change and the actual bean growing membership will continually shift. Because of this condition it will be necessary in order to maintain a successful association to carefully canvass the bean sections each year during the growing season and prior to harvest in order to secure control of a sufficiently large volume of beans to make the association a complete success. This shifting condition and the changing proportions of the varieties raised makes the bean industry essentially different from the fruit, raisin and nut industries, where the orchards and vineyards are fixed, ownership stable and crops permanent.

"For these reasons it is very essential that we maintain the district managers and district offices. These officials can also be of much direct personal service to the growers by giving information and advice and keeping the growers more directly in touch with the affairs of the association.

"In order to secure the greatest measure of success we believe a canvass should be made in Southern California before the next harvest in order to secure a wider control of the industry. Requests have already been made by growers south of our present field of activity for membership in the association. It is felt also that farmers in the Los Angeles territory are quite familiar with association marketing methods and that extending the operations of the association in this section would not be difficult or expensive."

A NEW WEED PEST

During the past few years a serious weed pest has slowly but surely been extending over the southern half of California. In light sandy soils its multiplication has been rapid. It is called the "ground burnut" and its proper or botanical name is *Tribulus terrestris*, though the name "troublous" would have answered equally well.

The department of botany, University of California, writes:

"We have certain information that the so-called ground burnut" occurs within the borders of counties listed below. This weed is unquestionably becoming a serious pest in a number of places in the southern half of the state, and it would seem highly desirable that some concerted effort be made to insure its eradication: Counties of San Joaquin, Tulare, Monterey, Kern, Los Angeles, Imperial."

Added to this the writer last week saw thousands of these weeds growing in the western part of San Bernardino County, and it is safe to say they are becoming common in every county in the south half of the state. The plant grows flat along the ground, has a small, deep yellow flower and leaves resembling those of a vetch. A strong plant may become ten feet across, but this size is unusual. The chief distinguishing feature for recognition is the very symmetrical and somewhat attractive spiny nut. It is about a half inch across, of beautiful formal design suggesting a five pointed Greek cross. Often only flowers and leaves are seen above, but if the plant is turned over the maturing "nuts" will readily be found. This weed should be eradicated wherever found.—E. B.

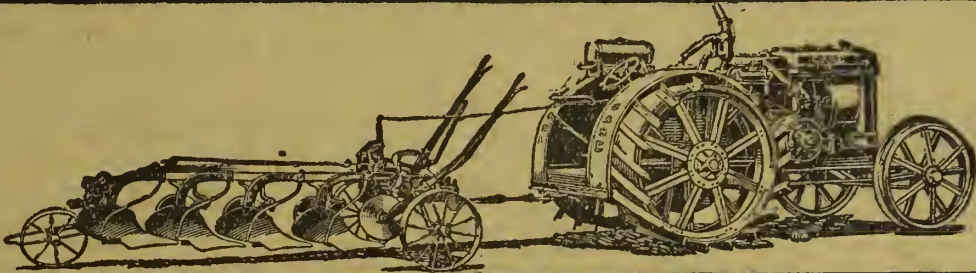
The Milk Producers Association of Central California has withdrawn from the state association because it did not wish to join in the scheme for standardization of products throughout the state.



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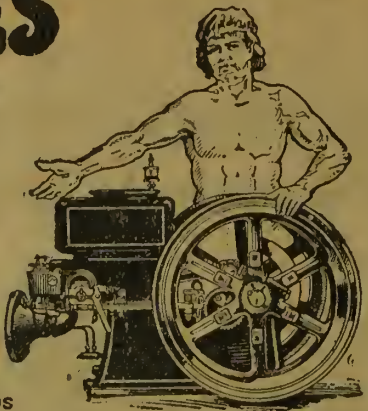
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When Writing Advertisers Mention California Cultivator

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Camphor Culture

Have you any literature on your files regarding camphor culture and production? Could you advise where to write for same?—Subscriber, McFarland.

Write to Department of Agriculture, Washington, D. C. Some literature has been issued on the subject, dealing mainly with experiments made in Florida.

Bougainvillea Blasting

My bougainvillea, which bloomed a solid mass, is now turning yellow on the flowers. Is it time for this, or what ails it? Shall I spray for insects as I do my roses?—Subscriber, Perris.

As only blossoms are turning yellow it is evidently not affecting the whole plant and is therefore from an outside cause. It may be from sunburn in a very hot spell, but probably is due to "red spider." Would advise spraying at once.

Chrysanthemums Dying

I enclose root of chrysanthemum from plant four feet high, from one of many plants that have died. Can you tell the cause and remedy? I fed them nitrate of soda about four weeks ago.—Subscriber, Crockett.

The root system is perfect and neither roots nor stem show injury or infection from insects or disease. If injured by too much nitrate of soda it should have been manifest earlier than four weeks subsequent to application. We cannot suggest cause of death.

Corn Worms

Several growers who have asked about corn worms are advised to sprinkle arsenate of lead powder on the silk very soon after it appears. If it rains repeat the powdering. A pinch between the fingers is usually sufficient for an ear. The moth lays eggs on the silk, the young worm hatching and going down the silk mass to the ear, where it feeds on the kernels.

Rhodes Grass

I have just read an article in the California Cultivator, written by M. E. Bemis, in which article he mentioned Rhodes grass. I have 160 acres of land which I think well adapted to that grass—clayey, slightly alkaline, breaks up nicely when dry but runs together when wet and bakes when drying. I succeeded in getting a good stand of Sudan on ten acres of it a few weeks ago by keeping the land wet until it got through the surface. It is doing well and I believe I can get Rhodes grass up in the same way, but before planting a large area to it would like to know a few things about it. Is the cured hay equal or nearly equal to alfalfa as stock feed, and does it sell for approximately the same price? Will it kill it to irrigate it and let the water stand on it for a few hours when temperature of atmosphere is 100 to 110 in the shade?

Mr. Bemis answers: "I do not believe that where conditions are favorable for alfalfa and Sudan that you would find Rhodes grass advisable. While Rhodes grass has made big yields for hay or for silage, it could not compare with Sudan where conditions are favorable for the latter. Where there is some alkali it is quite probable that the Rhodes grass might do better, especially for pasture. The

chief advantage of Rhodes grass would be, as I mentioned in the Cultivator article, under adverse conditions such as a shortage of water, slight alkalinity or where a more or less permanent pasture is desired. Rhodes grass is somewhat on the order of Bermuda grass and would not have to be reseeded. It is propagated by seeds and by rootstock runners, somewhat the same as Bermuda, but is very easily eradicated and does not become a pest. In the Southern states, as you know, this has become a very popular hay and pasture grass. Prof. J. J. Thornber, botanist of the Arizona college of agriculture, speaks very highly of Rhodes grass. His observations, however, I take it, have been more under range conditions than in irrigated sections. At the station farm at Mesa in the Salt River Valley it has been found somewhat difficult to secure a stand, and it has not given results which would indicate that for irrigated sections like the Salt River Valley it would compare with the Sudan or alfalfa. In feeding value it would probably rank about with timothy, although I do not have the analysis. Being a non-leguminous plant, it would of course be deficient in protein. My suggestion would be that you try only a few acres, as there is no possible way that you could determine beforehand whether it would be a success or not, and you would not want to make a failure of 160 acres. Your method of irrigating the Sudan grass might work with this. Our usual practice here (Salt River Valley, Arizona) is to get sufficient moisture in the ground to bring the seed up. I should be inclined to try, if possible, thoroughly saturating the soil, sowing the seed as soon as the land was dry enough, and then running a corrugated roller over it to prevent baking as much as possible. I believe in this way you would succeed in making a crop, but you know your soil and climatic conditions better than I do and it might be that you would find it advisable to keep it as wet as you did your Sudan grass."

Sulphured Fruit

Is there any method for drying and preserving fruit such as apples, peaches, pears, etc., without the use of sulphur?—Subscriber, Beaumont.

Yes, some fruit growers prefer for their own use unsulphured fruit and dry either in sun or evaporator. Unless the fruit is cut very green and consequently of low quality, it will darken. Fully ripened peaches show very dark, sometimes almost black shade, hence are not marketable, but, as noted, preferred for flavor by some. We who "eat with our eyes," however, have formed a liking for the sulphured fruit. It is vastly more attractive; it has fine flavor, and, so far as we have ever heard, is perfectly healthful. We recently had short communication from a subscriber who maintained that he could not eat the sulphured fruit. This is a matter of individual decision, but as a commercial proposition we think sulphur will be used pretty nearly as long as California grows fruit. We find it far preferable to take our sulphur this way rather than as in boyhood days, when we were forced to take it with cream of tartar and molasses. We know of no substitute for the sulphur. A slight benefit is received if the fruit is put into the evaporator or into the direct sun heat as quickly as possible after cutting. It must be borne in mind

that there will also be much greater loss from souring and spoiling from fruit on the trays, especially if a streak of damp weather sets in, if there has been no sulphur used. The time required for drying will be about twice as great as where sulphur is used. This can be overcome somewhat by cutting fruit in very small pieces.

Wilt of Tomatoes

Will you please tell what causes tomato vines to curl up and die? Is there any remedy for this disease?—Subscriber, Owensmouth.

Presumably this is the regular summer wilt. If so, there is no help for it. See this department in former Cultivators.

Stock Beets

What month is best to plant stock beets? How long are they in maturing? What is the average weight of the beets? How often should they be irrigated? What variety is best for hog feed? What is the experience of your readers in feeding them?—Subscriber, Lemoore.

If ground can be irrigated the seed should be sown before the first cold of winter. If well started before that they will grow through the winter. If sown before first rain soil should first be irrigated. The average time to maturity is about four months, some varieties longer. They should weigh ten pounds each. Imperial, Half Sugar Rose and Golden Tankard are some of the good varieties; there are others. Winter beets should need no irrigation. If planted in February irrigate once a month during summer. One subscriber says he raises hogs without other food. We would not.

Summer Blight

Tomato leaves are turning black over all the field. What can I do?—B. Iguchi, San Fernando.

This is summer wilt, evidently, for which no remedy has yet been found. Spraying is of no use. Soil is a storage place for the fungus and either new soil for at least one season should be found for the tomatoes or another crop grown for at least one year.

Worms and Wilt

One-half of our watermelons die. What is the cause and remedy therefore? Also, something eats under side of melons and cucumbers.—M. Kamada, San Fernando.

Melon wilt is no doubt your trouble and an early spray with Bordeaux mixture would control it, but it is now perhaps too late. The eaters of fruit are probably millipedes or "wire worms." Lift the melons out of place, spray soil with Bordeaux mixture and replace melons. One treatment usually is sufficient.

Pruning Tomatoes and Berries

Will you please tell us in your valuable paper how and when to prune tomato vines; also raspberries, blackberries and dewberries.—J. W. H., Anaheim.

The summer crop of tomatoes should not be pruned, as all shade is needed. Pruning of winter tomatoes is done to let the sun into the thick vines only. This should suggest how to prune. It may be done at any time. Berries are best pruned in August and practice varies with individuals, soils, climate and conditions. The aim is to get rid of the oldest growth. Small growers pinch terminal growths while soft, others use shears, some sickles. All this is to restrict growth and cause heavy branching.

Irrigators on the west side of the San Joaquin Valley are talking West San Joaquin district. The idea is to cover lands in Merced, Fresno and San Joaquin Counties.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Judgment Does Not Outlaw

Will a judgment outlaw? — Subscriber, Sisquoc.

The party in whose favor judgment is given may at any time within five years after the entry thereof have a writ of execution issued for its enforcement. After that time, by leave of the court by motion or by judgment for that purpose founded upon supplementary pleadings, the judgment may be enforced or carried into execution. There is otherwise no limit upon the time of enforcement of a judgment.

Note Lost

What is the proper procedure in case a note and mortgage on real estate, duly recorded, have been lost? —Subscriber, Long Beach.

In the action to foreclose the mortgage, it may be set forth that the original has been lost, but in any case the original record of such instrument or a certified copy thereof may be read in evidence with the like effect as the original instrument without further proof.

Road Right of Way

Some time ago I gave a party verbal permission to cross my land. I have a sign on the way which he travels marked "Private Road." This man has given permission to another to travel over this road without asking me. He claims that he has put in \$600 in improvement on the road and that it is his road and that I cannot prevent him from traveling it. He states that if I attempt to stop him he will get three men to appraise the land and sell it at public auction. How long would the law require that he travel over this land in order to acquire a right? There is another old road formerly used by miners, but long since abandoned, except for occasional travel. Can this be called an open road?—Subscriber, Hemet.

The party passing over the road, claiming openly and notoriously and adversely to the owner to have that

right, and also exercising acts of ownership over the road by way of improvement and giving permission to other parties to travel thereover, would undoubtedly be presumed after the expiration of five years to have acquired such right of way. In order for the owner to resist this right it would be necessary for him to bar the way or bring an action either in trespass or in nature of an action of ejectment to establish his right to the land. The mere sign "Private Road" would mean nothing in this particular case, because with two or three parties using it it can still be a private road. The claims with respect to the appraisal of the road are only partially correct. The political code provides that a private road may be opened, laid out or altered for the convenience of one or more residents or freeholders of any road district. In order so to do, it is necessary that such resident file his petition in writing with the board of supervisors, setting forth the general route of the road and name of the person or persons over whose land it is to run. This petition must be accompanied by a bond approved by the board of supervisors double the amount of the probable cost of viewing and laying out the road and in addition that the bondsman pay all costs in case the prayer is not granted. On filing this petition the board of supervisors, if they deem it advisable, may appoint three viewers, one of whom must be a surveyor, to survey the road and submit to the board an estimate of the cost thereof, including purchase of the right of way and their views of the necessity. The owner of the land shall be notified at the time they are to view it. The road viewers thereupon report to the board of supervisors the details with respect to the road, the probable cost of construction, estimate of damage to the owner of the land, the names of the land owners, both those consenting and those who do not consent, the amount of damage claimed, and also the feasibility and cost of another route than the one petitioned for. The board of supervisors, after filing the report, set the day for hearing, give notice to the non-consenting land owners of the day of hearing, and on the date set hear

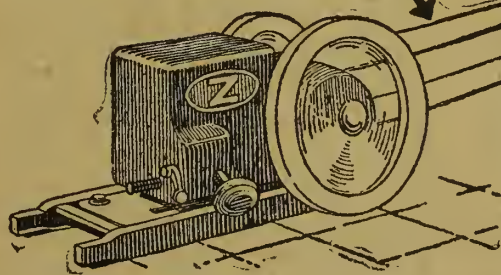
the evidence for or against the road and ascertain the amount of damage awarded to the non-consenting land owner, if the board deems it advisable to open the land. If the land owner does not accept the awarded damages within ten days it is to be deemed as rejected and the board of supervisors then may direct that condemnation proceedings be instituted in the superior court to condemn such right of way. In case the petition is not granted in any state of the proceedings the bondsmen of the petitioning party must pay to the person over whose land the road is sought the necessary costs and disbursements of such party in contesting the road. All such private roads, wherever practicable, must be located upon section or half-section lines. As to the old mining road, it is quite probable that it has long since been abandoned and your simplest proceeding there would probably be to fence it in.

AMERICAN SHIPPING

American seagoing ships of 1,000 gross tons or over registered for foreign trade or enrolled for the coasting trade, according to the returns of the bureau of navigation, department of commerce, on June 1, 1920, numbered 2,801 of 10,681,025 gross tons, of which 1,610 of 6,801,536 tons are owned by the government of the United States, represented by the United States shipping board and built with appropriations by congress. To these larger seagoing ships, smaller seagoing vessels, the Great Lakes fleets, and vessels on rivers and canals may be added, giving a total of approximately 27,900 vessels of 15,850,000 gross tons under the American flag. The precise figures for smaller vessels will not be available until the end of the fiscal year, June 30.

Practically all the weaving in Guatemala is done by Indians with home made wooden hand looms. In certain districts whole villages are devoted entirely to the weaving of native cloth, with one or more looms in every hut. Conversations with the principal importers tend to develop the opinion that the only reason the United States does not secure a fair proportion of this trade is because American manufacturers refuse to put up yarn in skeins of the size and weight desired by the Indians.

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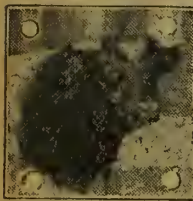
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I am offering four young bulls of serviceable age and choice eastern breeding at \$250.00 to \$275.00 each. These bulls are good enough to go into any herd and priced within the reach of all. Write at once for information.

Thos. Harrison

Santa Rosa, Cal.



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The value of the cattle in Iowa is greater than in any other state in the Union by far. It is stated that Texas has twice as many cattle as Iowa, but that the value of Iowa's cattle is double the value of the Texas cattle. Perhaps there is a reason.

There are over 5,000 breeders of purebred Shorthorns in Iowa, vastly more than of any other breed.

Think this over. It pays to grow Shorthorns.

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Carruthers' bulls will be found on many of the best ranges in the West—there is a reason.

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Visit the farm or write for prices.

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Boquhan Guinea Stamp, the great imported Young Broadhorns bull. Golden Goods Jr, sire of LITTLE SWEETHEART, Grand Champion International Show, Chicago, 1919.

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Tuberculosis in Dairy Cows: What It Costs

By Dr. J. P. Iverson



TUBERCULOSIS is caused by micro-organisms commonly known as bacillus or bacterium tuberculosis. There is no other disease known to man that affects more species of animals. Mammals, birds, reptiles and fishes are susceptible to the infection. While there are some species which present a higher resistance to the organism, there is none possessing an absolute immunity. Man is the most highly susceptible and statistics show that about one-seventh of the total human population die of tuberculosis. Of the domestic animals, the bovine is apparently the most susceptible, closely followed by swine. Fowls, horses, sheep and goats are also subject to the disease.

In its relation to man, the distribution depends to a great extent upon the close proximity of the inhabitants, while among the domestic animals the proportionate distribution seems to relate to the interest manifested in animal industry. There is not a nook or corner of the world which has not been visited by this infection.

Introduction of Infection

The infection gains entrance to the body through various channels. The lungs, which are so often infected, usually become so through the inhalation of dust contaminated with the organism. When the lungs are infected either in man or in animals they oftentimes cough up great numbers of the bacilli in the sputum, that when deposited on the ground, mixes with the dust, and other non-infected persons or animals breathing the contaminated dust in turn become infected. Another common avenue of entrance of the germ into the body is through the digestive tract, through the medium of infected foodstuffs. According to eminent authorities, the mucous membrane of the digestive tract of very young animals is extremely vulnerable. Infection also may gain entrance through the udder or genital organs, but these cases are rare. The unbroken skin resists the infection, but an abraded part will permit the entrance of the organism.

The tissues in the region infected, in their effort to resist the irritant produced by the bacilli, form small, characteristic nodular swellings, commonly known as tubercles. As the tubercle bacilli multiply and continue to throw out their irritant, the invaded tissues in turn continue to build up a wall of resistance, and in this manner the tubercle may grow to a considerable size. This battle continues until finally one or the other is conquered, and then the bacilli are either walled off and finally killed or they break through the impediment formed by the low resisting tissues and are carried by the lymph or bloodstream to various parts of the body where other tubercles are formed in a like manner. The toxins produced by large numbers of the bacilli are absorbed into the system and the vitality of the infected person or animal is gradually lowered, and death concludes the struggle.

With a knowledge of the dissemination of bacilli in the infected individual, it becomes evident that the organism may lodge in any part of the body. This fact should not be lost sight of when a post-mortem is performed on a carcass to determine the location of the lesions. The percentage of cases of tuberculosis presenting characteristic clinical symptoms is extremely low. This lack of diagnostic symptoms is often the reason for a serious spread of the disease in a herd before its presence is suspected. The usual slow and insidious method of development of the disease is one of its characteristic features, and for this reason its progress is often quite extensive before its presence can be detected without the aid of the specific diagnostic agent known as tuberculin.

Tuberculin

Tuberculin was prepared in 1890 by Robert Koch. He administered it to tuberculous patients with the hope that it possessed therapeutic value. The reactions obtained after its administration led scientific investiga-

tors to feel that a specific for tuberculosis had been discovered.

Later it was generally conceded that tuberculin possessed little therapeutic value, but the reactions following the administration of tuberculin into the tissues of tuberculous individuals gave to the world a diagnostic agent, which is regarded as one of the greatest achievements of modern science.

Tuberculin is prepared by cultivating the bacillus on specially prepared bouillon medium, grown usually for eight or ten weeks at body temperature. At the end of this period the medium is charged with the products produced by the growing culture. The culture is then exposed to moist heat and killed, and the whole product filtered. The filtrate is evaporated to the required concentration, which is usually one-tenth of the original volume and from this the diagnostic tuberculin is prepared.

A typical positive reaction after the application of the tuberculin test demonstrates to a high degree of certainty the presence of tuberculosis. The small number of cases in which the post-mortem does not reveal lesions may be attributed to the extreme sensitiveness of the reagent, which produces a typical reaction when the lesion is so small that it might escape attention in the course of a most careful autopsy. A small tubercle not larger than the head of a pin, located in the depths of a large organ or a remote lymph node, may produce as marked a reaction as a larger lesion. The intensity of the reaction is no indication of the extent of the tuberculous lesion, because quite frequently a minute lesion produces a pronounced reaction after the application of the tuberculin test.

Testing Various Animals

The application of the tuberculin test is not limited to any particular species of mammals or birds. It may be practically applied to any of them with equally accurate results when performed by one familiar with the technique.

Our efforts to eradicate tuberculosis have been devoted to cattle while, as a matter of fact, there are great numbers of swine and fowls also afflicted. To completely eradicate tuberculosis existing among domestic animals it is essential that we bear in mind that all are to some degree susceptible to the infection and all necessary precautions should be taken to prevent their exposure to the infection. Any species of mammal or fowl reacting to the tuberculin test should be at least isolated immediately from all others that are healthy and thereby avoid their becoming exposed. Some authorities contend the radical method of slaughtering all animals harboring the tubercle bacillus is the most effective method of eradicating the disease.

Economic Importance

The wide distribution of tuberculosis among our animal population causes serious losses annually. Just what these total in dollars and cents is hard to give in exact figures, since there is such a wide range in reliable statistics.

When the dairy herd becomes infected there eventually is a reduction in the milk supply. And again its presence in the herd may lead to cases of abortion and not uncommonly many cows finally die of the disease.

Purebred stock also come in for their share of the disaster when tuberculosis makes its appearance among them. The breeding of such stock represents the lifelong efforts of breeders for several generations. Through this continued scientific breeding such stock reaches a valuation of thousands of dollars and, since there are but few animals in such a herd, the loss of one by death from tuberculosis, or by interference of the reproductive organs from the same cause, diminishes or completely destroys the prospects for the future of those engaged in this field of animal husbandry.

Besides the losses in the herd, it is more than likely that young animals have been sold into other herds for breeding purposes, thereby giving a wider distribution of the disease. No doubt many ranchers have introduced

TESTIMONIALS

"Cows increased in one week 3 per cent in milk."

A. L. McCULLOCH, Alpaugh, Cal.

"I never saw hogs do so well or grow so fast as on this molasses ration."

C. H. HARTWIG, Yuba City, Cal.

"It has enabled me to keep my stock in better condition at less expense."

J. M. HENDERSON, JR., Sacramento, Cal.

"Have one calf that refuses to drink new milk—prefers skim milk with molasses. What do you know about that?"

R. HECKLEY, Santa Rosa, Cal.

"It has been a great advantage in getting the stock to clean up the roughage."

H. H. AMES, Chowchilla, Cal.

"One cow will turn down the choicest handfuls of alfalfa hay unless it has been 'Molassed'."

REDWOOD AYRSHIRE FARM, La Honda, Cal.

MOLASSES

cheaper than hay, but has same feeding value as corn or barley.

W. H. YOUNG COMPANY

58 Sutter Street

San Francisco, Cal.

this trouble into their herds by purchasing new animals with the thought of improving their stock, without first taking the necessary precautions to guard against tuberculosis.

The condemnation of carcasses upon slaughter by federal meat inspectors is quite considerable, amounting to 103,438 in 1919. Thousands of animals are killed by state and municipal authorities, as well as by private owners. The Year Book of the United States department of agriculture states that the percentage of tuberculosis among animals slaughtered at noninspected abattoirs is greater than that at establishments under federal inspection.

Bovine-Human

In 1882 Robert Koch discovered the bacillus tuberculosis. The discovery, together with its constant associations with tuberculosis of all the species, led to the conclusion that tuberculosis was transmissible from one species to the other. Later Koch advanced the theory that a difference existed between mammal and human tuberculosis. This led to world-wide scientific investigation along this line, resulting in the conclusion that they are so closely allied that it is impossible at this time to regard one as being separate and distinct from the other.

With all the available evidence it is safe to conclude that although, in the great majority of cases tuberculosis is transmitted from man to man, the dispensing with such articles of food as meat and milk from tuberculous animals for man, and especially so in the case of children, would indeed prove a rational sanitary measure. On the other hand, milk from non-tuberculous cows is recognized as one of the most wholesome and nutritious foods for young and old, and the liberal use of milk, as a food, is highly recommended.

Eradication.

Since tuberculosis has been proven by the foremost scientists of the country to be absolutely preventable, it behooves us to exclude from our premises and herds the germ or bacillus tuberculosis.

Many preventive measures are now in use, and while the method of application may vary according to surrounding conditions, all are based on the effort to prevent healthy and diseased animals from coming in contact with one another, as well as with infected foodstuffs and premises.

While government or state aid is a great help, the private owner is responsible for the admittance or non-admittance of tuberculous animals into his herd. As far as municipal measures are concerned, the establishment of meat and milk inspection is a great aid in the suppression of bovine tuberculosis. In the establishment of such a regulation, cattle owners and authorities in livestock sanitary matters are furnished with information regarding the existence of disease in the various herds and on those ranches from which butcher stock is obtained. The proper cooperation between livestock authorities and municipal meat and milk inspectors brings about the desired results. Hand in hand with municipal meat inspection we should have state supervision of slaughtering establishments and dairies. In this manner much information would come to light upon which it might be well for the state or the private citizen to act.

With regard to state measures, first of all the tuberculin test should be required for all animals introduced into the state, which is now being done in California. In this manner much can be accomplished by refusing to admit animals unless shown to be free from tuberculosis.

Each state should enact suitable laws to control and eradicate this disease. It should be borne in mind, however, that various local conditions may exist in one state that may not be found to exist in another. For this reason it appears that the enactment of laws for the suppression and eradication of tuberculosis must be worked out by each individual state in such a manner as to enable it to join with all other states in a united effort to insure livestock against the ravages of tuberculosis.

As long as tuberculosis is a matter which concerns the public expert advice and assistance should be given. In the distribution of free bulletins, pamphlets, circulars, etc., bearing upon the knowledge of the disease, a great

deal of good can be accomplished. Another avenue of prevention is through the supervision of breeding establishments, since purebreds are often the cause of a wide dissemination of the disease. This sort of danger would largely be done away with under sanitary supervision. The spread of the disease might be lessened further by having enacted prohibitory laws which would prevent unscrupulous dealings in animals affected with the disease. The federal government, through meat inspection in the abattoir, renders valuable assistance by detecting tuberculosis in animals and recording their place of origin. Such records also enable state authorities to avail themselves of the proper course to pursue in the prevention of a further spread of the disease and its eradication. Notwithstanding all that the municipal, state and federal measures contrive to accomplish, the chief factors in hastening the eradication of tuberculosis will be the proper hygienic measures carried out by the private owner.

A NEW WORLD RECORD FOR TOYON HOLSTEINS

Toyon Farm Association announces that Lady Aaggie Echo Hengerveld has completed her year's work with close to 1,200 pounds of butter from over 28,000 pounds of milk, thereby breaking the world's senior three year old milk and butter record. The previous butter record of 1,171.1 pounds was held by Jewel Pontiac Segis, and the previous milk record of 27,949.4 pounds was held by Eli Aaggie Fayne Johanna. Lady Aaggie's record has not yet been confirmed by the advanced registry office.

It is a matter of considerable satisfaction to Toyon Farm Association to have this world's record back in its herd. In 1917 its Ormsby Segis Marie held this record with 1,074.54 pounds of butter from 27,025.7 pounds of milk.

Lady Aaggie Echo Hengerveld unites the blood of great transmitting animals, being by a grandson of Aaggie Cornucopia Pauline Count and from a daughter of Sir Johanna Canary De Kol, the sire of Spring Brook Bess Burke 2d, the only cow in the world with three seven day records above 35 pounds in connection with three yearly records above 1,000 pounds of butter.

Bred along such high producing lines, it was only natural to expect a creditable performance from her, but to have her break a world's record under the conditions existing in this case shows her to be a remarkably persistent performer. Lady Aaggie was purchased several months after freshening from the A. E. Smith Company of Sumas, Washington. Unquestionably the long journey and the complete change of climate and environment had some effect on her total production. Any cow that can break a world's record under such conditions is a promising prospect for further and greater honors.

DECREASE IN CATTLE AND HOGS

A falling off in the numbers of cattle and hogs in the United States occurred during the first four months of this year, as compared with the like period last year, according to reports of special livestock reporters of the bureau of crop estimates, United States department of agriculture.

In the case of hogs the births during January, February, March and April were about ten per cent fewer than in the same months last year. The marketings have fallen off about 15 per cent; the farm slaughter was about the same in both seasons; but the deaths on farms this year are over 40 per cent heavier than last year to May 1. Taking into consideration both the births and the deaths (from all causes), it appears that there has been a relative reduction of about five per cent during the first four months of this year as compared with the trend during the first four months of last year.

The births of calves from January 1 to May 1 were about 22 per cent fewer this year than last year. The net disposition of cattle by marketings, farm slaughter and deaths was about nine per cent greater than last year; it appears that there has been a relative reduction of about six per cent in total number of cattle as compared with last year during the four months January 1 to May 1.



The De Laval Separator Works,
Poughkeepsie, New York.

The Factory Behind the

DE LAVAL MILKER

Wherever cows are milked, the name "De Laval" stands for quality and highest value to the user.

De Laval represents the utmost degree of service-to-user. The De Laval Company recognizes that when a sale is made, its obligation to the purchaser has just started.

These facts are important considerations when buying a mechanical milker.

The man who buys a De Laval Milker can ask for no stronger guarantee that it will give him the service claimed for it than the fact that it bears the name "De Laval."

The De Laval Milker is the only milker having an independent pulsation line, making possible alternating action at a fixed pulsation speed. It is uniform in action; and faster, more reliable, and more sanitary, than any other method of milking.

Write to nearest De Laval office for milker
Catalog, mentioning number of cows milked

DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

61 Beale Street

San Francisco, Cal.

Special Offer COUPON

The E. W. ROSS CO.,
511 Warder St.
Springfield, Ohio

Please send literature
describing Ross Ensilage
Cutters—also details of
your

Special Proposition

Name _____

Address _____

EVERY farmer who takes the trouble to clip out this coupon--or to write a card or letter this week--is going to get--A Special 30-day Proposition on the simple, powerful, clean-cutting

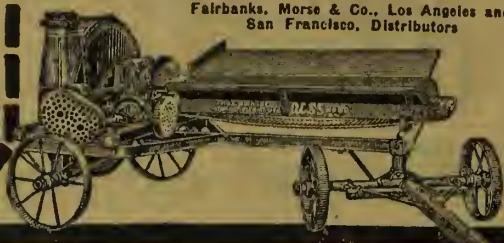
Ross Ensilage Cutter

Quick action is necessary. You must write at once if you want to take advantage of our Special Offer.

And, what is most important, you cannot afford to delay a moment if you want to be sure of getting the most reliable cutter built in time for use this fall.

Ask for full proof of Ross Superiority. No obligation on your part. Write today for the facts in full.

The E. W. Ross Company
511 Warder St., Springfield, Ohio
Fairbanks, Morse & Co., Los Angeles and
San Francisco, Distributors



Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
September 23, Allana Farms, Dixon.

Shorthorns
August 11, Butte City Ranch.

Duroc-Jerseys
July 29, Conejo Ranch, Newbury Park.
July 28, Winsor Ranch at Los Angeles.

Hampshires
July 30, Conejo Ranch, Newbury Park.

Poland Chinas
August 21, Merced County Poland China Breeders' Association, Merced.
September 27, Hugh C. Shinn, A. J. Elliott and Alex D. McCarty, Tulare.
October 6, Kings Co. Poland China Breeders Assoc., Hanford.

Shropshire Sheep
August 11, Butte City Ranch.

Berkshires
August 11, Butte City Ranch.
August 14, Southwestern Berkshire Congress, D. J. Bastanchury Ranch, La Habra.

J. I. Thompson, manager of the C. Harold Hopkins farm, Davis, has recently purchased from Senator B. F. Rush, Suisun, the five year old red Shorthorn cow, Village Pride 2d. This cow is a daughter of Villager Omega, one of the good sons of the noted sire, Villager, and is out of a Queen of Beauty dam.

J. H. Rosseter of San Francisco has just sold his great two year old thoroughbred colt, Inchape, to Samuel C. Hildreth for the record price of \$125,000. Inchape is a son of Friar Rock-Rose of Gold and was bred in this state. He has started twice this year and his showing has been such that he is regarded as one of the greatest prospects of recent years.

Harvey M. Berglund of Dixon has decided to postpone the sale of Durocs that he had planned to hold during the early part of September. The sale will not be held until early next winter. In the meantime Berglund is busy fitting a herd for the fall shows.

Hollow Hill Farm, Colton, whose livestock management is now in the hands of B. W. Shaper, is to be made headquarters for top Durocs. A recent acquisition is the ten months boar by Mammoth Sensation, dam by King of Orions. For further foundation blood Mr. Shaper is to have an Ace of Pathfinder litter and likewise a Winsor's Giant Orion litter. Here of course is one of the oldest established herds of Guernsey cattle on the Pacific Coast. The 12 year old cow Caroline of Chilmark 24812 has just now dropped her

tenth calf, eight of them being heifers. One of her bulls is reserved for herd service. She has a record of 15,156.2 pounds milk in one year and 722.2 pounds of butterfat.

It is quite probable that Shorthorn exhibitors at the fall shows will again have to reckon with last year's sensational champion, Little Sweetheart, shown by T. S. Glide, Davis. She now has a lusty calf at side and herdsman Robertson has done a remarkable job of carrying her through. A number of competent judges have pronounced her better than at the same time last year. Glide will have out a full herd which in several ways will be considerably stronger than his 1919 string.

H. M. Barngrover, Santa Clara, has just sold the yearling Hereford bull, Edgewood 5th, by Patrician 5th, dam, Catharine; also two choice two year old heifers, Miss Tempter 21st, by Beau Tempter, and Miss Perfect 11th, by Don Perfect, to T. L. Raney of Toll House. Mr. Raney has recently joined the Hereford ranks. This is the fourth son of Patrician 5th to go to head registered herds.

E. C. Stone, secretary of the American Hampshire Swine Record Association, Peoria, Illinois, advises us that he is sending his assistant, E. M. Harsch, on a 15 day tour of California in the interests of the association. Mr. Harsch comes highly recommended as a man of wide experience in publicity work in the Hampshire field. His plans are arranged so that he will be present on Hampshire day at Conejo Ranch, July 30, where he will be glad to meet swine breeders.

W. W. Van Pelt, secretary of the Southern California Fair at Riverside, is quite jubilant as to prospects for all lines of exhibits for the big 1920 show. Some of the more notable improvements in the livestock section at the fair grounds are the widening of the horse barns, together with a roof elevation, concrete floors, wide alleyway in center, and realignment of stalls. Fred Hall as superintendent of horses is to be credited with working out this improvement. Superintendent Langdon of the swine section has secured ample show room under cover and has a new lineup of the pens. In the cattle department Geo. W. Thomas has everything coming his way just right.

The Conejo Ranch two days' sale catalogue on its front cover presents a scene of rural contentment, comfort and beauty that is another way of extending the glad hand of welcome to all visitors on this red letter occasion. The strong pedigrees presented are backed up by the high quality of the animals offered. Under the head of "General Information" this catalogue presents a brief statement covering every feature in which the prospective buying public may be interested. Sale at Conejo Ranch, July 29 and 30.

F. L. Hall of Perris has a fine bunch of purebred Percheron colts at his Rosecrest Farm this year. Hall believes there is a future for the big drafter. Percherons, Shorthorns and Berkshires are favorites at Rosecrest. The usual fall fair exhibits from this ranch will be met with this year.

In building up his big type herd of Poland Chinas at Arlington Mr. H. Christianson has used three outstanding big boars, Long Smooth Jumbo, President's Model and Tourist Master, the last named boar being a fine son of the noted Iowa boar Black Master of Jumbo bloodlines. President's Model is a very excellent son of King's Big Bone Leader, of grand championship fame. A fine line of this boar's get are to be seen in this year's crop of pigs. He will be seen at the fairs if not sold before that date. He will be a hard one to beat.

Burt Wilkinson of Falfadale Farms, Perris, is found to be strictly on the job with the big Durocs again this year. The big boar Great Orion Sensation Jr. is likely to develop a reputation as sire of the up-to-date type of Durocs as the show season progresses. There are some out-and-out good prospects in the spring litters, and in numbers to surprise visitors at that. Wilkinson will be willing to let the public see this line of young stuff at its best about fair time for the reason that along about February there will be

O.U.R. Hampshire Swine Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

F. C. Fairbanks Ranch Hampshires

The Grand Champion Boar HARVEY'S CHOICE 53147
at head of our great herd of brood sows.

HARVEY'S CHOICE
Grand Champion Boar
at Los Angeles 1919

18 High Class Brood Sows in herd—young stock for sale.

A. E. Harvey, Manager

LOOKOUT CHEROKEE
Grand Champion at Liberty Fair
SIOUX QUEEN
Grand Champion at P.P.I.E.

Redlands, Cal.

Third Annual Sale BUTTE CITY RANCH

Owned by W. P. Dwyer and W. S. Guilford

Butte City, Cal., Wednesday, August 11, 1920

60 Registered Shorthorn Cattle
20 Registered Berkshire Hogs

105 Registered Shropshire Sheep
10 Shetland Ponies

25 of the Registered Shorthorns are consigned by O. L. Raper, Glenn, Cal.
owner of the well known sire, Crescent Dale

THE SHORTHORNS—Will include about 15 good cows with calves at foot, all of breeding age in calf to Victor Stamford, Herman the Great, or Crescent Dale. The offering includes daughters of Hallwood Flash, Vermillion, Sir Type, Crescent Dale, Victor Stamford, Cedarlawn's Best, Victor Stamp, Count Glory, Hallwood Villager, and others of substantial and popular breeding. There will also be a most attractive lot of heifers, both bred and open, and a limited number of good young bulls.

THE SHROPSHIRE—Butte City Ranch has become justly famous for the quality of its registered Shropshires, a flock developed largely from foundation of Broughton, Wardwell and Cavendish breeding, and the present offering will consist of ram and ewe lambs, and breeding ewes that both breeders and beginners can use profitably.

THE BERKSHIRES—This looks like a most favorable time to buy good registered Berkshires, for it is the general opinion among many hog growers who watch developments carefully that prices have about reached the low point and advances may be looked for shortly. A splendid offering of young gilts and a very few boars will be made in this sale. Representing largely the famous Butte City Princess family.

THE SHETLAND PONIES—Everyone in ponydom knows the good quality of Butte City Ranch Shetlands, and many visitors at this sale will have an opportunity to see for the first time the famous show stallion General Boggs, now heading the Butte City stud. The pony offering will consist of 10 head of good ones to delight the hearts of the kiddies.

Sale Catalog Is Free on Request. Write for a Copy

Management

California Breeders Sales and Pedigree Company

J. M. Henderson, Pres.; C. L. Hughes, Sales Manager.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. Geo. W. Bell, Tulare

lined up a bred sow sale from Falfadale stock that is going to be an extremely interesting affair. Falfadale show herds will make the entire circuit.

Manager C. R. Thomas reports all preliminary work for the big Los Angeles Livestock Show to be strictly up to the minute. Speaking of the splendid prospects for an out-and-out fine horse show this year Mr. Thomas remarks that it "takes money to make the mare go," and they have got the money to do it. A purse of over \$7,000 in special prize money is quite a windfall when added to the regular cash prizes of the show. In addition to the large displays of pedigreed livestock in all departments there will be numerous special attractions in the way of steeple chases, running and driving races, as well as the society horse show at night.

On August 14 the Southwestern Berkshire Congress will hold a sale of purebred registered Berkshire sows and gilts on the D. J. Bastanchury Ranch, La Habra. This sale should prove decidedly interesting to the farmers and orchardists of Southern California as the animals to be sold come from some of the state's best herds and will be bred to boars that have already proven sires of recognized ability. Berkshires are celebrated for their ability to make satisfactory gains on most any kind of feeds and their ability to dress out with a very small percentage of loss. During the past year the demand for Berkshires has been greater than for a number of years preceding, and this is accounted for in part by their reasonableness in price and their prolificacy. It is a conceded fact among hog raisers that the Berkshire sow is not only prolific but is a good mother and will raise a large percentage of her pigs. Ben S. Rhoades of Los Angeles will be the auctioneer.

Segis Johanna De Kol of Edelweiss, a registered Holstein cow owned by John Saxer, Modesto, has completed official records of 31.68 pounds butter from 616.5 pounds milk in seven days, and 123.5 pounds butter from 2,326.9 pounds milk in 30 days. This is an exceptionally well balanced record, showing that desirable production of over 600 pounds milk along with the 30 pound butter record. Another member of the Saxer herd, Moorland Colantha Rose, going on test three months after calving, made 22.5 pounds butter from 529.5 pounds milk in seven days, also a well balanced record. Many breeders will be interested to note that the 31 pound cow mentioned above, Segis Johanna De Kol of Edelweiss, is a daughter of King Pontiac Netherland Segis, the herd sire formerly owned by Ernest Otto McClure, thus giving this sire two daughters above 30 pounds butter in seven days.

Vina Pietertje Hengerveld De Kol, owned by E. E. Freeman, Modesto, has now been on test 200 days and has to her credit 19,100 pounds milk and 750 pounds butter. She is going strong at present and promises easily to add another big record to the nice list made in this herd during the past year.

It is of interest to note who won the Holstein-Friesian Association of America prize money in the prize lists for production of milk and butter fat during the past year. California ranks fourth in the list of states as regards the number of prize winners, being below New York, Wisconsin and Michigan in the order named, all of which states have several times the number of registered Holsteins that California has. The California breeders and amounts of prize money won by them are as follows: Bridgeford Holstein Co., Patterson, \$295; W. J. Higdon, Tulare, \$259.50; E. E. Freeman, Modesto, \$255.25; Toyon Farm Association, San Francisco, \$236.75; A. W. Morris & Sons, Woodland, \$231; J. S. Gibson Co., Williams, \$108; H. E. Vogel, Fresno, \$65.50; Los Angeles County Farm, Hondo, \$54.25; Alex Whaley, Tulare, \$43.50; M. H. Tichenor, Palo Alto, \$42.50; Burr Farm, Los Angeles, \$35.75; Mrs. Annie Donders, Fresno, \$33; Bock Bros., Pacheco, \$32.50; Lee-man & Kilgore, Ripon, \$26.75; Fred Hartsook, Lankershim, \$20; E. D. Barry, Jr., Daggett, \$20; J. W. Benoit,

Modesto, \$20.25; Palo Alto Stock Farm, Palo Alto, \$14; G. M. Brown, Los Angeles, \$13; R. F. Guerin, Visalia, \$12; Gotshall & Magruder, Ripon, \$12; H. E. Cornwell, Modesto, \$11. Six other breeders won prizes from \$10 down to \$5. Rather the most remarkable feature of the California list of winners is the showing made by E. E. Freeman, Modesto, who

ranks third in the list in amount of money won. His herd is only a very small one in comparison with the other principal prize winners, and the records made in the herd last year place it among the best in the country regardless of size.

V. F. Dolcini, Davis, reports that his junior yearling Duroc boar, Choice

Wonder 3d, is developing in splendid form and that he will be ready for the state fair. Choice Wonder 3d is a boar of great size and scale, smooth and extremely mellow. Dolcini is not making any claims, but he seems to feel that the boar that beats him will be the grand champion.

Other News Notes on Page 111.

Two-Day Auction

Famous Conejo Ranch

Registered Duroc-Jersey and Hampshire Herds

Thursday, July 29th---Duroc-Jersey Sale
Friday, July 30th---Hampshire Sale

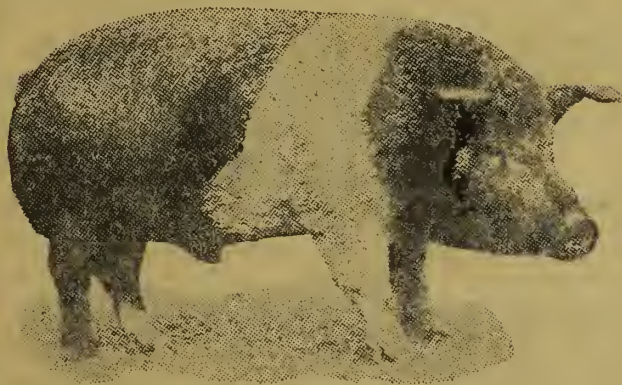
For years the Conejo Ranch has been recognized for the high-class pure bred hogs in both Duroc-Jersey and Hampshire breeds that it has raised. At every stock show for the past few years, Conejo animals have been prominent in the championship and first-prize classes. Every year the standard of the Conejo hogs has been raised, with the result that this ranch today is able to offer a remarkable big type, preferred by all breeders.

Be Sure to Attend

For the first time Conejo Ranch hogs will be offered at public sale. The offerings in both classes will be carefully selected bred gilts and a few tried sows—the kind that make valuable foundation stock for farmers, fancy breeders and pork producers. Make arrangements to take in this sale. Lunch will be served at the ranch.



Giant Wonder



Conejo Prince

Great Breeding

The bred sows and gilts in the offering are bred to our famous herd boars:

Duroc-Jersey

PATHFINDER'S PRICE by Pathfinder
GIANT WONDER by Giant Wonder
BIG MODEL by Oakdale Model

Hampshires

CONEJO PRINCE by Duke's Allen
LIBERTY by the Harvester Again

Autoists' Information

The ranch is located 40 miles northwest of Los Angeles on the Ventura State Highway near Newbury Park. It is situated about half way between Calabasas and Camarillo. On the Coast line go over Conejo grade and follow road signs. On the Inland route, go to San Fernando, cross over to the Ventura State Highway. If you come by train, notify our Los Angeles office regarding transportation.

Write at Once for an Illustrated Catalog.

CONEJO RANCH

Newbury Park

Ventura County

Los Angeles Address:

Janss Investment Company, Fourth Floor, Metropolitan Bldg.

Early to Market—Full Weight



51 per cent of all hogs marketed in the United States in 1918 were Duroc-Jerseys.

Duroc-Jersey hogs have proved themselves in championship shows as well as on the market.

Duroc-Jersey hogs raise large families and put on weight quickly. They are hardy, easy feeding animals that mature at an early age, and are uniformly red in color.

Write for our Free booklet "Duroc-Jersey Hogs Are Prolific and Profitable."

The National Duroc-Jersey Record Association. Dept. 130 Peoria, Ill.

The largest swine record association in the world—12,000 members

July 28

July 28

Winsor Ranch

California's Greatest

Duroc-Jersey Bred Sow Sale

Sale held at

Exposition Park—Los Angeles

July 28

Winsor Ranch

A-1 Duroc Ranch

Where one of the state's greatest herds of Duroc-Jerseys is maintained. For years our Durocs have proven profitable to farmer and breeder alike. Better place your order now for spring pigs as what we will be able to spare will go quickly. Remember, this is the home of the state's highest priced (\$1500) and most valuable Duroc-Jersey sow.

J. P. Walker, RFD 1, Box 40½, Visalia, Cal.

Craig's Duroc Ranch

Owensmouth
California

Home of the Aristocrats of the Breed

The big type junior yearling boar, Jack's Cherry Vic, at head of herd. Wanda by Great Wonder 1 Am is one of the great brood sows of the breed. Many others in same class. Herd to be represented at fairs. Strictly top quality young boars for the trade.

Address J. C. Craig, 601 City Mutual Life Bldg., Los Angeles

Sows and Gilts---GET ONE

Bred to farrow next two months. We are making an extremely low price on these to reduce our herd. At the price we won't keep them long. Write today. Quick, before they are all gone.

H. P. Slocum, Willows, Cal.

The Greatest Duroc Boar of His Age! Choice Wonder 3d

a winner at the 1919 Iowa State fair, sired by the great boar, Mahaska Wonder, and a litter mate to the first prize junior boar of Iowa, heads our herd. He is the largest, heaviest boned, best footed boar in the state and he is being mated to the sows that have made this herd famous for futurity winners. Get your order in early for his pigs. Prices are most moderate. Satisfaction guaranteed.

JUNE ACRES STOCK FARM

V. F. Dolcini, Davis, Cal.

THE VICTORY HERD—Holsteins and Duroc-Jerseys

Holsteins of known value, headed by Sir Plebe De Kel Segis Pontiac, a son of King Segis Pontiac Count, acknowledged one of the breed's greatest sires. A young bull from this herd is bound to prove a profitable investment.

HILLCREST FARM, H. E. Spiers, Mgr., Caruthers, Cal.
Duroc-Jersey Swine of Highest Quality

Oakmere Ranch

Great Top Boar Prospects by
The \$8000 Great Sensation 3rd

The greatest Sire on the Pacific Coast. Sow and boar pigs priced low for quick sale. Immured and guaranteed.

R. A. CHAPMAN, 413 Owl Block, San Diego, Cal.

Breeder of Duroc-Jersey and Poland China Hogs.

The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

A HEREFORD JOURNEY

Over the Fourth of July holidays it was my pleasure to accompany H. M. Barngrover, together with Wm. Briggs of Dixon, Alec McDonald of Davis and Mr. Raney of Toll House, all interested in Hereford cattle, to Mr. Barngrover's mountain ranch, Veramont Stock Farm, located in one of the prettiest mountain valleys of the Sierras, the Indian Valley of Plumas County.

We left Davis at eight o'clock Saturday morning and after a delightful trip over wonderfully smooth mountain roads and through the famed scenery of the Feather River country, found ourselves, before sundown, at Veramont Farm near Taylorville in Indian Valley. To all of us, accustomed to the heat and dryness of summer in the Sacramento and San Joaquin Valleys, the intense green of the mountain meadows, rank with the luxuriant growth of the native grasses, with aspen lined streams flowing through them, and skirted by the pine covered mountains of the Plumas forest, was indeed a revelation and a pleasure, and I dare say there was not one of us but, if he could, would have fain transplanted this scene to his own locality.

Veramont Farm consists of some 800 acres, something over 400 being of this rich meadow land in an arm of the Indian Valley. On these meadows the native grasses, alsike and white clover, supplemented with alfalfa and timothy, grow luxuriantly, and it is no wonder, with such feed in abundance, that local cattlemen claim that they can grow larger and better cattle here than elsewhere.

Mr. Barngrover's ranch is well stocked with a nicely selected herd of registered Hereford cattle. Under the guidance of Herdsman Harry Wilson we were conducted through the pastures and paddocks, and the various individuals topping the herd were pointed out to us. Mr. Barngrover has been using for several years a smooth, thickset bull, Patrician 5th, a grandson of Paragon 12th, and he has surely left his imprint on the herd. In addition to Patrician 5th, Mr. Barngrover is putting into service a two year old bull, Don Woodford, a son of Woodford 1st, a bull of great scale and wonderful quality for an animal of his size. His use will certainly increase the average size of the individuals in the herd. We were also shown some promising herd bull prospects, together with the animals in fitting for the fall shows.

After a pleasant half day looking over the ranch and cattle we made the return trip over the summit of the Sierras, through the Sierra Valley to Truckee, and home by way of Lake Tahoe, concluding an exceedingly pleasant and interesting three days jaunt.—H. H. Gable, Esparto.

THE BERKSHIRE AS A FARMER'S HOG

By Bruce S. Bennett

A buyer for one of the large Chicago commission firms remarked the other day that the "heavy lard hog" has seen his day. The reason ascribed was the many substitutes now on the market for lard. It would appear therefore that the hog to top the market should weigh from 200 to 225 pounds.

It is quite significant in view of the above to note the qualities of some Berkshire hogs killed in April. They had received no special attention and were the culls at one of the agricultural colleges in the Middle West. The killing reports on the five head read as follows:

Live Weight	Warm Dress	Cold Dress
Lbs.	Per Cent	Per Cent
225	86 2/3	84 4/9
194	89	86
154	89.90	87.6
250	86	84
185	83	81.6
Average	86.71	85

These dressing percentages are all the more striking in view of the fact that the hogs had been handled in the natural way with no attempt made to shrink them. They had been given a full feed in the morning and weighed soon after. This would appear rather conclusive proof that the Berkshire can be relied upon to dress out a high per cent of edible meat.

Therefore it is apparent why the Berkshire breeders claim that the Berkshire is a profitable farmer's hog. The sows are prolific and, what is of

greater importance, raise their pigs. The bacon is nicely striped with lean and the ham is solid and nicely marbled with only a small amount of fat. The Berkshire will at six to seven months reach 200 pounds and can be fattened on most any kind of feed.

VIEWS OF AN INNOCENT BY- STANDER

I saw an article in our paper, June 26, entitled "The City Movement," which interested me very much and prompted me to write.

It is only too true that the farmers, one by one, are giving up their farms and leaving for the cities. Can you blame them?

About six weeks ago my father had a two year old steer ready for market. The meat market offered \$35 only and said that was all they could pay, delivered. A neighbor boy bought the steer for \$37.50. After giving away the heart, liver, head, etc., and reserving the fat, he sold the meat at 17 cents straight and made a net profit of \$30.

The steer when dressed weighed little more than 400 pounds.

I am working in town and the cheapest of meat is not less than 35 cents per pound. How much excessive profits do the meat markets make? The city folks seem to think that the farmers are the only ones that are making anything and that they are getting rich. When they come out to work they expect the same wages they receive in town, board and room included.

Does it pay to raise grain (barley) at \$2.60 a hundredweight when labor is so unreasonably high?—\$2.60 now, threatening to drop even lower. Encouraging (?), isn't it?

The farmers almost have to mortgage their crops to pay the harvest hands. Where does the farmer come in?

I am not intending to "kick" the consumer—he has to face the H. C. L., which is indeed hard when there's a "middleman" between him and the producer. The farmer receives such a small sum for the cattle, hogs and other produce that it is a loss to him, while the consumer pays double and sometimes triple the price the farmer receives for the same article.—Reader.

IMMUNITY TO HOG CHOLERA LASTING

Immunity to hog cholera has been proved to be lasting. Pigs varying in ages from one to six weeks old were simultaneously inoculated and exposed to the disease during a period of from five to nine months. Without exception they were found to be immune to hog cholera.

No ill effects from the simultaneous inoculations were noted in the pigs and no difference was evidenced in the immunity of pigs from immune and nonimmune sows.

One week old pigs received ten c.c. of anti-hog cholera serum, together with one-half c.c. virus. Those ranging from three weeks or over received from 15 to 20 c.c. of serum and from one-half to three-fourths c.c. of virus.

In many cases when animals experimented with had attained weights exceeding 200 pounds immunity was tested by the injection of five c.c. of virus. No cholera resulted.

These experiments therefore prove that the simultaneous inoculation of young pigs is lasting and that immunity does not disappear at various stages of growth from weaning time until the animals have reached a weight of 50 to 60 pounds.—S. O'T.

CATTLE CREDITS

Cattlemen as well as sheepmen are hampered by the restriction of credit. Cattle loan companies have warned their borrowers to prepare to meet their obligations when due, and if this must be done there is only one way—to sell stock in excess of the normal numbers. That means the premature marketing of cows and calves which, with easier money, would be kept. The financial situation may have considerable to do with the numbers of cattle marketed before winter unless some relief is given to those who need credit.—National Stockman and Farmer.

California's land value is estimated to be \$3,875,000,000, and the population 3,575,000.

To Finance Wool Growers

The federal reserve board has restored confidence in the wool industry by suggesting a plan for financing the wool growers during the present emergency. By advance arrangement with the federal reserve board wool growers, bankers in the wool producing sections and Eastern wool markets, wool dealers, warehouse men, manufacturers and others interested in the wool trade held an all day session with the federal reserve board. The condition of the wool market caused by the recent cessation of purchases of raw wool was laid before the board and a full discussion was had of various plans for financing the industry until normal buying operations are resumed. Unlike most other crops, wool is marketed in the spring and early summer, and the marketing conditions prevailing during the past month have threatened great losses to wool growers, which might be disastrous. Such a condition, if it developed, might cause serious sacrifice of sheep on farm and range and result in reduced supplies of wool and mutton in future years. It was clearly shown that there was no disposition on the part of anyone to maintain artificial prices, but simply to make arrangements by which the temporary interruption of the wool market would be removed and normal marketing conditions restored.

The plan of action finally arrived at was adopted as a more simple and satisfactory way of dealing with the situation than the cotton loan plan of 1914 which had been suggested. At the termination of a conference between the board and a sub-committee consisting of bankers thoroughly familiar with the entire situation the

board authorized the following statement:

"A wool grower may ship his wool to one of the usual points of distribution, obtaining from the railroad a bill of lading for the shipment; the grower may then draw a draft against his bank for such an amount as may be agreed upon by the grower and the bank, secured by the bill of lading. The federal reserve act authorizes any member bank to accept a draft secured in this manner at the time of acceptance, provided that the draft matures in not more than six months from the time of acceptance. After acceptance such a draft bearing the endorsement of a member bank is eligible for rediscount or purchase by a federal reserve bank, provided that it has a maturity of not more than three months from the date of rediscount or purchase.

"It was suggested that the federal reserve board communicate with the federal reserve banks, pointing out that shipments of wool to points of distribution may properly be financed by acceptance in the above manner."

While the statement refers only to acceptances based on bills of lading, Governor Harding referred to the provisions of section 13 of the federal reserve act as to eligibility for discount of paper secured by warehouse receipts. At a later meeting of all interests concerned it was the unanimous opinion that the plan suggested above was practical and feasible and that no extraordinary difficulty would be encountered in the necessary financing to carry along the present season's wool clip until a normal buying market should reassert itself, which it was the firm belief of all would be within a very reasonable length of time.

Mules Needed on Southern Farms

"Good crops and high prices have brought wealth to the Southern farm in recent years," says D. W. Chittenden of the Missouri experiment station. "In consequence better grades of mules have been bought than formerly. The farmer is finding that the bigger, stronger mules, standing 15.3 hands and weighing from 1,200 to 1,250 pounds, will do his work enough better to pay him to buy that kind."

"But he isn't going to raise them. In the first place in some regions such as the coastal plain grass does not grow well. In other regions a very determined effort is made to keep out grass. The result is that in at least half, possibly two-thirds of the total area of Florida, Georgia, the Carolinas, Alabama and Mississippi pasture conditions do not exist.

"The South will not produce one-

tenth of its own work animals, in my opinion, so long as cotton and tobacco maintain their present high prices. Inasmuch as cash sales from an acre of tobacco in many instances exceed \$1,000 a year, and as such lands rent from \$150 to \$200 per acre per year it is hardly likely that any of it will go to pasture.

"Even the fertile and famous blue grass areas of Kentucky and Tennessee, which in the past have reared many magnificent horses, have yielded to the plow and been planted to tobacco and cotton, throwing all responsibility for a supply of work animals on Missouri, Kansas, Nebraska, Iowa and other horse and mule producing regions. The receipts of the St. Louis and Kansas City horse markets have been greater this year than ever before."

Hereford Breeders New Promotion Plan

A party of prominent Hereford breeders, who made a trip July 4 to the mountain ranch of H. M. Barngrover, were accompanied by Alec McDonald, who is in charge of the beef cattle herd maintained at the university farm, Davis. Now there is no denying the fact that the Hereford breeders of this state are very much alive. Indeed, they have a reputation for not overlooking any bets when there is a chance to extend the influence of their breed, but it remained for this party to put forth a new inducement to attract such a distinguished cattleman as McDonald to the fold of the Whitefaces. This canny Scotchman to date has successfully evaded any "entangling alliances," but there are those who "do say—" In full possession of the facts, the party set a trap for Alec by which they expect to kill two birds with one stone, or rather by which they expect to hasten the day when Alec signs up for life and at the same time becomes a Hereford owner. The daring Hereford owners have severally and jointly agreed to present Alec with one of the best Hereford heifers to be found in the state, if, on or before July 1, 1921, he has ceased to be a bachelor. Just now Alec is wavering between his love for single blessedness and Hereford cattle. No bets

are being placed as to who wins. In the meantime the Hereford breeders submit that no other breed association has adopted such progressive methods for extending their breed lines.

PIG CLUB WORK SPREADS

Six Duroc-Jersey sows were shipped into Cochise County, Arizona, two years ago to club members near Benson. The value to the community through the introduction of registered hogs is reflected through a letter from a Benson business man who writes the university agricultural extension service as follows:

"Kindly advise me by return mail price at which you can furnish a carload of sows similar to those shipped into the valley for pig club members."

The San Jose committee of cattle-men, after a long session with the executive and marketing committees of the California Cattlemen's Association in San Francisco, voted for the adoption of resolutions endorsing the association in urging an immediate renewal of the campaign to bring the association's membership to 100 per cent. It was agreed that two menacing factors in the beef market today were the slaughter of half fat cattle and diseased cattle.

Take Notice! Ye Big Type Poland Fanciers



We have 10 of these big yearling daughters of the old Grand Champion Superba safely bred for September and October litters to our big senior yearling boar Fortuna Bob, and these sows are for sale now. They will please and profit you. Act now.

W. H. ROUGH

Arlington, Cal.

The Buckland Herd of Poland Chinas

Breeding of distinction characterizes our herd. Careful personal attention to each individual insures a class of breeding stock which is one of the many reasons for our growing business. Your patronage is solicited.

A. Buckland & Son, R.F.D., Fresno, Cal.

BERMA RANCH

Size and quality predominate in our big type Poland Chinas. No better big type sows are found in the state. Buy Berma Poland Chinas and you buy wisely.

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Fresno, Cal.

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Home of King's Big Ben, where he is siring those early developing big type Poland Chinas that are ready for the market at 6 mo. They have size, bone, quality and are from the easy feeding families.

W. Bernstein

Hanford, Cal.

Castleview Ranch Berkshires

The Home of ACHIEVER the Boar and Enhancer, the Other Boar

A few choice boar pigs for sale sired by the above boars. A few choice bred sows for sale at reasonable prices.

Castleview Ranch, Santa Rosa, Cal.

Italian Vineyard Company

Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

BIG PUBLIC SALE OF BERKSHIRE SOWS AUGUST 14TH

Alex. Wilson, Supt., Guasti, Cal.

Bastanchury Better BERKSHIRES

LA HABRA, CAL.
E. N. WHITMORE, MGR.

Our junior yearling boar Baron Premier 157th is from the famous Gentry herd. There is no better breeding behind any boar than this young fellow has. He is a splendid individual too, smooth, large bone, good back, and with lots of size for his age.

See our reasonably priced animals for sale.



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Successful Dairy Meeting at Hanford



THE annual meeting of the California Dairy Council at Hanford July 14 and 15 proved to be one of the most successful dairy meetings held in this state in a long time. Nearly 2,000 interested dairymen, manufacturers and others were present. Secretary Greene had arranged a most excellent program, calculated to cover every phase of the dairy industry. Notwithstanding the fact that at the present time there is wide dissatisfaction over the state of af-

fairs facing the dairymen of California, there was slight indication of pessimism. As a matter of fact the attitude of the average progressive dairyman is one of determination to bring about a better situation largely through his own efforts. The dairymen realize that they can no longer expect to get by with old methods. Better bulls, better dairy practices, better marketing and a better understanding between all interested in the dairy business were stressed and made plain throughout the meeting.

C. L. Roadhouse, professor of dairy industry, University of California, had for his subject "Quality, the Greatest Factor in Increasing Consumption." Roadhouse declared that a wider use of milk and milk products was certain to develop as the consuming public came to a better appreciation of the importance of those products in the daily diet. He pointed out that while the future held the promise of a great demand for dairy products and it followed that the industry would get to a more stable basis, the dairy interests owe it to themselves and the public to produce those products on a quality basis. The public will then be willing to pay a fair price.

C. V. Castle, formerly with the University of California but now with the United States department of agriculture, spoke on the relation of production and consumption of dairy products to general agriculture.

E. F. Moran, attorney for the San Francisco Milk Dealers' Association, told the producers of some of the problems encountered in the city distribution of milk. Alfred McCann, assistant to the president of the National Dairy Council, told of the aims and purposes and accomplishments of the council. McCann urged the dairy interests to support both the state and national councils.

One of the most interesting addresses of the meeting came from Dr. Everett C. Beach, director of physical education for the Los Angeles city school department. Dr. Beach gave the results of the survey conducted some time ago among Los Angeles school children. He declared it was found that a large per cent of the children examined were not receiving milk in sufficient amounts. He further said that the lack of milk was not entirely confined to the children of the poorer sections. Dr. Ethel M. Waters, director of the bureau of child hygiene, California state board of health, further emphasized the place of milk in the diet.

Dr. Elwood Mead, professor of rural institutions, University of California, contributed an important address on "Planning Rural Development." Dr. Mead, who has been responsible for the success of the state land settlements, pointed out the part that dairying and other livestock activities must play in any permanent system of agriculture and made plain that the state, in the development of the Durham and Delhi colonies, recognized that fact and was encouraging in every way a wider use of livestock—and of good livestock.

The second day was featured by a big barbecue and an auction sale of bull calves. A Holstein calf donated to the dairy council by C. M. Blowers of Hanford brought \$200 from Denman and Hopkins of Sonoma. A calf from the A. B. Comfort herd was sold twice. The Sperry Flour Company paid \$250 for the youngster and then redonated him and he was sold again to the Shore Acres Dairy, San Leandro, for \$350. Wesley Clark of Hanford contributed a Holstein calf that was purchased by Denman and Hopkins for \$160.

One of the principal addresses of the second day was that of Dean H. E. Van Norman of the University farm school. Dean Van Norman discussed the present dairy situation and gave his opinions as to the probable future. He urged that dairymen improve their methods and put into practice the proven fact that better bred cattle can

and will make dairying more profitable. Van Norman pointed out that only through testing could one be sure of the cows that were really the profit makers. He also gave a demonstration of some of the more important points to keep in mind when selecting cattle for the dairy.

Dr. J. P. Iverson, chief of the animal industry division of the state board of agriculture, discussed the problem of bovine tuberculosis.

Other speakers were: Professor E. C. Voorhies of the college of agriculture; J. B. Lillard, state supervisor of agricultural instruction; Stanley B. Wilson, state board of education; J. R. Gallagher, Sonoma County farm bureau; Senator Silver of West Virginia, who represented the American Farm Bureau Federation, and Samuel H. Greene, secretary-manager of the California Dairy Council.

One of the most important steps taken at the meeting was the adoption of a resolution addressed to the board of regents of the University of California, asking that they make it possible for the university to secure at least two strong dairy experts for extension work. The dairy interests justly feel that the importance of their industry is sufficient to entitle them to the services of a strong corps of dairy experts.

The following men were elected to the board of directors: G. M. Brown, Los Angeles; Ed. H. Webster, El Centro; E. M. Dorman, Los Angeles; F. A. Robb, San Francisco; W. B. Hopkins, Petaluma; J. H. Guinn, Petaluma, and W. T. Wilson, Fresno.

The council is planning to hold similar meetings at various dairy centers throughout the state and it is probable that at least four meetings a year will be arranged for.

THE HOLSTEIN RECORD

The Holstein-Friesian cow Lady Aaggie Echo Hengerveld 323463 has broken the record for fat production in the senior three year class of the semi-official yearly division, by producing in 365 consecutive days 28,008 pounds milk containing 960.56 pounds fat. She freshened at the age of three years, seven months, 13 days. Her best seven days official production, made in the early part of the lactation period, is 684 pounds milk containing 25.49 pounds fat; while in 30 days she produced 2,894.2 pounds milk containing 97.268 pounds fat. During an official test, beginning 255 days from freshening, she produced in the division covering tests begun not less than 240 days from freshening 494.4 pounds milk containing 19.753 pounds fat. Her sire is Paul Aaggie Oakhurst 55387; her dam is Lady Echo Hengerveld De Kol 2d 159461. She was bred by Albert E. Smith, Sumas, Washington, and she is now owned by the Toyon Farm Association, San Francisco. In the senior three year class of the yearly division she displaces Jewel Pontiac Segis 229261, whose record for 365 days is 27,068.5 pounds milk containing 936.92 pounds fat. Computed on the 80 per cent basis, the equivalent butter claimed for Lady Aaggie Echo Hengerveld amounts to 1,200.7 pounds.

THE SILO

"The silo is a well know institution and is rapidly becoming popular with most Hoosier farmers, yet there are probably a few benighted individuals stuck here and there in the far corners of the state who are unfamiliar with its appearance and its virtues," suggests the Indiana Farmers Guide. "To such as these we commend the following description, written by a man in Colorado who styles himself Farmer Putnam:

"A silo is a hole, entirely surrounded by a wall, fur storin' cow feed. Sometimes the hole is in the ground; sometimes it is up in the air. To build a silo, first select a nice spot fur the hole, then build a wall outside of the hole, if you want to build up, or inside of the hole if you want a pit silo. Either kind is good, but you got to go about it different. If you can't put up a silo, put one down, but don't put it off.

"All kinds of material is good for silo buildin' exceptin' hot air. Good ones is made outen cement, concrete, cement staves, or slabs, holler tile, brick, stone, wooden staves, steel or two by fours. Most of the farmers has got the spot fur the hole picked out, but they hain't never begun to commence to build yet, fur some rea-

sons or others. Some hain't got the money, some cain't decide on the kind of silo, some sez it's too much work to haul the crop in and cut it up, some sez it makes the cows' teeth fall out, some sez it gives them holler horn and holler tail, some sez it makes the milk turn green, some sez the butter from the silage milk won't churn, some sez it makes steers scour, hawgs howl, and lambs limp. Anything to put off silo buildin'. I'm tellin' you folks better get busy and look into this silo business! It'll mean money fur farmers that wants to make beef, mutton or milk, and I know o some that feeds it to hawgs and lots of it is fed to hosses and mules. I wouldn't starve on it myself if I had to eat some good corn silage."

"The above sizes the situation up just about right. It is easier for some men to put things off than to get to work and do them. Procrastination has probably robbed Indiana farms of more silos than any other one thing. But now is the accepted time. As Putnam says, 'Better get busy.'"

HOLSTEINS POPULAR

The L. E. Prestage Holstein dispersion sale, held at his ranch near Porterville, June 24, was well attended and quite successful, but a number of local farmers were prevented from attending the sale on account of the rush in the harvest fields at this time, and many of the cows went for less than they are really worth.

Noticeable in the crowd were a number of men who only a few years ago failed to appreciate the difference between ordinary scrub cows and pure bred stock, but the good work being done by agricultural journals and farm bureaus is having its effect and farmers are gradually culling out the scrubs and breeding up their herds, whether of beef or dairy cattle.

Mr. Buttels of Wasco was a heavy buyer, Prince Coloma Segis, a two year old bull, going to head his herd at near \$1,500, and men who know stock speak highly of his merit. Mr. Buttels already has a good herd, and among other additions to it from the Prestage sale might be mentioned Butterfly Fairy, an especially good cow of proven worth, and Stratford Ruth Riverside, also a fine individual. These two represent an investment of about \$1,000.

A two year old bull, Segis Pontiac Butterfly De Kol, brought \$580, being added to the Sturgeon herd at Tulare. Another choice cow, Wayne Hengerveld Ornot, was taken by Joe Weisenberger of Poplar.

Jay Hayes; Mr. Kennon and others of the Porterville section selected choice individuals.

Mr. Prestage's son, E. L. Prestage, is keeping six of the best calves, two of them being daughters of Butterfly Fairy and Stratford Ruth Riverside.

FARM BUREAU FAT HOG SALES

Recent California farm bureau marketing sales of fat hogs have made very creditable showing in amounts received for San Joaquin Valley stock. The sale at Visalia on July 13 showed one lot of 68 hogs averaging 170 pounds commanding \$16.60; another lot of 79 averaging 181 pounds, \$17; one lot of only six hogs averaging 126 pounds netted \$15.75; two other lots sold for \$14.60 and \$12.45.

At the Tulare sale, same date, the high figure was for 200 pounders, which brought \$17.10, and the low figure for 300 pounders, \$13.95.

The Hanford sale on July 15 brought together 216 hogs. The highest price of the day was \$17.85 for 85 200 pounders. Another lot of 21 weighing 129 pounds netted \$17.75. One other lot of 56 hogs weighing 175 pounds brought \$17.25. The low price of the day was for a lot of 14 averaging 407 pounds, which brought \$15.

The Corcoran sale, July 16, resulted in 63 hogs averaging 186 pounds selling for \$17.70. Others in the same sale commanded from \$15.25 to \$16.70.

WEIGHT OF CREAM AND MILK

Milk with a fat content of two and one-half per cent at 68 degrees temperature weighs, when skimmed, 8.63 pounds per gallon. A ten per cent butter fat content of mixed milk and cream weighs 8.53 pounds. As a general rule, milk from three to five per cent butter fat weighs approximately 8.6 pounds per gallon.

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Cow Cleaning,
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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

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More is required of horses than ever before hence the need of more size, weight and power. Large geldings never were higher. Shire geldings usually top the market. Use Shires to raise larger and better horses.

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W. G. Lynch, Secretary American Shire Horse Association, Tonica, Illinois.

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have sold more than \$500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

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C. L. HUGHES, Sales Mor., Sacramento, Cal.

HAMPSHIRE SWINE

Pure Breds—Both Sexes

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OF EVERY DESCRIPTION
Bought, Sold and Rented

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205-7 N. Los Angeles St., Los Angeles

Hauck's Big Type Poland Chinas

Hauck's Timm Jones at head of herd. Brood sows are daughters and granddaughters of Cantrall's Ideal. Write for our attractive offer of big type gilts bred for September farrowing.

N. Hauck

Alton, Cal.

Livestock News Notes

Other Livestock News Notes on Pages 106 and 107.

One of the first big sales of the fall season will be that of the Butte City Ranch, Butte City. The sale will consist of 60 head of registered Short-horns, including a goodly number of cows and helpers as well as a few young bulls. Part of the cattle will come from the recently established herd of O. L. Raper, Glenn. It will be remembered that Raper was the buyer last year of the bull, Crescent Dale. There will also be offered 100 head of Shropshire sheep that are said to be of a very high order. As usual about 40 head of Berkshires will be included and 20 head of Shetland ponies. The owners of the Butte City Ranch, Messrs. Dwyer and Gullford, last year adopted the policy of disposing of most of their annual productions in an August sale. The first sale was one of the most largely attended in the state and plans are being made to accommodate even a greater crowd this year. The event will be held August 11 and will be managed by C. L. Hughes of the California Breeders' Sales and Pedigree Co. Cols. Rhoades and Bell will be the auctioneers.

Mrs. E. A. Hardy, manager of the Anchorage Farm, Orland, has received word from Sycamore Farms, Pennsylvania, that Anchorage Star 29th has been selected for the view herd of Berkshires now on the way to South America. Anchorage Star 29th is a daughter of Star Leader and was purchased by Sycamore Farm two years ago. Recent sales from Anchorage Farm include a gilt carrying the service of last year's champion, Natomas Baron Duke, to E. F. Batten, Hood River, Oregon, and one to the Oregon agricultural college.

Mills Orchard Co., Hamilton City, has announced arrangements with Charles M. Talmadge of Salem, Oregon, to take over the management of its large herd of Berkshires. Talmadge, who is a director of the American Berkshire Association, is one of the best known Berkshire men in the country. For a number of years he was the owner of Silver Birch Farms and a breeder of Berkshires and Jerseys. The announced arrangements are expected to have an important bearing on the Berkshire industry of this state.

Dan Beeman, Holstein breeder of Woodland, has the honor of making the first livestock entry for the coming state fair. This will be Beeman's first show, too, and he has entered his three year old bull, Dean Fayne Segis, the aged cow, Johanna Hengerveld Capunna, and four young things.

H. A. Johansen, who breeds Poland Chinas on his ranch near Fresno, writes that he expects to show his junior yearling boar, Victory Bob, a son of last year's champion, Giant Bob. On June 16 he weighed 476 pounds, measured 68 inches long and stood over 37 inches high. Johansen will also enter a futurity litter.

J. H. Cook, Poland China breeder, writes that he has recently secured a ranch near Chico and has moved his herd from his former location at Paradise. Cook says that he has plenty of alfalfa and plans to increase the size of his herd very materially during the next few months.

W. M. Bray, Klamath Falls, Oregon, will disperse his entire herd of high class registered Holsteins at public auction, state fair grounds, Sacramento, on Thursday, August 26. The owner is an extensive lumber operator and had intended to build an elaborate breeding establishment at Klamath Falls but is called upon to develop a large operation in lumber in the East and must therefore sell the herd. The herd is headed by a son of the great Canadian cow, Zarilda Clothilde 3d De Kol, who is the only cow in the world besides Tilly Alcartra that has ever produced over 33,000 pounds of milk in one year, her records being 33,153.6 pounds milk and 1,194.17 pounds butter in 365 days. The sire of the herd bull is Aaggle Cornucopia Newman, head of the famous Colony Farms herd in Canada, he being a son of the former world's record milk cow Margie

Newman. Practically all of the females in the sale are bred to this royally bred bull, and he himself, with some of his young daughters, will be sold. C. L. Hughes, sales manager of California Breeders Sales and Pedigree Company, Sacramento, who will manage the sale, has just returned from Klamath Falls and states that this herd contains an unusually high class lot of individuals, including a considerable number of granddaughters of Margie Newman, also granddaughters of King of the Pontiacs and other well known transmitting sires and dams. The herd contains 50 head, of which 47 are females, with official records up to over 31 pounds butter in seven days and out of dams with records up to over 32 pounds butter

FAIR DATES

Sonoma County Fair, Santa Rosa, August 25-29. Secretary J. Francis O'Connor.
Patterson Fair, Patterson, August 26-28. Secretary T. J. Moe.
California State Fair, Sacramento, September 4-12. Secretary Chas. W. Palne.
Tulare County Livestock and Agricultural Show, Tulare, September 14-18. Secretary John A. Rollins.
San Fernando Valley Fair and Market, Owensmouth, September 15-18. Secretary Chas. L. Schufeldt.
Kings County Fair, Hanford, September 21-25. Secretary Frank C. Russell.
Ventura County Fair, Ventura, September 22-25. Secretary L. P. Hathaway.
Glenn County Livestock and Agricultural Association, Orland, September 27-October 2. Secretary E. A. Kirk.
Fresno District Fair, Fresno, September 28-October 2. Secretary Walter C. Ficklin.
Los Angeles Livestock Show, Los Angeles, October 2-10. Secretary C. R. Thomas.
Siskiyou County Fair, Yreka, October 5-9. Secretary Claude R. Gillis.
Southern California Fair, Riverside, October 13-19. Secretary W. W. Van Pelt.
Western Royal Livestock Show, Spokane, Washington, November 1-5. Secretary Bert L. Hilborn.
Pacific International Livestock Show, Portland, Oregon, November 15-19.

in seven days. The herd has passed two federal tuberculin tests without a reactor, and every female of breeding age except one has a calf dropped this year in the sale.

The agricultural and livestock exhibit at the Southern California Fair, which will be held at Riverside, October 13 to 19, will be a distinctive feature again this year. A tent 102 by 300 feet will be used for an exclusive agricultural and horticultural display. There will be nothing else in this big tent. Every community in Riverside County will have a display this year, which means that double the space will be used this year in the exclusively Riverside County display. There will also be more than double this space used in county displays as seven counties outside of Riverside County have indicated their intention of displaying their products.

MINERAL MIXTURES FOR WORMS IN HOGS

While the following remedy for worms in swine is not the most effective that can be administered, it may be fed without danger of poisoning, and the division of animal industry of the state department of agriculture recommends its use where parasitic eggs are numerous and the swine cannot be moved conveniently to non-infested areas; in such cases a remedy of this kind will prove quite efficacious; Pulverized charcoal, five pounds; air slaked lime, five pounds; hardwood ashes, five pounds; common salt, two and one-half pounds; sulphur, two and one-half pounds; pulverized sulphate of iron, one-half pound. Mix thoroughly and deposit in a dry place where pigs or hogs may have access to it.

California Lima Bean Growers Association recently held its annual meeting, listened to reports and elected new directors. C. C. Perkins was reelected president and W. H. Stiles, secretary.

IT PAYS TO FEED CHOPPED HAY

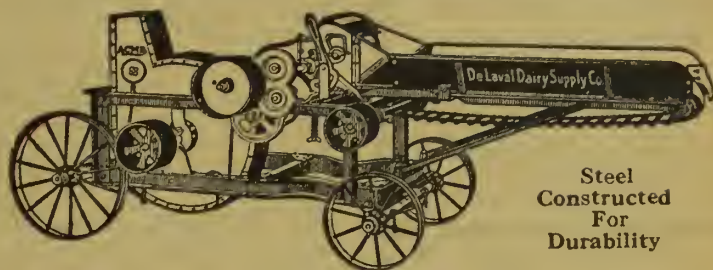
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HER 5 YEAR OLD SON

sired by a son of the former world's record milk cow, Margie Newman, will be sold at public auction

State Fair Grounds, Sacramento, Cal.

Thursday, August 26, 1920

This offering is a complete dispersal of the choice herd of 50 registered Holsteins owned by W. M. Bray, Klamath Falls, Oregon, consisting of 47 females and 3 bulls, including one 7 year old cow with a record of over 31 lbs. butter in 7 days as a 4 year old, one four year old cow, and the balance all three year olds, two year olds, yearlings and calves.

TYPE—PRODUCTION—GOOD HEALTH

The type of the herd is unusually good, and the blood lines of the first rank. The herd has passed two Federal tests without a reactor, and every female of breeding age in the herd, except one, has a calf in the sale, dropped this year.

WRITE FOR CATALOG TO SALE MANAGERS

California Breeders Sales and Pedigree Co.

J. M. Henderson, Pres. C. L. Hughes, Sales Manager,
Sacramento, California.

Auctioneer: Col. Ben A. Rhoades, Los Angeles.

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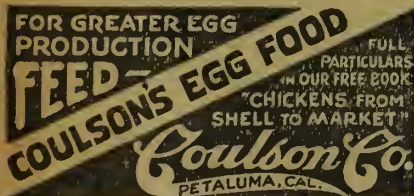
LACTEIN CONDENSED BUTTERMILK is also of great value to the hog raiser. In the feeding of sows, the LACTIC ACID is most important in keeping the health and cleanliness of the sow's intestines—and it helps the sow produce more milk for its young. It is very beneficial for feeding weanlings—produces that health and tonic — which produces rapid, firm growth.

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When writing advertisers, mention the Cultivator.

Summer Culling

By Jean A. Koethen



TWO kinds of culling are practiced by nearly all poultrymen. The first is what we might call general culling, which is practiced from the day the hatch leaves the egg till the old hens, worn out by long service, are sent to market. How many fall out by the way it would be hard to guess. Probably not a third of the pullets that enter on their laying career at six months or so live to a good old age. Some demonstrate their unfitness at the very start by delayed maturity; a few, even before maturity, exhibit defects of type or lack of vigor which make it evident they are better fitted for the pot than for the laying pen; others begin to lay promptly but lay undersized eggs for too long a period; still others make a fine start but stop to rest too soon. The careful poultryman notes the first symptom of unfitness and issues, without shrinking, the final mandate, "Off with her head!"

The second kind of culling is the special examination which is given in early summer to the pullets which have passed the general tests of winter and spring. If the pullets that began to lay promptly have been banded—that is, as many as could be detected—they will in most instances lead the class now. Early development is one of the best tests of vigor and fecundity.

"Long Distance" Laying

The heavy producer is the hen that lays longest before she molts. She must begin in good time and she must keep it up. As Professor Dougherty said at Van Nuys, a hen that has only 100 eggs to lay in a year can take her time about it. If she chooses to stop and molt in July there is nothing to hinder. She is not driven by her sense of much to be done and little time to do it in. The hen that has to lay 200 eggs by the end of her pullet year must delay the molt to do it, and so she lays on and on till November, perhaps till January. In nearly every heavy producing flock there are a few hens that have forgotten to molt at all in their first year. Ragged and disreputable looking, they concentrate on production. These are the hens to band for breeders, if breeders are wanted. If no breeding is done they may be profitable layers for several years.

The molting test is the most important and the easiest test in separating the layers from the boarders. Does a hen go into the molt in July? Off with her head. Does she begin to drop her feathers in August? To market with her. Has she stopped laying for any reason in June? The sooner she is eliminated the better.

Testing by Color

It is in May, June and July, when the hens are beginning to let up more or less in their laying, that the color test is applied. One poultryman I have met makes his first color test in May, a second in June and a third in July. Just as soon as the drop in production is noted the flock is gone over and the tint of shanks, vent, beak and earlobes noted. The hens which show decided yellow in shank and earlobe, pink around the vent, and a bright yellow color in the beak are the hens that have not been laying as heavily as they should. Just what is the grade of their deficiency is not so easily settled.

The theory is that a heavy layer lays the pigment out of her skin. The better the layer, the paler her color in early summer. At the university farm they are classified under three heads, pale, medium and yellow, but the boundary line between is one which it seems must be arbitrarily determined, that is, the hens with the palest shanks will be grouped together, as will those with the medium and those with the bright yellow shanks. Hens classified in this way at Davis showed a record of 160 eggs for the pale hens, 135 for the medium hens, and 129 for the bright yellow. There will in many cases be a difference in the degree of color in different portions of the body, and here is where the examiner must exercise discretion. He must, in fact, know his hens and consider every characteristic

before he can decide absolutely which hen to discard.

Here is the weakness of the color test. It is serviceable only for yellow legged birds and does not hold good for Leghorns with Minorca blood. Neither will it stand by itself as the molting test does. If a bird's shanks are yellow and her beak pale we must look farther before we decide. If shanks, beak, vent and earlobes are all pale, this may be sufficient proof of her fecundity. I use the word "may" deliberately because I doubt the efficacy of the color test by itself. There are too many "ifs" involved. Taken in connection with the molting test and the physical measurement test, it is a help and may serve to swing the balance one way or the other.

Pelvic Bones and Capacity

On the four Los Angeles County demonstration farms, whose records were very kindly loaned me by Mr. Eason, culling is done according to time of molting, the color test, and what is called "pelvic bone and body capacity." As these farms reached an average of 171.6 eggs per hen their methods are worth considering.

A great deal has been said about the pelvic bone test, and some have been inclined, perhaps, to give it greater weight than it deserved. It is based on the principle that the heavy layer must have pelvic bones so constructed that they permit ready passage of the egg. If they are stiff or curved in toward each other, they indicate either that the hen has not been a great layer or will not be—I am not quite sure which, for the two follow one another in a circle. If a pullet lays a great many eggs the pelvic bones become elastic and straightened from constant exercise, and the more elastic they become the more easily can she lay more eggs. Of this we may be sure, however, the greater the distance apart of the bones the more certain is it that the bird is laying heavily at the time of the examination, and it is fair to assume that a hen whose pelvic bones are stiff and close together in June, just at the close of the heavy producing period, cannot be a high producer. Thinness of pelvic bones at the beginning of the pullet year is held to be a reliable indication of the bird's capacity, since it is evident she is built on the right plan.

Distance from keel to pelvic bones is the backbone of the Hogan system of picking the layers. Whether it indicates anything more than abdominal capacity is a question which we need not discuss. Obviously, a great layer must have room for manufacturing eggs and for digesting the raw materials. A hen with a large abdomen has one qualification for production, whether she has any more or not. I noticed Professor Lloyd stressed the size of the abdomen rather than the distance from keel to pelvic bones. "In a heavy producer," he said, "the abdomen is large, full, soft and warm, and should just fit comfortably into the palm of the hand. If it is hard, it shows internal fat. If it is hard and puffy, as if filled with liquid, something is wrong."

Coordinate All Tests

The thoughtful poultryman will not be satisfied with any one of these tests. He will coordinate them all. The molting test is the surest. If a hen begins to molt in July, and if her shanks are a brighter yellow than is to be expected in a heavy layer, and if, on examination her abdomen is found to be hard and her pelvic bones stiff and not over two fingers' width apart, she may be condemned without probation. If in June a wilted comb indicates that any layer is no longer laying, and if examination reveals too yellow shanks, a too hard abdomen, and stiff pelvic bones, it is evident she is unprofitable.

Culling the commercial flock is a good deal like pruning a rose bush or thinning the peaches on your favorite tree—it is safer to let somebody else do it. The owner is almost sure to err on the side of leniency. If a hen is doubtful he gives her the benefit of the doubt.

The ideal is just in the opposite

direction. Sacrifice the innocent, if necessary, but let not a guilty hen escape. Sending a fair layer to market is not nearly so serious a matter as keeping a slacker in the flock. It is just because owners of good looking flocks have been too tender hearted to sacrifice a hen that might possibly pay her board that the average of production in California is 120 eggs or less instead of 150 eggs or over. It is better to own 500 producers than 1,500 loafers.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, June 28, 1920.

Report for week ending June 25:

The most prominent feature of the thirty-fourth week of the laying contest at Storrs is the fact that a pen of Rhode Island Reds owned by Pinecrest Orchards, Groton, Massachusetts, has relegated to second place a pen of Barred Rocks owned by Jules F. Francais, Westhampton Beach, Long Island. Jules F. Francais' Barred Rocks have been the leading pen in the contest for the past five weeks, but at no time during this period did they have a lead of more than 14 eggs on the pen of Reds from Groton.

With the oncoming of warm weather the removal of the male birds from the flock will be found advantageous in that it will not hinder egg production and the sterile eggs which the hens produce will keep much longer and will not deteriorate so quickly in transit.

The three best pens in each of the principal varieties are as follows:

Plymouth Rocks

Jules F. Francais (Barred), 1,428; Oneck Farm (Barred), 1,407; Merritt M. Clark (Barred), 1,333.

White Wyandottes

Mrs. R. W. Stevens, 1,216; Patrick F. Sullivan, 1,170; Applecrest Farm Co., 1,164.

Rhode Island Reds

Pinecrest Orchards, 1,441; Jacob E. Jansen, 1,275; Deer Brook Poultry Farm, 1,267.

White Leghorns

George Phillips, 1,360; Richard Allen, 1,351; E. A. Ballard, 1,342.

Miscellaneous

A. E. Hampton (Black Leghorns), 1,316; A. L. Anderson (R. I. Whites), 1,302; H. P. Cloyes (Buff Wyandottes), 1,190.

NATIONAL EGG LAYING CONTEST

By T. W. Noland

The 300 contest hens at the Missouri poultry experiment station at Mountain Grove laid 5,137 eggs during June, or an average of 17.12 eggs per bird. Pen S. C. White Leghorns, owned by Homer Collins, Ozark, Missouri, won the cup again by laying 119 eggs, making three months in succession that this pen has won the cup.

Ten Leading Pens for June

S. C. White Leghorns, Missouri, 119 eggs; S. C. White Leghorns, New Jersey, 118; S. C. Reds, Missouri, 117; S. C. White Leghorns, Missouri, 115; S. C. Anconas, Missouri, 112; R. C. Brown Leghorns, Kansas, 112; S. C. White Leghorns, England, 110; S. C. White Leghorns, Missouri, 108; S. C. Reds, Indiana, 106; S. C. Anconas, Missouri, 105; Barred Rocks, Missouri, 105; Black Minorcas, Missouri, 105.

Ten Leading Pens to Date

Barred Rocks, New York, 875 eggs; White Wyandottes, Missouri, 843; S. C. White Leghorns, England, 842; S. C. Reds, Missouri, 835; S. C. Reds, Alabama, 825; S. C. Reds, Missouri, 813; Barred Rocks, Canada, 805; Columbian Rocks, Missouri, 799; S. C. White Leghorns, Missouri, 780; S. C. White Leghorns, New Jersey, 779.

Five Leading Individuals to Date

S. C. Red, Missouri, 213 eggs; Barred Rock, New York, 204; S. C. White Leghorn, England, 194; S. C. Red, Alabama, 190; White Rock, Idaho, 188.

The Arizona Cattle Growers Association, together with committee from the State Wool Growers Association, has been urged by Arizona's governor not to oppose fair fees for leases on grazing land.

Poultry Queries

Conducted by J. A. Koethen

Soft Shells

Our Leghorn pullets hatched January 10 began laying at four months and eight days. Every morning I find one or two soft shelled eggs on the droppings board. They have oyster shell and gravel before them all the time, sprouted barley in the morning, wheat and kafir at night, dry mash in hoppers, all the green they will eat. Can you tell me how to keep them from laying these eggs?—Subscriber, Redlands.

When pullets begin laying so young they are quite likely to lay a good many soft shelled eggs. Your best course would be to put them on a conditioning mash consisting of 95 per cent bran and five per cent bone meal. This will check production and give them a chance to mature. If they had access to granite or limestone rock that might help, but maturity is the main thing.

Double Yolks

From 22 pullets we get some days four or five double yolked eggs. Can this be prevented? Which is the best commercial mash? They have quite different formulas. — Mrs. M., Redlands.

It may be your mash contains more yolk material than material for whites. In that case you could advantageously add bran. Most proprietary mashes are improved by adding from ten to 50 per cent of bran. I cannot say which one is best. They are all in general use and the formulas are changed so frequently that one does not know today what they may contain tomorrow. Some of our most successful poultrymen mix their own mashes according to the formulas sent out by the poultry division at Berkeley. A postal card will bring you the latest formulas recommended. Address: Poultry Division, College of Agriculture, Berkeley. A typical formula contains 6 quarts bran, 1 quart corn meal, 2 quarts ground barley, 1 quart alfalfa meal, 1 quart soy bean meal, 1 quart beef scrap, 1 pint coarse bone meal.

Diphtheritic Roup

A yellow scab forms in the throats of our chickens and chokes them. Can you tell me what to do?—Subscriber, Overton, Nevada.

This is diphtheritic roup, a disease very nearly akin to diphtheria in human beings, and sometimes called dipbtheria. Harrison and Streit advise burning out the membrane with hydrochloric acid (50 to 75 per cent) or silver-nitrate. Salmon recommends washing the throat with hydrogen peroxide, diluted one to three times with water. You would have to use this with a cotton swab. The following solution for a spray is recommended by Dr. Sanborn: Extract of witch-hazel, 4 tablespoons; liquid carbolic acid, 3 drops; water, 2 tablespoons. I should not spend very much time doctoring diphtheritic roup. Kill and bury deep, then clean up thoroughly, is the best prescription.

Barley for Turkeys

Can turkeys be raised successfully on barley stubble? Will the beards hurt them?—Subscriber, Gardena.

Barley stubble is all right. Some very successful turkey raisers feed barley as soon as the birds are ready for a general grain ration.

Intestinal Worms

My young pullets hatched in April and weighing only about two pounds are badly infested with intestinal

worms. In the bowels of a single fowl we find from one to three dozen worms about four inches long and the size of a broom straw. The chickens have an abundance of succulent greens daily, and I have fed ground pomegranate bark, but with no apparent effect. Can you suggest a sure remedy?—Subscriber, Los Angeles.

There seems to be nothing more certain than the remedy used at Davis and recommended by Dr. Beach, pathologist of the poultry division. This is tobacco dust, mixed with the dry mash in the proportion of one pound of dust to 50 pounds of mash. This is kept before the birds three weeks, and then no tobacco is given for three weeks. If the worms have not disappeared at the end of six weeks, the dose may be repeated. Dr. Beach claims that this will rid birds of worms even on infected ground, but it would certainly be safer to move them to clean ground.

Mischievous Chicks

My White Leghorn chicks six weeks old pick each other till they bleed. I think they would eat each other up if I did not remove the hurt one. I feed Suregrow mash, a buttermilk substitute, and wheat in the head.—Subscriber, Hemet.

It looks as if something were lacking in the ration. How much meat scrap does the mash contain? Chicks this age need a good deal of protein—20 per cent meat scrap is not too much. If you do not know just what the mash contains you might cook liver or some other cheap meat occasionally for the chicks or, better still, change to the laying mash. A mash that suits baby chicks is not strong enough for birds this age. Then I would feed some kind of corn, either cracked Indian corn or kafir or milo instead of the chick feed. Two grains are better than one. Wheat is all right but you need another grain with it. I know nothing about the buttermilk substitute you mention. It may contain protein and it may not. With a mash containing 20 per cent beef scrap, wheat and corn and plenty of green feed your birds ought to do well without buttermilk at this age. If you can get them out on range they will not have time to pick each other.

Emergency Solder

Hemet subscriber makes this suggestion for mending drinking pans in an emergency: Put in a little tar and hold close to the fire to melt. In a few minutes the hole is mended. This is useful when town is a long way off and the pan needed at once.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

The thirty-third week of the California farm bureau egg laying contest ends with D. B. Walls of Petaluma leading with a total of 1,496 eggs. B. F. Rose of Santa Cruz has taken second place from the Enterprise Poultry Ranch of Chino with a count of 1,436 against their 1,425. Hen number 16, belonging to D. B. Walls of Petaluma, is leading with a total of 199 eggs. Hen number 281, belonging to P. Pasquale of Inglewood, is a close second with 185 eggs.

For the past week the flock laid 1,354 eggs, a percentage of slightly over 57.

High pens for the week are: Bel-lows, 53 eggs; Stalling, 51; Gibson, 50; Gray, 49; Binney, 48; Gibson, 47; Peck, 46; Neef, 45; Schlink, 45; Brown, 45.

Poultrymen wishing to enter the next contest, which is scheduled to start October 1, should apply at an early date to the manager of the contest.



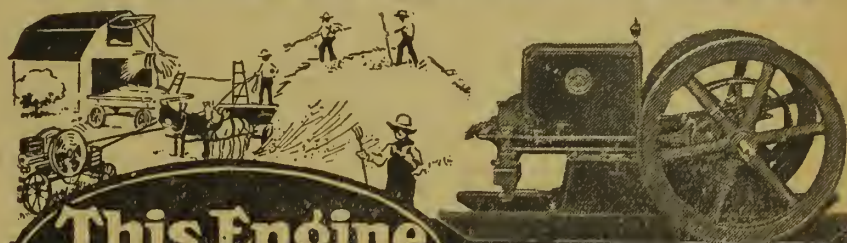
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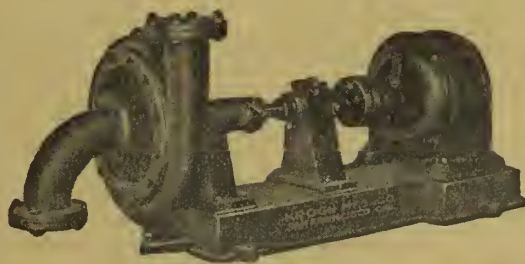
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White Leghorns — From the home of heavy layers. Buying carefully selected spring cockerels now is economy. We have them from our choicest pens. All breeders have orchard range. Fall chicks pay big. Free folder tells why. Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, California. Phone 492.

Santa Cruz Chicks are in demand. Our hatchery will run full blast this fall, supplying Leghorns, Minorcas, Anconas, Rocks, Reds and Orpingtons. Write for folder with price list. We also offer Hydes W. L. Cockerels from Pen 1, with trapnest record 236-284. B. W. Archibald, Soquel, Santa Cruz County, Calif.

Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. L. W. Clark, 615 Main Street, Petaluma, California.

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Barred Plymouth Rocks — "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Voddan, Los Gatos, California.

Breeding Stock—Pullets—yearling hens—\$2 to \$3. R. I. Reds, Barred Rocks, Black Minorcas, Brown Leghorns. Fall chicks also. Mission Hatchery, Campbell, California.

Buff Orpington, Buff Ducks, Bourbon Red Turkeys, White Guineas. The Ferris Ranch, S. Reservoir, Pomona, California.

White Minorca Baby Chicks and Hatching Eggs — Dark Cornish and Silver Campine eggs. Folder. Leech Poultry Yards Baldwin Park, California.

Baby Chicks from selected egg type S. C. White Leghorn hens. Tupman Poultry Farm, Box 7-C, Ceres, California.

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Agents Wanted to sell seeds, plants, bulbs, trees, garden supplies, etc. Liberal commission, large firm, part or full time, good opening for any one. Boys and girls also wanted to sell package seeds during vacation and after school. I send box of seeds free—you pay as sold. Give age, reference, and photo with letter. Send at once to Wm. Dart, Santa Rosa, California.

Men With Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write J. H. Yetter, 115 North Broadway, Los Angeles.

Wanted — Salesman who can sell high-grade, dependable nursery stock; exclusive territory; outfit furnished and cash advanced weekly. Commission basis. Address Albany Nurseries, Inc., Albany, Oregon.

PIGEONS

For Sale—White King Pigeons. Old mated breeding birds, \$3 a pair; unmated birds \$2 a pair. Paradise Valley Poultry Ranch, National City, California.

TREES

For Sale—Ten thousand one year Sour Seedlings six inches up to twenty. No better stock to be had. Price \$60.00 the thousand, also 500 ½ inch up Valencia one year, \$1.40 each, 300 pedigreed Eureka Lemon trees ¾ inch up, two years. The above is first class, fine roots. C. W. Whittle Citrus Nurseries, Home 303, Glendora, California.

For Sale—Placencia Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. Ketscher's Nursery, 1101 E. 4th St., Santa Ana, California. Phone 572WK.

50,000 Florida Sour Orange Seed Bed Trees; 100,000 California Sweet Seedling Seed Bed Trees; Valencia, Eureka Lemons; Supply Co. buds. SOUTHLAND NURSERIES, 1941 East Colorado St., Pasadena, Cal. Phone, Colorado 6352.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale. Inspection invited.

Fruit Trees—Berry Plants scarce, order now. Cash Nursery, Sebastopol.

CATTLE

Toyon Farm Association.

UNDER STATE AND FEDERAL

SUPERVISION.

Small foundation herds, Heifers and Bulls.

PERFECT IN HEALTH, RIGHT IN TYPE, PRODUCTION AND BREEDING.

Mills Bldg., San Francisco.

FARMS AT

BRENTWOOD AND LOS ALTOS

350 HEALTHY HOLSTEINS.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Registered Shorthorns—Good dual purpose animals raised without pampering. Young stock for sale. Prices reasonable. W. E. Rucker, Willits, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Vinerville, California. E. R. Stalder, owner.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Sunshine Farm Jerseys — No females for sale. Bulls from high testing cows for sale. E. E. Greenough, Merced.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

SEEDS AND PLANTS

Reliable Cabbage Seeds — I grow them. You want them. Let's get together. Write me for special trial offer on just what you will need. Isaac F. Tillinghast, 40 Podel Street, Santa Rosa, California.

Order Now Nursery Stock for fall planting. Sudan, Rhodes Grass, Honey Sorghum and Cane seeds. Box 501, Fowler, California.

Pumpkin Seed — Mixed Pumpkin Seed, good germination, 25¢ per lb. Aurora Seed Mill, Stockton, California.

WANTED

Experienced Poultry and Dairyman would like position on ranch as foreman. Married, 32, no children. First class references. 5 years in last position as manager of poultry and dairy ranch. Address: San Fernando, Route 1, Box 140.

Wanted—Immediately, experienced budgers and tiers. Address or phone Kirkman Nurseries, Fresno.

LIVE STOCK

BUTTE CITY RANCH

Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Next sale at Ranch, Wednesday, August 11, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Registered Shropshires — Five yearling bucks, 12 ewe and buck lambs for sale. C. J. L. Stonebraker, R 2, Chico, California.

Carruthers Farms—Live Oak, California. Shorthorn cattle and Berkshire swine of quality and select breeding.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

DUCKS

White Pekin Baby Ducks—White Pekin Duck Eggs for hatching. 152 East Spruce St., Inglewood.

Mammoth Muscovy Ducks, Ducklings and Hatching Eggs; heavy fowls and great layers. Woodland Hatchery, Woodland, California.

Mammoth White Pekin Ducklings, three weeks old, 30¢ each. A. Surtman, Petaluma.

RABBITS

New Zealand Reds—Young stock. Reasonable prices. Josephine Spencer, 1915 21st St., Sacramento.

BERKSHIRE

ANCHORAGE FARM BERKSHIRES

Orland, California.

BRED GILTS FOR SALE.

Your Choice of 10 Crack Boar Pigs from our early litters. We want you to see these pigs, their litter mates, and their dams. Have just shipped a choice boar pig to Kansas. These young boars are of correct blood lines, right in type, and well developed. Represent the close-up blood of Laurel's Champion, Star Leader, Ames Rival 118th and other excellent families. Write or come to the ranch. Yours for better Berkshires. Geo. A. Stingle, Lark Meadow Ranch, El Monte, California.

The Only Herd of English Berkshires in the west. Bigger, better, stronger litters. More pounds of meat for less feed. Weanling pig \$35. Satisfaction guaranteed or money refunded at once.

SANDERCOCK LAND COMPANY
703 Market St., San Francisco
IN CHARGE OF NATOMAS LAND SALES.

Grape Wild Farm—Berkshires, Guernseys. Big Type Berkshire Boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion. A. B. Humphrey, Prop., Escalon, California.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calaveras Orchards, Martinez, California.

Real Good Berkshires, cholera immune. Frank E. Anderson, Box 724, Sacramento, California.

DUROC-JERSEYS

DUROC-JERSEY SWINE

JUMBO SENSATION

Our new herd boar is one of the largest boars in the world for his age. We have some real buys in pure breds.

WHITLEY

TU-TOCK-A-NU-LA RANCH

Ventura Boulevard and Hazelton Ave. Mrs. R. E. Whitley, Mgr. Phone 160-J Van Nuys, Calif.

Borge's Big Duroc Jersey Hogs — Herd headed by California Golden Model 3rd. A few choice females of desirable breeding for sale at very low figures. I am offering for sale the tried boar Dos Palos Chief (an Orion Cherry King Jr. boar). Here is an opportunity to secure a tried sire at a very low figure. Satisfaction assured. Write at once. Jack Borge, Dos Palos, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

Bargains in Bred Sows and Gilts—Pathfinder and Great Wonder I Am blood. Derryfield Farm, Capitol National Bank Bldg., Sacramento, California.

L. & M. Ranch, Van Nuys — Buy our young boars by such sires as May Rose King, Winsor's Giant Orion, Orion's King Gano, Top Sensation 3rd.

SWEETWATER DUROCS

The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co. Address: R. K. Walker.

Durocs — Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. J. L. Stevenson, Van Nuys, California.

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. Hollow Hill Farm, B. W. Shaper, Manager, Colton.

December and March Duroc boars; Pathfinder breeding. Sterling Smith, Route 1, San Diego, California.

For the Best in Durocs write June Acres Stock Farm, Davis, California.

POLAND-CHINAS

I Would Sell My topnotcher boar by Kings Big Bone Leader; two bred sows by Long Smooth Jumbo; also spring pigs—everything big type stuff. H. Christanson, Arlington. Write me.

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. J. H. Crawshaw, Hanford, California.

The Big-Type Polands direct from Iowa. The best blood lines in the game by the Iowa man. J. L. Dunlap, Pomona, California.

The Grand Champion El Profito heads our big type Poland Chinas. Letters promptly answered. Viola L. Renwick, Santa Barbara, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. Ferguson & McKelz, Orland, California.

HOGS

My Victor Herd — Headed by Billiken Chester Whites. For quality and big litters. E. E. Fulton, Box 7, Fair Oaks, California.

GOATS

For Sale—One fine 2 yr. old seven-eighths Toggenburg doe, fresh in September, also 2 seven-eighths Toggenburg doe kids 4 months old. Sutter Rabbtry, Yuba City, California.

For Sale Cheap—Small bunch of goats, including nine does and five kids and two good bucks. Inquire of or write to O. C. Knox, Thermal, California.

Milk Goats—Selling out cheap. Cash Nursery, Sebastopol, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

FARM LANDS FOR SALE

For Sale—\$30,000 — In Visalia, one mile south from Court House, 30 acres of best soil all under cultivation and bearing, plenty of water, pumping plant, 5 inch pump and ditch water. 2 houses of 4 rooms each, and 2 barns. All farming implements can be bought with the place. 15 acres in Thompson Seedless, one and two year old vines; 6 acres in 6 year old french prunes; family orchard on each place consisting of pears, apples, apricots, peaches, walnuts and almonds. Two and one-half acres in alfalfa and balance in corn. Five thousand rooted Thompson Seedless, one thousand apricots, and two hundred peach trees, ready for planting next spring. This is all included in the price. This is certainly the best buy in Visalia. The place must be seen to appreciate its valuation. Address owner, Mrs. H. Gredsmakar, Visalia, California.

Orange Grove Bungalow Farm

21 Acres, Equipped, \$3500. On good road, near city; 19 acres under productive cultivation; borders lake; orange grove, grapefruit, peach trees, pears, plums, figs, grapes, guavas, all bearing; good 7-room bungalow, 3 piazzas; barn, poultry house, magnificent lawn, shrubbery, rose bushes, oak and magnolia shade; owner retiring, includes horse, wagon, machinery, tools at quick-action price \$3,500, easy terms. Details page 35 Strout's New Illustrated Catalog Semi-tropical Orange Groves and Farms. Copy free. STROUT FARM AGENCY, 503-EJ Wright Callendar Bldg., Los Angeles, California.

160 Acre Dairy Ranch well located six miles from county seat, ½ mile from highway. 50 acres alfalfa, 25 acres in corn and sorghum, balance pasture. 50 tons of hay. Fenced and cross fenced. One pumping plant. Good two story house, barn and other outbuildings. Family orchard and vineyard. 21 milk cows, 19 yearlings and two year old heifers, one exceptionally good bull, 7 pure bred Poland China brood sows, one pure bred Poland China boar, 23 head of 3 months old pure bred Poland China pigs, 10 head of work horses, one jack. All can be had for \$35,000, ¼ cash. Balance to suit purchaser. W. H. Nyswonger, R. C. Box 123, Hanford, California.

Ranch for Sale—160 acres ½ mile south of Yermo Division Point, S. L. R. R., formerly called Otis, San Bernardino County. About 30 acres in fence and has been cropped. House and well for domestic use. One deep well for irrigating, complete with 6 inch pump, 20 H.P. engine. Water lift about 20 ft. Watermelons, tobacco, cotton, milo do well here. Now is the time to see it while things are growing. Will sell on easy terms, and might exchange part for good property. Further particulars, address F. C. Brandt, Yermo, California.

240 Acres Near Parkfield, Monterey County, within 5 miles of oil rig now drilling; land on the same anticline rig is on. All fenced, no other improvements; 125 acres of good farming land. Price \$25 per acre, 1-3 cash, balance on easy terms. Can lease to oil Co. for a cash rental of \$1.00 per acre per year for 5 years by giving oil Co. option to buy at \$100.00 per acre. Many other stock and grain ranches to sell. Can get you oil leases from 10 acres up. C. P. Gould, 1032 Junipero Avenue, Long Beach, California.

For Sale — \$5,000. Five acres of sandy loam especially adapted for truck gardening near Porterville one-half mile west. Good six room house, bath, toilet and screen porch, large refrigerator and good cellar. Property fenced, all land under irrigation. Chicken runs and corrals, pumping plant, plenty of good water, fruit trees and some alfalfa and garage. Chickens and turkeys can be bought with the place. Can be made an ideal home and is a good buy. Address Owner, Post Office Box 207, Porterville, California.

For Sale—300 Acre Farm situated Santa Barbara County. All implements necessary for beans and hay, including bean thresher, Fordson tractor and plow, slide delivery rake. Large house and barn, chicken house, bunk house, implement shed and well equipped shop. Soft water, modern system. Apple trees, nuts and various fruits. Owner must sell, ill health. Easy terms. Address Alfred L. Friel, Lompoc, California.

FOR SALE AND EXCHANGE

10-20-40-60 and 80 acre ranches, rich, level, plenty water; proven grape (Thompson seedless), fig and alfalfa land. Price right, easy terms.

FOR SALE

Some of the finest dairies in the state. Chas. McNeely, Alpaugh, California.

ANTELOPE VALLEY

Buy cheap, good alfalfa and fruit land in the easy lift water district near improved dairy and hog ranches. \$50 to \$75 an acre, one-fifth cash. Send for circulars. The R. & L. Ranch, 611 Fay Bldg., Los Angeles.

Many Bargains in real estate for sale or exchange. Citrus and deciduous fruits, olive groves, and farm lands. I am a resident agent. Joe Sprouse, Fallbrook, California.

For Sale—3 miles from Visalia, 10 or 20 acres of best soil, improved. House of 5 rooms. A snap for a party looking for an ideal place. Address owner, J. C. Aulman, Visalia, California.

Canadian Wheat Land — 160 acres improved, 1½ miles from town of 4000. \$50 per acre. Terms. P. O. Box 98, Merced Falls, California.

If interested in securing farm lands or have same for sale write me. John G. Mae St. Helena, California.

Diversified Farming Lands—Natomas Irrigated, Sacramento County; terms. Alex. Murdock, 38 S. Sutter, Stockton.

For Sale — Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

Best Cheapest orchard berry and range lands. John F. Beckett, Arroyo Grande, California.

PERCHERON HORSES

For Sale—One pure blood registered Percheron stallion. Ten years old, will work. Guaranteed sure foot getter. Price reasonable. cash. Russell Brothers, Triunfo, California. Ventura County. 40 miles from Los Angeles on Ventura Highway.

MISCELLANEOUS

Notice to Cowboys, the Massachusetts Boot and Shoe factory located at Paige, California, near the foot of Mt. Whitney has just opened for business. Call and have your measure taken for either boots or the cowboy style or for shoes. Mens or ladies orders also filled for fancy bridles, saddles, harness, holsters, etc. Boots, shoes, etc. sent to the factory by parcel post will be repaired and returned at once. **THE MASSACHUSETTS BOOT AND SHOE FACTORY, Paige, California.**

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

For Sale—Two hundred ton of first class oat hay, cut and in the barn. 105 head of high grade Holsteins. Ten head of horses, six head of young mules, all broke. M. Varenco, two miles east of Redding, California.

Parties interested in Securing Plans for the best and cheapest Evaporator of large capacity on the market will find it to their interest to communicate with F. C. Chapman, Modesto, California.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Stains of All Kinds removed quickly. Large tube 30c coin. Dept. 72, Martineck Co., 405 Lexington Avenue, New York.

MACHINERY

BIG BARGAINS

1 Farquhar Bean Thresher, 26x34. Most satisfactory bean thresher built. List price \$1,990. Will sell at \$1,592 f. o. b. Fullerton. 1 H. C. complete sawing outfit with 6 h. p. gas engine, nearly new. Will sell at less than half price or \$350. Moline universal tractor with tractor attachment 2 gang plow, 24 inch cut, 2 gang disc plow, 24 inch cut. List \$1,860. Will close out at \$1,350. 8 Sanders single disc orchard plows, 24 inch disc. List \$125. Will close out at \$100 f. o. b.

WICKERSHEIM IMPLEMENT CO., Fullerton, California.

Ames Double Acting Pumps Complete, head, piping, rods, cylinder 20 inch and 30 inch capacity, nothing finer made, also Bulldozer single acting 20 inch stroke, 10 per cent off our regular price this month only. Write Demmitt Co., 120 N. Main, Los Angeles.

For Sale — Bean Tractor in first class condition. Used about forty days. Engine has just been overhauled. Price \$600.00 cash. J. N. Thille, Santa Paula, California.

For Sale Rebuilt Windmills Tanks, Pumps, Irrigating Pipe Brass Cylinders, Rods Guaranteed to do as much work as new ones at half the cost. Why pay more? For descriptive prices write Demmitt Co., 120 N. Main, Los Angeles.

I Have Cash Buyers for salable farms. Will deal with owners only. Give description and cash price. Morris M. Perkins, Columbia, Missouri.

For Sale—Case Tractor in good condition or will trade for Dodge car, equal value. L. E. Raftery, Owensmouth, California.

For Sale—Calf-way milking machine, De Laval separator, James Mills Orchards Corporation, Hamilton City, California.

GOVERNMENT LAND

300,000,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book THE HOMESEAKER which tells you where this land is and how to acquire it, or send \$2.00 for book direct. The Homeseaker, Dept. M, 336 S. Broadway, Los Angeles, California.

LATE POTATOES SHOULD BE PLANTED LAST OF JULY

Potatoes intended for planting should be left scattered out in a shed to develop sprouts. About three weeks is long enough in warm weather. They should not be in direct sunlight. Seed should be soaked in corrosive sublimate for 1½ hours before sprouting. A 1 to 1,000 solution is advised. Formaldehyde may be used if used before any sprouts appear. It may kill sprouts if these are developed. The corrosive is not so severe. Potatoes should be planted during the last of this month.

KEROSENE EMULSION

Kerosene emulsion will destroy lice and their eggs on animals.

Dissolve by boiling about one-quarter of a pound of common laundry soap in one gallon of soft water. When the soap has all dissolved and the solution is still hot, pour into it two gallons of kerosene and stir the mixture vigorously. Take one part of the resulting creamy emulsion and add eight to ten parts of soft warm water. This can be used as a spray or applied by means of a stiff fibered brush.

Dr. C. C. Woodbury has been chosen as head of the conservation bureau of raw products recently established by the National Cannery Association at Washington, D. C. Dr. Woodbury has been for some years director of Purdue University agricultural experiment station at Lafayette, Indiana.

Southern California seems to be getting along fairly well as to dogs for it is reported there will be \$100,000 worth of them exhibited at the Southern California Fair.

CONCERNING OUR COLLEGE OF AGRICULTURE

(Continued from Page 99.)

raising, or experimental work. Most of these courses are given in the other colleges at Berkeley. If the college of agriculture were moved to Davis it would be necessary not only to provide buildings, equipment and staff to teach the many agricultural courses but also to teach the more numerous elementary and so-called cultural courses now given at Berkeley.

The training of the lawyer and doctor has been mentioned and compared with that of the farmer. Both the law and medical student spend a far longer time in elementary preparation before contact with the courts or medical practice than does the agricultural student. In fact neither of the former begins to get into anything like "practical work" in his university course until about the time the agricultural student is graduating.

The actual knowledge gained is not always the most important part of a college course. The really big things are the broadening of the viewpoint, the making of character, the training of the mind, giving one the ability to think out problems and arrive at definite conclusions, to distinguish between pure theory and good practice, etc.

These things are gained, not only by the studies pursued, but by the associations with fellow students and instructors. A college community such as that at Berkeley is very cosmopolitan, and much is learned from the daily contact with its men and women gathered together from all walks of life and all parts of the globe.

Mr. Wing's argument, supported by Mr. Royce, seems to be something like this: Send the college of agriculture student up to the farm at Davis for four years with the cows. This is exactly what should not be done, especially with the boy raised on the farm. He should be gotten entirely away from that for some time, then he will begin to appreciate it and be all the more anxious to get back. Why are the boys leaving the farms and going into the cities? Because to the boy raised on the farm it has been mostly drudgery, long hours, little freedom, and too intimate contact with the soil. Get him away from this for a while, and on returning home during his vacations he will begin to sit up and take notice. Having gotten some of the theory and scientific facts from laboratory and textbooks, he will begin applying them in practice. He will begin to see the beauties of nature and to appreciate the satisfaction of having produced something. He will begin to see the advantages of the independent life of the farmer, and these new ideas will overcome his old conceptions of drudgery. As a consequence he will return to college with greater enthusiasm for his work and a greater desire to return to the farm.

Of course this may not apply to the city boy, but his lack of farm experience is his misfortune and not the farm boy's fault. The bulk of the farmers will always come from the country, and not the cities, and the city boy will have to make up his lack of farm experience during vacations or some other time. If compelled to go to a college of agriculture at Davis, many farm boys would balk, but going to the University of California at Berkeley has a great appeal.

The college of agriculture is much more than an animal industry school, and all branches must be provided for. Following Mr. Wing's and Mr. Royce's argument, the citrus or subtropical fruit raiser might equally well argue that the college should be moved to Southern California where the student could get four years' practical training in the orchards.

My understanding of the reasons for founding the Davis school differ from that offered by Mr. Royce. It was realized that there should be an agricultural school for boys who had not gone to high school, and who when they realized the need for further studies, felt they were then too old to go. Hence the Davis farm school was founded, not as a protest against the type of instruction given at Berkeley, but primarily for these older boys who lacked the requirements to take the college agricultural course. I understand the Davis student averages several years older than the high school student.

It is now possible to spend three

semesters, or one and a half years, at Davis, beginning with the first half of the junior year. It also should not be overlooked that the student can and should get practical work and experience on the farms during the long summer vacations.

We all recognize the big handicap the college is working under in the lack of adequate funds for salaries and equipment, but this state would exist regardless of where the college was located. What is not so generally realized is the critical lack of land for agriculture at Berkeley. The college formerly had the use of the plot of ground west of Hilgard Hall. This consisted of several acres and was used for experimental purposes, both research and teaching. However, this plot has been taken by the military department for a drill ground so that now the college has practically no land for such purposes.

The following solution of the problem has been offered and seems to be an excellent one: First, restore this plot of ground to the college of agriculture to be used as formerly. If the military department needs more land for drilling it can be obtained by moving the athletic fields off the campus to some location in West Berkeley. This will raise a howl from the athletic adherents, but many Eastern colleges have their athletic fields off the campus and the same could be done at Berkeley. Second, acquire more land in the Berkeley hills to be used by the animal industry and forestry departments. This would enable the students following these subjects to get more practical instruction. Third, acquire a tract of agricultural land of at least 100 acres within an hour's ride of the campus. This would be used for experimental work, teaching and demonstrations of agricultural practice. These three suggestions, if carried out, would enable the students to get more of the practical training now felt to be lacking, and still the desirable features of the college at Berkeley would be retained.

No doubt objection will be made on account of the expense, largely by those not interested in agriculture, but the expense would be small compared with the benefits, and it would be much less costly than moving the entire college to Davis. The agricultural interests of the state should concern themselves in their college and if necessary force the adoption of some measures to remedy the present not entirely satisfactory conditions.

INDUSTRIAL RESEARCH LABORATORIES IN AMERICA

A bulletin just issued by the National Research Council lists more than 300 laboratories maintained by industrial concerns in America, in which fundamental scientific research is carried on. Industrial research laboratories have increased notably in number and activity, both in America and Great Britain, since the beginning of the war, because of the lesson vividly taught by the war emergency. It was only by a swift development of scientific processes that the Allies and America were able to put themselves in a position first to withstand and then to win a victory over Germany's science backed armies and submarines. And it is only by a similar and further development that America and the Allies can win over Germany in the economic war after the war, now being silently but vigorously waged.

CANARY ISLAND ONIONS

Onion seed, though a minor crop from the standpoint of total agricultural production, is of considerable interest to Texas onion growers, and from 80 to 90 per cent of the crop is exported to the United States. According to growing and exporting interests the production this year will be small.

Plantings last October for the crop to be harvested this summer were 50 per cent smaller than a year previous, owing to lack of contracts and the high prices of seed onions. Exports to the United States and Porto Rico in 1919 amounted to 72,000 pounds. The weather has so far been favorable, and should it continue so until June the yield should be proportionally though not actually larger than last year.

Fowler, Fresno County, reports its first ripe Thompsons shipped on July 8.

WATER HYACINTH IN CALIFORNIA

Ethelbert Johnson of the California department of agriculture has been investigating the water hyacinth situation in the state and reports:

"An interesting sequel to an article in the March Monthly Bulletin was the information from a number of reliable sources that the water hyacinth already was established in California. Investigation by the California department of agriculture, with the assistance of Commissioner Fred P. Roulard, disclosed an infestation of the pest in the Centerville bottoms in Fresno County, located in such a situation that in a season of floods it could be readily carried into the Kings River.

"The question arises, How did it get there? The only plausible theory is that it was either deliberately planted in the slough by someone enamored with the oddity of the plant and the beauty of its bloom, or that it was introduced into an aquarium, its growth becoming so rank that it was thrown out into the slough as trash. This is exactly the manner in which it is supposed to have been introduced into Florida and the Gulf states, where millions of dollars have been spent in ineffectual attempts to eradicate it.

"Its present growth gives every indication that it is well adapted to conditions in the San Joaquin Valley. Our florists tell us that it has been introduced into water gardens in all parts of the state for the past 30 years. There may be no harm in having the plant in an aquarium where it cannot possibly gain access to our streams, but we have no assurance that someone ignorant of its dangers may not again allow it to get into some of our waterways and canals on which the irrigated districts of the state depend. It may be well to follow the advice of Florida's plant commissioner and secure the immediate destruction of all water hyacinths in California. This is a fearful pest and California can better afford to expend a million dollars now in eradicating the thing than to have to put up with it for all time. It eventually will ruin the great majority of beautiful lakes and similar places in California, to say nothing of the damage that it will do in irrigation and drainage canals and in navigable waterways."

Reports from Douglas, Nogales and other sections in the south part of Arizona indicate that the range pastures are drying up to some extent and stock are losing weight. Along the upper Gila, however, the range is good and particularly favorable inasmuch as stock have access to the bottom lands which are irrigated to some extent. Throughout most of the state stock and ranges are in good shape and cattle and sheep are doing well.

Arizona stockmen have made complaint that the stockmen of Utah have polluted one of the streams rising in Utah and flowing into what is known as the "Arizona Strip," being that portion of Arizona lying north of the Grand Canyon. This matter is being threshed out by the attorneys general of the two states, with the possibility that it may be taken to the United States supreme court for final decision.

Census enumerators have just returned from a four months' trip in the north part of Arizona, taking a census of the Indians on the Navajo reservation. They find the number of Indians on the reservation to be 7,844, which is more than twice as many as had been estimated for this reservation. The Navajo reservation covers an area of 1,500,000 acres.

Additional power is to be developed from the Salt River project in Arizona. This power will develop about 5,000 kilowatts and will be used largely for pumping purposes. It is hoped by this that 100,000 acres additional will be brought under irrigation.

What is said to be the highest price ever paid for raw desert land in acreage tracts has just been paid for a full section south of the Salt River Valley of Arizona. The price was \$70,000. This was state land.

Swine growers are pleased at top prices of \$17.10, secured by California Farm Bureau Marketing Association at its recent Tulare sale.

The Cultivator Patterns



BE SURE TO SEND SIZE

3286. Bathing Suit—Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-48 inches bust measure. A Medium size will require 3 3/4 yards of 36 inch material. Price 10 cents.

3297. Girls' Dress—Cut in 4 sizes: 8, 10, 12 and 14 years. A 10 year size will require 3 3/4 yards of 40 inch material. Price 10 cents.

2770. A Simple Apron—Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-48 inches bust measure. Size Medium requires 5 yards of 36 inch material. Price 10 cents.

3289. A Cool Dress—Cut in 5 sizes: 2, 4, 8, 8 and 10 years. A 6 year size will require 2 3/4 yards of 36 inch material. Price 10 cents.

3287. A Pretty Dress—Cut in 7 sizes: 34, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 2 3/4 yards of 27 inch material for the bodice and underwaist, and 5 1/2 yards for the skirt. The width of the skirt at its lower edge is 1 1/2 yard. Price 10 cents.

3300. Girls' Dress—Cut in 4 sizes: 8, 10, 12 and 14 years. A 10 year size will require 3 3/4 yards of 27 inch material for the bodice and 2 3/4 yards for the skirt. Price 10 cents.

3280. Ladies' House Dress—Cut in 7 sizes: 34, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 6 3/4 yards of 36 inch material. The skirt measures 1 1/2 yard at its lower edge. Price 10 cents.

2815. Child's Play Suit—Cut in 5 sizes: 2, 3, 4, 5 and 6 years. Size 4 requires 1 1/2 yards for the waist and 2 3/4 yards for the rompers, of 27 inch material. Price 10 cents.

CATALOGUE NOTICE

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PATTERN DEPARTMENT
California Cultivator
Los Angeles

Household Department

THE STUBBLE FIELD

By Anna Lenington Heath

The stubble field at daybreak
Wears many a dewy gem
Whose glowing, lustrous beauty
Would grace a diadem.

The stubble field at noontime
Is a field of the Cloth of Gold,
More royal far than France's mead
Where met two kings of old.

The stubble field at sunset
Glow in a wondrous light,
The glory of God lies on it
As softly comes the night.

CAST

THE auctioneer glanced at his book. "Number 29," he said, "black mare, aged, blind in near eye, otherwise sound."

The cold rain and the biting north-east wind did not add to the appearance of Number 29, as she stood, dejected, listless, with head drooping, in the center of the farmers and horse-dealers who were attending the sale of cast army horses. She looked as though she realized that her day had waned, and that the bright steel work, the soft well-greased leather, the snowy head rope and the shining curb were to be put aside for less noble trappings.

She had a curiously shaped white blaze, and I think it was that, added to the description of her blindness, which stirred my memory within me. I closed my eyes for a second and it all came back to me, the gun stuck in the mud, the men straining at the wheels, the shells bursting, the reek of high explosive, the two leaders lying dead on the road, and, above all, two gallant horses doing the work of four and pulling till you'd think their hearts would burst.

I stepped forward and, looking closer at the mare's neck, found what I had expected, a great scar. That settled it. I approached the auctioneer and asked permission to speak to the crowd for a few moments.

"Well," said he, "I'm supposed to do the talking here, you know."

"It won't do you any harm," I pleaded, "and it will give me a chance to pay off a big debt."

"Right," he said, smiling; "carry on."

"Gentlemen," I said, "about this time a year ago I was commanding a battery in France. It was during the bad days, and we were falling back with the Hun pressing hard upon us. My guns had been firing all the morning from a sunken road, when we got orders to limber up and get back to a rear position. We hadn't had a bad time till then, a few odd shells, but nothing that was meant especially for our benefit. And then, just as we were getting away, they spotted us, and a battery opened on us good and strong. By a mixture of good luck and great effort we'd got all the guns away but one, when a shell landed just in front of the leaders and knocked them both out with their driver; at the same time the gun was jerked off the road into a muddy ditch. Almost simultaneously another shell killed one of the wheelers, and there we were with one horse left to get the gun out of the ditch and along a road that was almost as bad as the ditch itself.

"It looked hopeless, and it was on the tip of my tongue to give orders to abandon the gun, when suddenly out of the blue there appeared on the bank above us a horse, looking unconcernedly down at us.

"In those days loose horses were straying all over the country, and I took this to be one from another battery which had come to us for company.

"I turned to one of the men. 'Catch that mare quick.'

"In a few minutes we had the harness off the dead wheeler and on the newcomer. Pull? Gentlemen, if you could have seen those two horses pull!

"We'd just got a move on the gun when another shell came and seemed to burst right on top of the strange mare. I heard a terrified squeal, and through the smoke I saw her stagger and with a mighty effort recover herself. I ran round and saw she'd been badly hit over the eye and had a great tearing gash in the neck. We never thought she could go on, but she pulled away just the same, with the blood

pouring off her, till finally we got the gun out and down the road to safety.

"I got knocked out a few minutes later, and from that day to this I've often wondered what had happened to the mare that had served us so gallantly. I know now. There she stands before you. I'd know her out of a thousand by the white blaze; and if there was a doubt there's her blind eye and the scar on her neck.

"That's all, gentlemen; but I'm going to ask the man who buys her to remember her story and to see that her last days are not too hard."

She fell at a good price to a splendid type of West Country farmer, and the auctioneer whispered to me, "I'm glad old Carey's got her. There's not a man in the county keeps his horses better."

"Old Carey" came up to me as we were moving off. "I had a son in France," he said, "in the gunners, too, but he hadn't the luck of the old mare"—he hesitated a moment and his old eyes looked steadily into mine—"for he'll never come back. The mare'll be all right, sir," he went on as he walked off, "easy work and full rations. I reckon she's earned them."—London Punch.

THE 300TH ANNIVERSARY OF AMERICA'S ORIGIN

THE year 1920 is doubly significant historically. It marks the 300th anniversary of two important events which led to the founding of the Republic of the United States of America. One is the signing of the Mayflower Compact and the landing of the Pilgrims, and the other is the meeting of the first American legislative assembly.

On November 11, 1620, in the cabin of the Mayflower, a tiny bark lying off the Massachusetts coast, a little band of liberty loving men from "Brittania" entered into what history has styled the Mayflower Compact. This agreement bound the 41 adult males in the ship's company into a civil body politic for the better ordering, preserving and furthering of their mutual ends. And it provided for such just and equal laws and offices as should be necessary for the general good of the colony.

Ten days later, so records Dr. Charles W. Eliot's inscription on the Pilgrim Memorial Monument at Provincetown, Massachusetts, "the Mayflower, carrying 102 passengers, men and women and children, cast anchor in this harbor 67 days from Plymouth, England.

"This body politic, established and maintained on this bleak and barren edge of a vast wilderness, a state without a king or a noble, a church without a bishop or a priest, a democratic commonwealth the members of which were straitly tied to all care of each other's good, and of the whole by every one.

"With long suffering devotion and sober resolution they illustrated for the first time in history the principles of civil and religious liberty and the practice of a genuine democracy."

Meantime, uninformed of the Pilgrims, fellow colonists of Captain John Smith had met at "James City" (Jamestown), Virginia, for the first American legislative assembly. On July 30, 1619, they had thus broken ground for the foundation of the present democratic form of government in the United States.

This year (in 1920) these events are being commemorated in the United States, in England and in Holland. In August, the origin of the Pilgrim movement will be celebrated in England. And early in September meetings will be held in Holland in memory of the Pilgrims' sojourn in that country.

In September a "second Mayflower" will set sail from Southampton, England, to follow to the American shore the path taken by the original Mayflower. (But this second Mayflower will be modern and therefore much more seaworthy than her smaller predecessor.)

This boat, carrying many prominent people of England, Holland and the United States, will anchor in Provincetown Harbor in late September. Its arrival will perhaps mark the crown-

80 Glasses From One Package

A package of Hires Household Extract—25c at your grocer's, a yeast cake and some sugar. These will make 40 pints or 80 glasses of the best rootbeer you ever tasted. And it's so easy to make.

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ing dramatic episode of the entire Tercentenary celebrations.

These events will not be celebrated in the United States by the citizens of Massachusetts and Virginia alone, nor solely by the New England and South Atlantic states. Communities throughout America are planning to take this opportunity to review the "foundation upon which the United States rests," and to reemphasize those principles which these ancestors established, and which their sons, their followers and their followers' sons have handed down to us through our form of representative government.

America is appropriating from national and state treasuries hundreds of thousands of dollars to be used in plans for the commemoration. One plan is to erect, overlooking Plymouth Harbor, a colossal statue of Massasoit, the Indian chief who befriended the Puritan pioneer. Another is to set the Plymouth Rock, which in 1741 was raised above the tide, in its original position.

Seventy American cities, including New York, Chicago and Boston, have started plans for their celebrations of the Tercentenary. The Sulgrave Institution and the American Mayflower Council have been active in coordinating these plans.

THIS WEEK'S PATTERNS

Cool clothes for hot days! First and foremost comes an exceedingly pretty bathing dress that follows the lines of the present mode, with long wrinkled basque, like waist, sailor collar, short sleeves and Roman border on skirt which adds much to the appearance. In dark green wool or jersey it will seem first cousin to the cool green waves.

3287 is good style, "chic," as the style writers would put it, with the flat front effect and wideness at the hip which give the characteristic lines of the present mode.

The girls' dress, 3297, shows the same lines and in addition an added touch of quaintness that reminds of grandmother's little girl days. Made of a checked gingham or voile with white bands around neck, sleeves, and skirt pockets, embroidered in matching or contrasting colors, it would be original and individual. A very effective handling would be a gray check or plaid with bands of white embroidered in persimmon.

The little middy and skirt opposite are the thing for beach or mountain or vacation days at home, and then again for fall school days. White Indian head or duck are the most popular materials for this blouse, and blue serge or black and white check are almost always used for the skirt. Both of same material in navy blue Devonshire or similar heavy cotton would save washing and be always attractive.

Another good apron and house dress are shown in 2770 and 3280.

Two irresistible frocks for small folks, one for sister, one for brother, are pictured in 3289 and 2815. Yesterday we saw at the beach a quaint little frock on a dainty little girl, made on a model similar to 3289. The body material was of soft buffy yellow with lavender band around skirt, collar, belt, cuffs, collar and pockets outlined with heavy black cotton in a conventional braiding design. A pretty black Milan straw hat completed the picture. The small boy's jumper-bloomer-overalls combination in 2815 is so different and quaint that if one hasn't a small boy of one's own, one is apt to look about among one's acquaintances for just the right small boy to fit the little suit one's fingers are itching to make.

SEVEN POINTS IN CLOTHING THRIFT

How can the family or the individual best maintain the clothing standard demanded without spending more money or time than should be allowed? Marion Weller of the home economics division of the Minnesota state university offers the following suggestions which, when applied, should enable the consumer to answer the question:

First: Make a budget, or a plan for spending.

Second: Take stock of clothing on hand, especially of all garments that are worth remaking, repairing or cleaning.

Third: Learn some of the textile

facts that will help to make the buying of new fabrics more interesting. Learn also some of the simple textile tests that may be used in the home.

Fourth: Buy the fabrics that are more or less standard in quality and color. You will get the most for your money.

Fifth: Watch for and take advantage of special and out of season sales.

Sixth: Learn the best ways of taking care of clothing. Prolonging the life of clothing is one of the best means of conserving.

Seventh: Knowing how to sew is one of the most effective means of reducing the expense of clothing. If the mother of a family cannot sew, then the daughters should by all means learn.

If all the clothing of a family has to be purchased ready made, not only is there the added expense of making, but the material will not wear as well fabrics purchased by the yard for much less money. Buy only the dress or suit that is simple in style and of good material. If kept in repair it can, with only slight alterations, be worn several years.

WORTH READING

An expressman has been moved to write to the editor of Dumb Animals some common sense and humane advice for shippers of livestock:

"All through the winter I witnessed examples of cruelty to animals in transit. In most cases the shippers themselves were guilty. Half size crates and baskets were too often used to confine full size animals. Sometimes the station employees pitied the little animals enough to take time from their own duties to exercise them. It is certain they always gave vent to their feelings.

"Again, rabbits, puppies, etc., were continually sent from the Far West to New England. During the cold spell in February scores of valuable pets died in express offices or in the cars. Cold or hunger were given as the reasons. Is it not surprising that human beings will send a crate of rabbits from Colorado to Maine and not provide sufficient food for the trip? And then they wonder why 'Bunny' died!

"The express company does not provide food en route. When an animal travels a long distance and arrives safely it is because some rough, kind hearted workman gives it food from his own dinner pail. More than once I have contributed, and I'm not the only one.

"If this article is printed, it may strike the right nerve along the spine of a careless, ignorant shipper."

VALUABLE BREED

The minister delivered a sermon of but ten minutes duration—a most unusual effort for him.

At the conclusion of his remarks he explained: "I regret to inform you, brethren, that my dog this morning playfully ate the portion of my sermon that I have not delivered. Let us pray."

After the services a man who was a member of another church shook the preacher's hand heartily and said:

"Doctor, I should like to know whether that dog of yours has any pups. If so, I want to get one to give to our minister."

BOTH ARRIVED

A group of workmen were talking politics, when one of the disputants turned to a friend who had remained silent during the argument.

"I ain't a-goin' to say," said Bill doggedly. "Me and Hennerly Green thrashed it out once before."

"What did you arrive at?" asked the first.

"Well," said Bill, "Hennerly, 'e arrived at the 'ospital an' I arrived at the police station."

TEAM WORK

It ain't the guns or armaments, nor the funds that they can pay, But the close cooperation that makes them win the day;

It ain't the individual nor the army as a whole,

But the everlasting teamwork of every bloomin' soul.—Kipling.

Smoked, painted ceilings may be cleaned by washing with cloths wrung out of warm water in which soda has been dissolved

PUNK THOUGH PUNCTUATED

Would-be Contrib.—I don't see why you reject my story. Isn't it punctuated properly?

Editor—Oh, yes; but as far as I can see there isn't any other point to it.

NO TRICK AT ALL

"I am in a great hurry," said the bald headed man as he climbed into the barber's. "Can you cut my hair if I leave my collar on?"

"Sure," replied the barber, as he glanced at the shiny dome; "even if you leave your hat on."

ONLY THING HIS OWN

"I wonder will Smithers always allude to his wife so lovingly as 'my own'?"

"Well, she is his own. Everything else in his home he is paying for on the installment plan." — Pearson's Weekly.

IN CASE OF A BUMP

"Why did you turn out for that truck? According to the traffic rules you had the right of way."

"Yes," answered Mr. Chuggins, patiently. "But the truck had the right of weight."

NOT ALWAYS

"Talk is cheap."

"Is it? Well, you just try expressing your opinion of him to a policeman when he pinches you for speeding."

NOT GRATUITOUS

The meat, mostly bone, was thrown on the scales.

"Look here," remonstrated the man, "you're giving me a big piece of bone."

"Oh, no, I ain't," said the butcher blandly. "Yer payin' for it."—Scotsman.

"Thank you" often pays big dividends.

HE HAD IT

in honor of a visit to his plant by the governor of an Eastern state an automobile manufacturer once had a complete car assembled in something like seven minutes. Some weeks after this feat was heralded in the daily papers the phone at the factory rang vigorously.

"Is it true that you assembled a car in seven minutes at your factory?" the voice asked.

"Yes," came the reply. "Why?"

"Oh, nothing," said the calm inquirer, "only I've got the car."

Gold is valuable only because it is scarce.



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THE COCA-COLA COMPANY
ATLANTA, GA.

Los Angeles Markets

Los Angeles, July 21, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 62 cents.

Dairy Exchange prices last week on extras:

July	14	15	16	17	19	20
20	62	62	62	62	62	62

CHEESE

Brokers' prices:

California flats, 29 per lb.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 51 per dozen; case count Prod. Exch. closing price, 49, per dozen; pullets, Produce Exchange closing price 48 per dozen; pewee pullets, 31.

Dairy Exchange prices last week on extras:

July	14	15	16	17	19	20
20	51	51	51	51	52	51

POULTRY

Price to producers: Hens, lt., 20; heavy, 26; colored, 30; broilers, 26@30; roasters, 38; old roosters, 14; fryers, 32; ducks, old, 17; ducklings, Pekin, 3½ up, 20; others, 17; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47; pigeons, doz., 1.00.

Belgian hares, live, 13@17; old, 9.

LIVESTOCK

Los Angeles, July 20 — Weighed and delivered off cars without food or water: Hogs (hard-grain, 125 to 175 lbs., 15.50; 175 to 225 lbs., 16.50).

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 8.00@8.50; medium, 7.50@8.00; bulls and stags, 6.00; calves, 125 to 150 lbs., 12.00; 175 to 225 lbs., 11.50.

Sheep—Ewes, 8.00@8.50; lambs, 11.50@12.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, July 20, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

New stock: Supplies liberal, market steady: Local Early and White Rose, No. 1's, mostly 2.25@2.40; No. 2's, 1.00@1.50 per lug, according to size; 100 lbs., sacked, No. 1's, 5.75@6.00.

Carlots: Supplies liberal, market unsettled, sales to jobbers, new stock White Rose No. 1, sk. mostly 5.50@5.75; lug, 2.00@2.25.

Onions: New stock, Coachella Valley: Supplies practically exhausted. Stockton District: Yellows 1.50@1.75 per 100 lbs., sacked.

Carlots: Demand and movement slow, market steady. Sales to jobbers—Coachella Valley: Supplies practically exhausted. Stockton: Sk. Yellows 1.35@1.50; sk. Reds 1.25 per cwt. Garlic: lb., 20@25.

VEGETABLES

These are the actual prices obtained July 20 by the Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 6@8; Limas 10@14 lb.

Beets: Doz., 35@45; sk., 2.25@2.50.

Cabbage: Supplies moderate, market strong, movement good, wide range in quality. Best mostly 3¼ per lb., per field crate, best 3.00@3.75.

Carlots: Supplies of shipping stock light. Demand good, movement limited, market steady, few sales. Carloads f. o. b. usual terms—Cannonball and Winningstadt, per ton, mixed cars, 50.00@55.00.

Carrots: Doz., 35@45; sk., 2.40@2.75.

Corn: Local, 75¢@1.25 per box.

Cucumbers: Market steady; local, best, lug, 60@80.

Egg Plant: Best, lb., 12@15.

Lettuce: Local, cr., best, 80@90.

Carlots: Supply moderate. Quality generally poor, market steady. Few sales mixed cars mostly 1.75 per crate.

Peas: Northern, lb., 9@12.

Spinach: Doz., 20@30; lb., 2.

Squash: Local summer, large lugs, 60@85.

Tomatoes: Imperial and Coachella, supplies liberal, market weak; cr., best, 1.60@1.90; local lugs, 1.50@2.25.

Turnips: Per dozen, 30@40; per sack, 1.00@1.25.

DECIDUOUS FRUITS

These are the actual prices obtained July 20 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apricots: Local lugs, 1.50@1.85.

Bananas: lb., 10¢@11.

Blackberries: Supplies light, per crate, mostly 4.50@5.00.

Cantaloupes: Market weak, supplies moderate, quality and condition wide range. Imperial Valley: Standards, best 3.75@4.25; ponies mostly 3.50@3.75. Local: Quality and condition good; standards 4.00@4.50.

Carlots (Direct wire from Phoenix, Arizona): 26 cars shipped. Temperature past 24 hours—Maximum 110, minimum 80, clear. Hauling light, decreasing. Quality and condition generally good, some poorly netted. All consigned.

Cherries: Supplies moderate, market firm; various varieties, best, mostly 18@25 per lb.

Grapes: Thompson Seedless, lb., 14@15; Malaga, 12@14.

Peaches: Local, best, lug, 1.50@2.25; Northern, lb., 8¢@10.

Plums: lb., 7¢@10.

Raspberries: Cr., 4.50@5.00.

Strawberries: Cr., 4.50@5.25.

Watermelons: Supplies liberal; lb., 2@3.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.25@2.75; special packed brands, 2.25@3.50.

Lemons: Market unsettled, wide range in prices. Local Stock: Packed, 3.50@4.00; loose, 1.25@2.25; lug, mostly 75.

Oranges: Supplies liberal, market firm. Valencias: packed special brands, 12¢@15.50@6.00; 150's and 170's 5.75@6.25. Local packed, second grade, 2.50@4.00. Packing house culls, 1.00@2.00 per lug.

HONEY

U. S. Bureau of Markets, July 16:

Moderate wire inquiry. Demand moderate, movement limited, market dull, little change in prices. Carloads f. o. b. usual terms: White Orange and White sage, 19@20; Light Amber Sage, 17½@18½; Light Amber Alfalfa, 16½@17½; Hawaiian Light Amber, 15½.

Hamilton & Menderson, July 7, in Western Honey Bee: Honey market disorganized, through the reduction in price at New York by a Los Angeles marketing association. Prices to producers: White orange and sage, 18½@19; light amber sage, 16@17; light amber alfalfa, 16. Comb honey—So little offered as not to make a market. Beeswax, 40.

A. I. Root Co., July 5, Western Honey Bee: The honey market is still quiet. The demands of Eastern markets are below normal. Prices paid to producers: Comb honey, approximately 6.50 per case of 24 sections. Very little offered. Extracted—Amber, 15; light amber, 16@17; water-white orange, 19. Beeswax — 38 cash, 40 in trade.

HAY

Alfalfa Growers of California under date of July 24 says: The market for alfalfa hay continued firm throughout the week at full previous prices. We sold all the hay listed this week at these current prices by our members for nearby deliveries and could have placed more. Buying is of a general and healthy character, steady and well distributed in respect to volume and number of buyers. There have not been so far this season many competitive offerings from other states at prices attractive to California buyers in comparison with those of California hay, and it looks more and more as if such offerings and shipments would be considerably lighter this year than usual.

We quote from the Chamber of Commerce, Phoenix, as follows: "The acreage of alfalfa in the Salt River Valley has been reduced very largely. Some three or four years ago we had approximately one-half of our acreage in alfalfa, at least 125,000 acres. While the acreage of land under cultivation has increased also during the past several years, the acreage of cotton has increased to such an extent that the alfalfa acreage has been reduced very largely and at the present time our acreage is believed to be about 40,000 acres, with about 15,000 acres of alfalfa and Bermuda and Johnson grass mixed, which is used almost wholly as pasture. The acreage of alfalfa throughout the state is about 118,000. This is a decrease of about 50,000 acres from last year."

During the week ending July 17 there were received 1,500 tons on the Los Angeles tracks of all grades (300 tons of which were left over), as compared with 1,700 tons for the week ending July 10.

Southern Prices:

Choice alfalfa	41.00
No. 1 dairy alfalfa	36.00
Standard dairy	33.00
Stock hay	29.00
Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:	
Tame Oats	25.00@27.00
Barley	18.00@24.00
Alfalfa	26.00@32.00
Barley straw	3.00@10.00

GRAIN AND FEEDS

A little weaker, especially in spot stuff. There is a great range in price because of vast difference in quality.

Grain Exchange prices bid July 20:

Corn: Yellow, bulk, 3.93½	
Barley: Carlots, 2.73½@2.81¼	
Kafir: Eastern No. 3, 2.70	
Milo: Eastern bulk, 2.83½	
Bran: Kansas, 57.00	

San Francisco Markets

San Francisco, July 20, 1920.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras	59½
Prime Firsts	58
July 13	14
15	16
17	19
20	59
59½	59½
19	57
56	57½
57½	57½

CHEESE

Dairy Exchange quotations:

Jack, full cream	23@26
Cal. Y. A.	35
Ore. Trips	31
Cal. Flats	34

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras	46½
Extra Pullets	47½
Undersized	35
July 13	14
15	16
17	19
20	57
57½	59
60½	60½
19	52½
52½	52½
52½	52

POULTRY

Wholesale prices are:

Leghorn, 21@23; large, 27@38; roosters young, 45@50; old, 18@20; broilers, 32@37; fryers, 37@38; turkeys, live, 37@40. Ducks: Indian Runner, 21@23; Pekin, 22@25. Squabs, 55@60; pigeons, doz., 2.35@2.50.

Belgian hares, live, 15@17; Jack rabbits, dozen, 1.50@3.50.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 9½@10; do, 1,200 to 1,400 lbs., 9@9½; do, second quality, 7@8; thin, 6@7. Bulls and stags: Good, 4@5; fair, 3@3½.

Cows and helpers: No. 1, 8@8½; second quality, 6@7; common to thin, 2@4.

Calves: Lightweight, 10½@11; medium, 9@10; heavy, 8@8½.

Lambs: Milk, 11@11½; yearlings, 8@8½.

Sheep: Wethers, 7@8; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 15½; 150 to 225 lbs., 16; 225 to 300 lbs., 15½; 300 to 400 lbs., 14½.

Virden Packing Company quotes prices on livestock, weighed and delivered off cars at its plant, South San Francisco, as follows:

Cattle: Good steers, 1,000 to 1,100 lbs., 10@10½; top steers, 1,100 to 1,200 lbs., 9@9½; top steers, 1,200 lbs. and over, market price; good cows and helpers, 8@8½; No. 2 cows and helpers, 6½@7; good fished, 100 to 150 lbs., 15½; 150 to 225 lbs., 16½; 225 to 300 lbs., 15½; over 300 lbs., 14½; under 100 lbs., 14½.

Calves: Light, 13@14.

Hogs: Top packer, hard and well finished, 100 to 150 lbs., 15; 150 to 225 lbs., 16; 225 to 300 lbs., 15; over 300 lbs., 14½; under 100 lbs., 13½.

Ewes: Full wool, 6½@7.

Wethers: Full wool, 7½@8.

Yearlings: 9@9½.

ONIONS

Onions: New reds, 50@75; whites, 75 cr.; green onions, 1.25@1.50. Garlic, new, 10@12½.

POTATOES

River, cwt., 4.50@5.00; fy., 5.25@5.50; Sweets, No. 1, 10@12 lb.; No. 2, 4@6.

VEGETABLES

Wholesale selling price:

Beans: Lb., String, 8@10; Wax, 2@5.

Cucumbers: So., 60@75; Bay, 1.75@2.25.

Corn: Sack, 2.00@5.00.

Eggplant: Livingston, 9@10; So., 5@8.

Okra: bx., 1.00@1.25.

Peppers: Bellis, 10@15 for large, 5@9 for small; Chilli, 6@8.

Peas: Lb., green, 5@7.

Radish, 7@9 doz. bunches.

Spinach: lb., 4@5.

Squash: Summer, Sacramento, lug, 75@1.00.

Tomatoes: No. 1, 1.00@1.25; No. 2, 50@60.

DECIDUOUS FRUITS

Apples: Red Astrachan, Los Angeles lug, 75¢@1.00; wrapped, bx., 2.25@2.75; Crab, 1.25@2.00.

Apricots: Imperial Valley, Los Angeles lugs, 4@8 per lb.; 1.00@1.50 per crate.

Bananas: lb., 8@10.

Blackberries: Dr., 35@50.

Cantaloupes: Ponies, 2.00@2.25; standards, 2.50@3.00; flats, 90¢@1.15 box.

Casabas: 1.75@2.25 cr.

Cherries: Black, 1.50@2.00 per drawer; blacks, 10@20 lb., according to quality; Royal Annes, lb., 10@15.

Currants: 50@65 dr.; 4.00@7.00 ch.

Figs: 1.00@1.25 for white and Brunswick per box of one layer; two layer, 1.50@2.00.

Gooseberries: lb., 5@7; English, 15@17½.

Loganberries: Red, dr., 50@65.

Peaches: Boxes, 75@150.

Pears: Madeline or Dearborn, lugs, 2.25@2.75; small, 1.00@1.25; Bartlett, No. 1, 3.50@4.00; No. 2, 2.00@2.25.

Pineapples: Doz., 3.00@4.25.

Plums: Apex, 1.50@1.75 per crate; Beauty, 1.50@1.75; Climax, 1.25@1.50; Clyman, 1.25@1.50.

Raspberries: dr., 60@75; cr., 1.50@1.75.

Strawberries: Large, 75¢@1.00; small, 50@65.

Watermelons: Imperial Valley, lb., 2@3.

Honey Dew: cr., 1.50@2.00.

CITRUS

Box: Lemons, standards, 2.50@5.50; lemons, 1.25@2.00; grapefruit, 2.00@2.50; navel oranges, 4.00@6.00.

BEANS AND PEAS

California Bean Growers Association, San Francisco, July 17.

There has been no material change in the California bean market since our last report to you and we do not look for much activity until the latter part of this month or, perhaps, next month. Quite a little interest has been shown recently in California Pinks but the White varieties have been very inactive. The trade here is offering for shipment at about the following prices:

Large Whites	6.15@6.30
Small Whites	5.75@6.10
Pinks	6.65@6.75
Cranberries	6.75@7.00
Black Eyes	8.25@8.50
Red Mexicans	8.25@8.50
Red Kidneys	14.00@14.50
Bayos	10.25@10.50

HOPS

1919 crop, 85¢@1.00 per lb. Prices to growers for 1920 crop, 65¢@80 per lb.

HONEY

Reported by Rafael & Wing in Western Honey Bee July 5:

Small lots of honey are beginning to arrive, and prices show a tendency to weaken. Buyers are buying only for their immediate needs. Reports from different Valley points tend to show that the crop will be much better than last season. Bees are in better condition than at the same time last year. Several large lots of Hawaiian honey are offered, with no takers.

Prices to producers as follows: White orange, 20; light amber orange, 18@18½; light amber alfalfa, 16@17; amber, 14@15. Beeswax, 40@42.

GRAIN

Wheat: 4.20@4.35.

Oats: Red feed, 3.00@3.15.

Corn: California Yellow, 3.65@3.75 per cental; California milo maize, 3.50@3.65.

Barley: No. 1 feed, 2.75@2.85.

HAY

Under date of July 17, A. W. Scott Co. says:

Receipts past week 2,346 tons. None is being taken into storage by consumers and purchases are only made for daily requirements. Prices in the country are much easier than last week as baling progresses. Service on the railroad is improved and with the light shipping seems to move about all that the demand

calls for. Reports from the country are to the effect that markets at various points are in the same dull condition as is the San Francisco market. Not much hay is as yet moving into country warehouses. Alfalfa has been quite a bit weaker and sales at from 1.00@2.00 per ton less than last week have been reported through the country districts. A little export hay has gone out from this port during the week, but trading has been on close margins and in small quantities to various ports of consumption.

We quote today wholesale prices in carload lots (old crop) as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.)

Old Hay: Prices nominal. Old straw nominal.

New Hay:

Wheat hay (light 5 wire bales) 26.00@28.00

Tame Oat hay 26.00@28.00

Wild Oat hay 20.00@22.00

Barley hay 20.00@23.00

Alfalfa hay first cutting 20.00@25.00

Alfalfa hay second cutting 24.00@28.00

Alfalfa Growers of California quote prices for Northern Districts:

No. 1 dairy alfalfa 33.00

Standard dairy 32.00

Stock hay 28.00

Citrus Markets

Los Angeles, July 21, 1920.

Valencias are still in keen demand and good prices are prevailing in every market.

Lemons are being shipped in larger quantities than for some months but price is still most unsatisfactory.

Shipments

transportation authority who has been representing the American Farm Bureau Federation at the recent interstate commerce advanced railroad rate hearing, present at the meeting.

Arrangements are being made for the grain and livestock interests to meet in separate sessions. The American Farm Bureau Federation is not directly engaged in marketing commodities, but its purpose is rather to assist through its various agencies all real farmers cooperative movements. It does stand unqualifiedly for the development of a unified marketing program serving the interests of American agriculture. If all elements are ready to give their best and receive the other parties' best, out of this conference will develop the greatest marketing movement yet accomplished. Any attempt at exploitation will be out of order. Hotel reservations may be made in advance through the American Farm Bureau Federation, 5 South Wabash Avenue, Chicago.

RAMBLES ALONG RICE PADDIES
(Continued from Page 91.)

From figures given to me by John P. Ryan, superintendent of the Glenn-Colusa district, I gathered the information that in the Glenn and Colusa irrigation district there are approximately 47,000 acres; in the Provident irrigation district (P. B. Cross), between 22,000 and 25,000 acres; in Glenn-Cordova-Princeton, 8,000 acres; in the Williams district, 9,500 acres; small independent districts along the river, 5,000 acres; District No. 108, 15,000 acres; Jacinto, Delevan-Compton-Zumwalt, and small districts, some of them irrigated from wells, enough to make a grand total of considerably over 100,000 acres. Thirty sacks to the acre, 100 pounds to the sack, six, possibly eight, cents a pound, gives an idea of the wealth being brought to California by these fields, many of them on lands formerly considered worthless.

In 1915 California produced 960,000 bags of rice; in 1916, 1,929,000; 1917, 2,520,000; 1918, 3,300,000; 1919, 3,500,000; this last from about 140,000 acres of land. As shown above the Glenn-Colusa section alone has this year planted nearly 100,000 acres. How much plantings in other sections will increase this I cannot say, but if the water continues, last year's production must be wonderfully increased.

FRUIT GROWERS TO HAVE SHIPPING POINT INSPECTION

At a meeting of deciduous fruit distributors with officials of the state department of agriculture on June 1 a committee of fruit men was appointed to act with F. W. Read, specialist in standardization, in formulating a plan of action for the present season. At a meeting of the committee it was agreed that the principal shippers of deciduous fruits would underwrite the plan to the extent of fifteen to twenty thousand dollars to start the work. The federal bureau of markets has consented to assist in paying the salary of an assistant to Mr. Read in the work of organizing the shipping point inspection service.

A ruling from the office of the attorney general holds that the director of agriculture through the office of standardization may issue certificates as to the quality and condition of fruits and vegetables at the shipping point and that such certificates may state that "this certificate is receivable as prima facie evidence of the truth of the statement contained therein in all courts in the state of California."

WHO GETS THE MONEY?

Permit me to call your attention to two documents that have a bearing on the two editorials in your issue of June 12, headed, "Reducing Food Prices" and "What's the Idea?" "The relation between wages and the increased cost of living; an analysis of the effect of increased wages and profits on commodity prices," submitted as evidence to the United States railroad labor board, reveals many important statistics bearing on the subject of "Reducing Food Prices." The evidence was generally not mentioned by the newspapers. However, the New York World said the evidence is "incontrovertible unless the corporations of the country want to take the position that their own financial

statements are false." See the "Nation," June 12, page 796. As one example, see the evidence relating to the packing industry. The average annual percentage of profit on capital stock increased from 14.4 in the years 1912-14 to 36.9 in the years 1916-18. The advance in the wholesale price of beef was over 12 times as great as the total labor cost of the products. Take shoes: In 1914 profits absorbed nearly half the price paid by the consumer; all the labor from the hide to the finished shoe absorbed less than one-sixth of the cost to the consumer. In 1917 labor absorbed only one-ninth.

I am calling your attention to this so that you, as an individual, regardless of the policy of your paper, may, if you so desire, ascertain the facts as to labor's share in increased prices. A tremendous volume of misinformation on this subject is now current in all sorts of publications. The result of the situation desired by those engaged in this propaganda would be as unfortunate for the farmer as it would be for other producers. The basic idea is that of imperial Rome: "Divide and rule." Protected by mutual distrusts, the large parasitic class hopes to continue to levy tribute on the producers. Now my definition of a producer is as wide as life itself. Any one who contributes in a useful way to the work or play, the love or religion of the human individual, is a producer. He who lives by exacting a toll from the earth's treasures as they are transferred, in one shape or another, from one individual to a different individual, is a parasite and can be eliminated. The machinery of distribution does not need them. In fact, the machinery cannot function freely until the tollgatherers are removed.

But I must stop. I had intended no dialectics or information about "incentives" or "reward" or "savings." I simply wanted to tell you about the two articles and let you do your own thinking.

The document that is of interest in connection with the editorial, "What's the Idea," is the statement showing the distribution of government expenses compiled by Dr. Rosa mentioned on page 27, Literary Digest, June 12, 1920. The farmer can readily ascertain from this that out of every \$100 he pays the government (either directly as income tax or indirectly), the government spends 63 cents (about) on agriculture, one cent in looking after the interests of labor and \$93 on war.

Apologizing for the unintended length of this letter and assuring you that I have an active interest in farming, though not at present working on the farm because of circumstances beyond my control, I am, A. Lewis, Los Angeles.

KEEP EGGS COOL

Statistics show that from one-fourth to one-half the eggs produced during the summer months are a partial or total loss, says H. L. Kempster of the University of Missouri college of agriculture. Heat is directly or indirectly responsible for enormous losses. Heat causes germ growth, embryo and mold development, increases evaporation and causes eggs to become bad in a very short time.

Nearly all losses due to heat can be avoided by the ordinary conveniences that the average farm provides. This is especially true provided the farmer keeps roosterless flocks. If the farmers would take the same care of eggs that they do of butter and cream before and during the time it is taken to market there would be little loss because of heat. Any temperature above 70 degrees causes eggs to start deteriorating. Even under the best of conditions eggs should be marketed at least once a week.

Eggs should be collected daily and should be cooled as quickly as possible. A sweet, fresh basement which is cool or a cyclone cellar makes a satisfactory place to store eggs. They may also be kept cool by placing them in a bucket and lowering into a well. Avoid storing in a musty basement, keep away from flies and remember that the above suggested conditions are better than a room in the house.

CONSERVING MOISTURE

"I went 20 miles on a gallon yesterday."
"That's nothing. I went two months on a quart."

VALUE OF INOCULATION

We believe that there are circumstances in which inoculation of leguminous seeds may result in material increase of crops and more rapid up-building of soils. There is little question that there are circumstances, however, where lands have grown leguminous plants for ages and artificial inoculation may be very slight or possibly nil in effect. The Butte County farm bureau has been making some tests, and the last issue of the County Farm News reports:

About 30 test plots of the use of inoculation bacteria on leguminous seeds were planted in the county this year as farm bureau demonstrations to determine the value of the inoculation of cover crop seeds, etc. These experimental plantings all had adjacent check plots planted with uninoculated seed. To date almost all the reports which have been turned in show no beneficial results of the use of inoculation bacteria. However, it is not fair to draw positive conclusions this year, because the small rainfall did not produce a normal growth of cover crops. These demonstrations must be repeated before definite results can be secured.

A number of alfalfa seed inoculation experiments are being tried by farm bureau members in various parts of the county and the results of these demonstrations will be known later in the year.

Only by planting check strips of inoculated and uninoculated seed can the real value of inoculation be determined.

FISH FERTILIZER PLANT IN LOWER CALIFORNIA

According to a recent report from Consul Burdett, a new fish fertilizer plant, financed by American capital, is ready to start operating at Sauzal, near Ensenada, Lower California, Mexico. In 1918 the territorial government of Cantu, at a cost of \$80,000, erected a plant at Sauzal to convert kelp into materials for use in powder manufacturing. However, the war ended just as the plant was ready for operation.

The building, machinery and pier were acquired by American capital, which has remodeled the plant, installed additional machinery, and is now ready to operate it as a reduction plant producing fish meal fertilizer and fish oil as a by-product. Later it is intended to install a cannery to pack the edible fish.

The plant has a present capacity of 150 tons of fish per day. Schooners operating in Mexican waters off the Ensenada coast will catch the fish and deliver it at the company's pier. The more valuable of the edible fish will, naturally, be sent to other markets in San Diego and Los Angeles because of the high price paid there, while the lower grade fish will go to the fertilizer plant.

Skagit County Fair, Washington, August 9-14.

SORGHUMS MAY BE POISONOUS

Under the name, "sorghum," are included sweet sorghum or sorgo, milo, kafir, broomcorn, kaoliang, feterita, Sudan grass, etc. Some of these plants, and possibly all of them, may be poisonous under certain conditions. The poison is prussic or hydrocyanic acid.

In the dry land districts conditions are favorable for poisoning. When cane or kafir has made a stunted growth for two or three weeks before frost the most poisoning occurs. After it has been cured by cutting or frost it has never been known to kill animals.

A few mouthfuls of kafir on an empty stomach have been known to kill a cow in ten minutes, says Dr. Glover of the Colorado agricultural college. Prussic acid forms in the stomach very quickly from the presence of a glucoside in the corn which is acted upon by a ferment.

Conditions for poisoning have been found in quite a number of both native and domesticated plants, and it is quite possible that in many cases where animals have died mysteriously without the presence of either infection or any known poisonous plant, that some plant capable of developing prussic acid is responsible.

Farmers should know the conditions under which poisoning is liable to occur and take no chances. Acute cases are so rapidly fatal that the animal is usually dead before remedial measures can be adopted.

IT DOES LOOK IT

Meiba went with her parents to a cafeteria for dinner the other day. When the tot saw her mother going around with the tray she called out: "Muvver, do you has to work for our dinner?" D. J. T.

Watch the late sown lettuce, turnips, etc., for green aphids. This insect may be kept in check by spraying with some of the tobacco preparations. The treatment will have to be repeated several times to get all the insects.

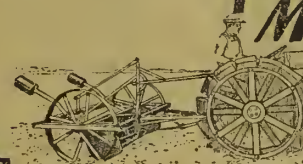
Iris may be set out this month and next. There are many fine varieties to choose from now-a-days.

WEATHER REPORT
San Francisco, California, July 10, 1920.

Stations	Rainfall		Temp.	
	Wk.	Season.	Norm.	Max. Min.
Eureka	.01	.03	.06	58 48
Red Bluff	.00	.01	.00	106 82
Sacramento	.00	.00	.00	100 82
San Francisco	.00	.00	.00	65 48
San Jose	.00	.00	.00	84 52
Fresno	.00	.00	.00	108 82
San Luis Obispo	.00	.00	.01	84 50
Los Angeles	.00	.00	.00	86 54
San Diego	.00	.00	.00	72 58

WEATHER REPORT
San Francisco, California, July 17, 1920.

Stations	Rainfall		Temp.	
	Wk.	Season.	Norm.	Max. Min.
Eureka	.09	.12	.11	64 50
Red Bluff	.00	.01	.00	90 54
Sacramento	.00	.00	.00	86 52
San Francisco	.00	.00	.01	68 48
San Jose	.00	.00	.00	80 48
Fresno	.00	.00	.00	96 55
San Luis Obispo	.00	.00	.01	76 46
Los Angeles	.00	.00	.00	88 58
San Diego	.00	.00	.00	78 61



Move More Dirt at Less Cost

with a **Compton** one-man **TRACTOR SCRAPER**

Operated by the tractor driver from the tractor seat. One man does it all. Moves more dirt with less power. The 5 foot size does the work of 3 or 4 four-horse scraper teams. Saves enough time, horse-feed and labor to pay for itself in a few days. A size for every tractor. Prices from \$215 to \$335.

Send for descriptive circular and price list.

THE WOODWARD COMPANY

FRESNO, CALIF.
Box 706

GRASSES FOR PASTURE

Now is the time to plant them. Once established they endure indefinitely

For Summer Pasture: Rhodes, Guinea, Para.

For Winter Pasture: Phalaris Stenoptara, Smilo, Paspalum Dilatatum

We offer plants of the following—prices postpaid:

	Per Doz.	Per 100	Per 1000
Napier—divided crowns	\$1.00	\$4.00	\$30.00
Guinea—divided crowns	1.00	4.00	
Smilo seed per lb., \$3.00—divided crowns	.50	1.00	4.00
Phalaris Stenoptara—Plants	.50	1.00	4.00
Para—Stems	.50	1.00	4.00
Japanese Sugar Cane—Stems	1.00	4.00	

For further information on any of the above subjects, write

AGGELER & MUSSER SEED COMPANY

620 So. Spring St., Los Angeles, Cal.

How it Happens

that SPERRY ^{DRIFTED SNOW} FLOUR
is always the same

TO begin with, it doesn't *happen*. It's just a natural, inevitable result of marvelous accuracy in making. This scientific and practical care and skill enter into the making of Sperry Drifted Snow Flour every step of the way, from the selection and proper proportioning and thorough blending of the various wheats to the very sewing of the sack in which it comes to you.

Chemists test Sperry Drifted Snow Flour at every stage of its making. And finally when each milling is finished, repeated tests are made in the baking laboratory further to "prove perfection absolutely perfect." Then, and not till then, is Sperry Drifted Snow Flour permitted to go to your grocer for *your* service.

Ask your grocer for Sperry Drifted Snow Flour—"The Standard since 1852"—and see that you get it!

SPERRY FLOUR CO.

U. S. A.

11 mills and 48 distributing points
on the Pacific Coast and in the
intermountain territory.



CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

July 31, 1920

No. 5



Aqueduct of Anderson-Cottonwood Irrigation District





The Story of Hank Wise

Hank Wise conceived the idea of mixing saw dust with the feed for his cows. Each day he increased the amount of saw dust and decreased the feed. But just as he reached the point where he was using pure saw dust, his cows died.



Here's a curious fact: The ranch owner who gets along with "just any kind of silo" is in the same class with Hank Wise. He may not know it, but he is really losing instead of saving.

The improperly constructed silo leaks air; air prevents fermentation and results in spoiled silage unfit for feed; the cost of this spoiled silage may equal the difference between silage and dry feed. Thus it is costing the ranch owner just as much to feed silage as dry feed plus the cost of the silo.

How much better it is to own a dependable Simplex Silo—dependable because it is built in accordance with scientific requirements. There is no leakage in a Simplex because there are no end-joints—the one-piece staves take care of that.

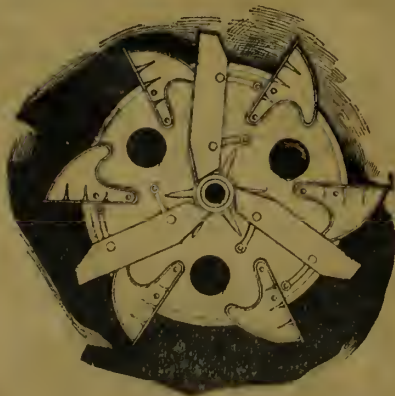
There are no air pockets nor honey-combing of the inner wall—the smooth surface of the Clear Oregon Pine (Douglas Fir) takes care of that.

The Simplex is always in a true circle, always proof against twisting, warping and collapsing — the Crissell Tangent Top, Patent Interlocking Anchorage System and steel hoops take care of that.

In short, the qualifications of the Simplex are summed up in the words of the agricultural experts who pronounced it "scientifically correct."

Wouldn't you prefer to be sure with a Simplex than to take chances, particularly this year when the saving of feed is so vitally necessary?

THE WHEEL OF THE PAPEC with its six fans and small pipe throws and blows a steady stream of silage with a force much greater than a cutter with four or less fans.



You Can Clip and Mail This Coupon in Two Minutes

SANTA FE LUMBER COMPANY

16 California Street

San Francisco

Please send me complete information regarding the Simplex Silo and Papec Ensilage Cutter.

Name

Address (Dept. C)

See Our Exhibit at the California State Fair, Sacramento, Sept. 4th to 12th

The Need of a Better Livestock Program

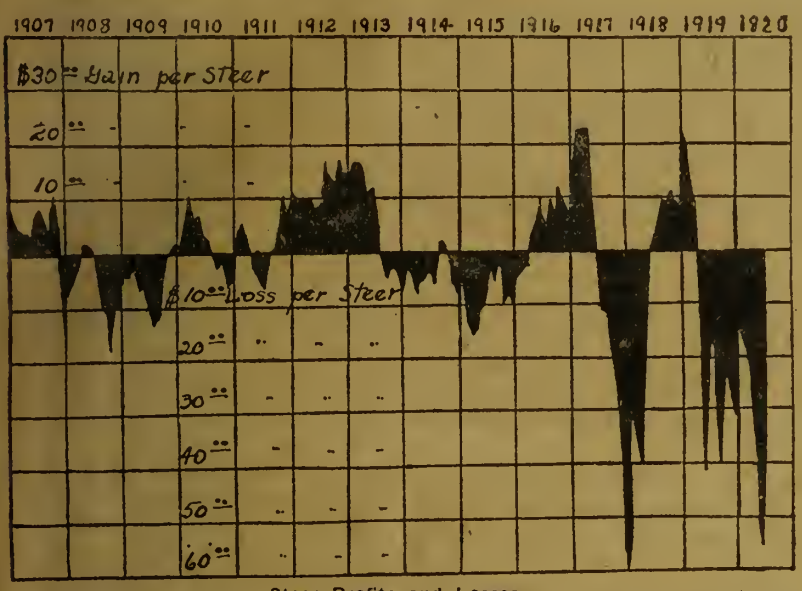
By R. P. Royce

THE present season is proving a disastrous one for many men in the livestock business. On every hand can be heard complaint. Generally speaking, abnormal scarcity and high priced feed, insufficient and inefficient labor and unsatisfactory markets are the principal factors making for the pronounced dissatisfaction.

be, forced to liquidate their holdings in an effort to stop the heavy drain on their resources. Deplorable as the situation is, an analysis of the problem can hardly fail to lead to the certain definite conclusion that out of the present mess and muddle must come a readjustment of our livestock

of the state and nation than the production of livestock. Our very existence is dependent upon the stable and profitable business of livestock production. The growing and handling of livestock is not going to be permitted to go "to pot." Our people must have milk and meat and wool. Of equal importance is the primary

equally fundamental—no man or set of men will continue their efforts in any business in which there is no profit. If the consuming public believes otherwise, it is due for a sad, sudden, emphatic awakening. Let the present liquidation continue—and it is not confined to California—the public will wake some morning with an empty milk bottle and a long series of meatless days ahead of it. When that time comes there will be a mad scram-



Steer Profits and Losses

In reference to the above chart, Wallace's Farmer says: "The steers which were marketed in June were fattened on corn that cost \$1.63 on a Chicago No. 2 basis. As the average of ten years, it has required the value of \$3.3 bushels of such corn to convert the feeder weighing 1,000 pounds in December into a 1,300 pound fat steer for the June market. This past December 1,000 pound steers cost \$91. The total cost of a 1,300 pound steer finished in June was about \$226.70. The selling price was \$15.30 a hundred, or \$198.90. The loss for June was about \$27.80 per head, as compared with a loss of \$56.40 per head for May and \$45.87 for April."—Engravings from Wallace's Farmer, Des Moines, Iowa.

Surely such a set of conditions as are facing producers are calculated to try the stuff that men are made of, and there can be no doubt but that many men are being and will continue to

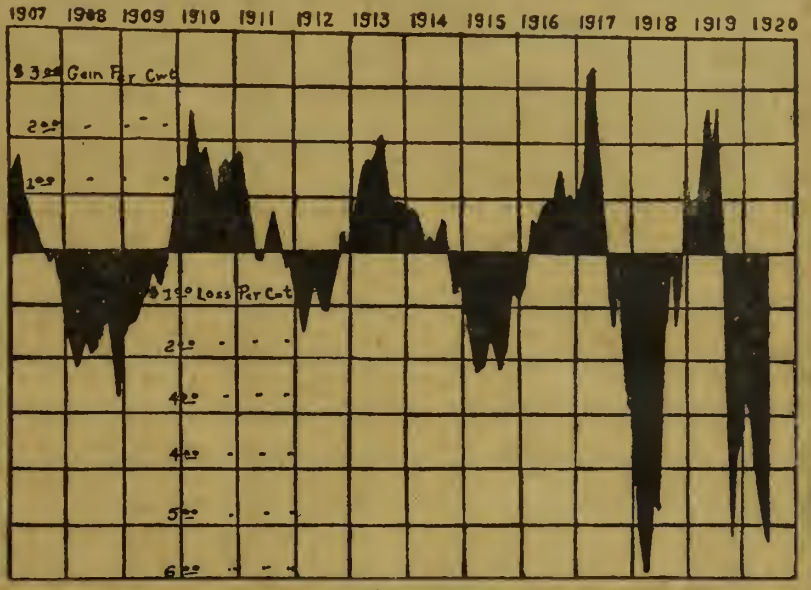
activities to a new and safer order of things.

Fundamentally, we can be sure of this: There is no business of greater importance to the continued welfare

role livestock must occupy in the matter of soil fertility. Therefore, given a thoroughly sound and primary business, we have the one basis for a permanent business. But this is true, and

ble for the short supply and prices will advance accordingly.

Now the average livestock man is put up on just about the same specific (Continued on Page 134.)



Hog Profits and Losses

The above chart shows in a very graphic way the ups and downs of the hog market, based on Chicago prices for hogs and measured by the ten year average corn equivalent. For example the ten year average June price for pork was equivalent to 12.1 bushels of No. 2 corn. Last June hogs averaged \$14.65 per hundred at Chicago. According to the chart they should have brought \$19.81.—Engravings from Wallace's Farmer, Des Moines, Iowa.

Citrus Insect Pest Control

By Ernest Branton

THE third annual citrus spraying and fumigation school of the Los Angeles County farm bureau was held in the Pomona high school Friday, July 23, presided over by Robert H. Neely, county vice-president. The subject for the forenoon was spraying for citrus pests, and, for the afternoon, fumigation of citrus pests.

The first speaker, though not on the announced program, was Farm Adviser Hodgson, who briefly outlined the work of the farm bureau and farm adviser resulting from transferring a portion of the activities of the United States department of agriculture and state college of agriculture to farm bureaus. Thereby these departments may get in close personal contact with the farmer, bringing the school or educational plan close to him instead of his having to apply to these far away general headquarters.

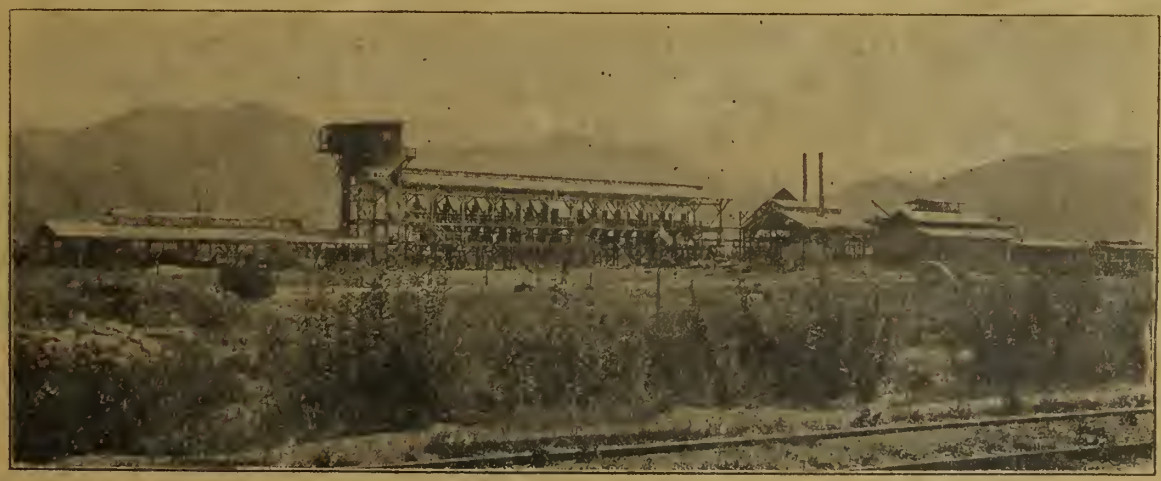
Red Spider Control

This subject was first treated by Rollin La Follette, superintendent of pest control on the Leffingwell ranch, Whittier. We quote: "This pest first made its appearance in 1895. Its life cycle is 35 to 40 days. Its presence

is indicated by pale silvery foliage and pale color of the fruit, being worst in the tops of the trees. When in sufficient numbers it gets on lemons in storage, especially at the stem end. Our experience has been that the oil sprays are not satisfactory. The lime-sulphur spray is better and is most effective in the hottest weather, at

75 to 80 degrees. Dry sprays are cheaper but less efficient than liquid sprays. We use 75 feet of hose and spray guns, the latter being far preferable to rods. The force turns the leaves over and so reaches both sides. Two men work each outfit, a driver-sprayer and a second sprayer. The material is applied at 250 to 275

pounds pressure. It is mixed in lots of 100 gallons at a time and one man will mix eight lots a day. Sometimes but one spraying a year is necessary, but for best control one in the fall and one in spring or early summer is advised. To sum it up, success comes from spraying two to three times a year, keeping machines in good condition, keeping experienced help, mixing your own sprays, applying first in (Continued on Page 126.)



Where Hydrocyanic Acid Gas Is Manufactured
Plant of the Owl Fumigating Company near Azusa in which a great portion of the liquid gas used in California citrus orchards is manufactured.

Agricultural News Notes of the Pacific Coast

Northern California

Sonoma County fair will be held August 23-29.

Shasta County farm bureau fair will be held October 1-2 at Redding.

Alameda County farm bureau has established a branch office at Livermore.

The California Almond Growers Exchange has enlarged its San Francisco headquarters.

The Sacramento River is declared to be the lowest ever known at this season of the year.

Alameda County hay balers report crop running much heavier than earlier season estimates.

Fruits for exhibition at the coming state fair are being placed in cold storage in Sacramento.

The Apple Growers Union of Sebastopol has named \$2.75 per box as opening price on Gravensteins.

The board of supervisors of Lake County has agreed to support volunteer fire fighting companies.

Lake County irrigators are circulating petitions asking for the formation of a county irrigation district.

Students contemplating entering the University of California are expected to file applications prior to August 2.

Opening prices on Gravensteins have been named by the Apple Growers Union of Sebastopol at \$2.75 per box f. o. b.

The Prune and Apricot Growers Inc. has named opening prices on apricots, which may be found on market page this week.

The Sacramento Valley Seed Company is beginning the shipping of seed peas which have grown on a thousand acres in the Sacramento Valley.

One sheep herder, driving 600 sheep from Corning to their summer range, arrived with only seven head, the remainder being scattered and lost.

The Poultry Producers warehouse at Petaluma received more than 2,000 cases of eggs a day during April and May, 42 per day more than during same period in 1919.

The chamber of commerce of Sacramento is throwing its influence with the rice growers in the effort to have them enjoined from taking water from the Sacramento River.

Tehama County farm bureau market department recently held its first open sale of fat stock. Four cars of hogs and one of cattle were sold, hogs going at \$14.50 and steers at \$10.50.

Chico chamber of commerce has elected officers of a fair association and appointed committees to stage an agricultural fair. Allison Ware is president and Frank D. Durfee is secretary.

Gravenstein growers in the Sebastopol section of Sonoma County report fruit sizing and coloring better than usual. Growers are making a special point of holding fruit till full maturity before packing.

Eldorado County pear growers are taking steps to protect the brand of their pears in the shipping of "frost ringed" fruit. They are insisting that these frost marked pears shall be plainly distinguished from others under regular brand and labeled "Frost Marked." This mark does not injure fruit but is a blemish affecting appearance.

Central California

Fresno is muzzling all dogs because of rabies.

The Peach Growers Association plant at Clovis is being remodeled and enlarged.

Turlock fat hog auction scheduled for July 20 has been postponed until August 4.

The close of the apricot season in the Santa Clara Valley saw green fruit selling as high as \$110.

Kings County has planted this season a considerable acreage to Lovell, Muir and Elberta peaches.

Watsonville cannery has closed its run on cherries, having a larger season than any preceding year.

Terra Bella is building its second citrus packing house, which will be ready for the 1920 Navel crop.

The state fish and game commission has planted 50,000 trout fry in the streams of Santa Clara County.

Santa Cruz County apple growers report tussock moth and leaf roller exceptionally prevalent this year.

New settlers are arriving on the second unit of the Delhi Colony. Walter E. Packard is superintendent of the settlement.

Fresno's plum shipping season has closed with by far the greatest shipments of any season. Prices range around \$200 per ton.

The California Associated Olive Growers is suing former President Martin for \$12,000 because of deal with another corporation.

The new plant of the California Peach Growers is equipped with "practically peeled" machinery and other most improved and up to date appliances.

Fresno reports 90 per cent peach crop. Packing houses are now handling the fresh fruit and canneries are operating on peaches at Selma, Reedley and Fresno.

The chamber of commerce of San Jose has taken steps to build a large number of new homes for fruit workers and others who wish to locate in the Santa Clara Valley.

Tulare County reports field mice working havoc in some of the orange orchards, especially those which have heavy mulches of weeds or straw on the surface. Commissioner Collins is taking up the matter.

Sales Manager Sturtevant of the California Peach Growers has just returned from Eastern market centers and reports dried fruits which were returned to the East from Europe are practically cleaned up, so they will have little effect on this year's buying.

Commissioner Collins of Tulare County reports transactions for the past year and gives particular attention to the fumigation campaign made against the gray scale. The season was opened on the night of July 21, 1919, and continued till October 1. Nearly 2,000 acres were treated on 135 different properties.

In the campaign conducted by the California Peach Growers Association to gain control of fig acreage of this section, \$350,000 has been subscribed. Five hundred thousand dollars is required before the peach growers association will take over the fig crop. This will give them a 75 per cent control of the acreage in the district.

Southern California

Indio is erecting cotton gin.

Citrus growers discussed fumigation at Pomona last week.

The Japanese own 2,000 acres of land in Ventura County.

Walnut growers are discussing effect of dusting with tobacco extract.

A serious forest fire devastated the range back of San Jacinto and Hemet.

The cannery at Placentia, Orange County, will soon be in full swing on tomatoes.

The Cypress farm bureau center of Orange County holds its first meeting this week.

Orange County board of supervisors has appropriated \$1,500 to encourage the county fair.

Work is beginning on a \$15,000 walnut packing house at Lankershim, Los Angeles County.

The Holly Sugar Factory at Santa Ana, Orange County, is building cottages for its employees.

A La Habra, Orange County, hay producer recently saw a stack of 15 tons of hay go up in smoke.

Manager Churchill of the Lima Bean Association reports the association as doing a business aggregating \$5,000,000.

Independent walnut growers of Santa Ana, Orange County, are talking of organizing a new walnut association.

Coachella Valley has order for 500 bales of short staple cotton middling grade, December delivery at 36 cents per pound.

Orange County's board of supervisors has unanimously agreed to the continuation of the farm bureau budget another year.

Dairymen of Orange County recently met at the farm adviser's office and decided to continue cow testing association work.

Orange County's shipments of Valencias were 100 per cent greater during the month of June than the same month last year.

Packing and shipping of the season's dried apricots is now under full swing. The fruit is much larger and heavier than last year.

Roy Campbell of the United States bureau of entomology at Alhambra is investigating onion thrips depredations in the Coachella Valley.

San Fernando Valley, Los Angeles County, has shipped its greatest output of potatoes. The spuds have been averaging to growers about \$2,000 per car.

Church people of Covina, Los Angeles County, are counting all their Sunday laid eggs for two months to sell for aiding poor children to have an outing.

Malaga grapes of the Coachella Valley ripened so rapidly this season that great difficulty was experienced in securing sufficient help to handle them in the short season.

Field fires recently destroyed some \$6,000 worth of standing grain near Hemet and the insurance company carrying the risks made payment in full on policies carried.

Orange County sugar factories report the present season as probably having the longest run. The campaign will open about August 5. The beet acreage is greater than last year.

The Coast and General

Dairymen of Stephens County, Oregon, are organizing a cow testing association.

Lewis County, Washington, is now harvesting its greatest supply of cascara bark.

Thurston County, Washington, has just appointed its first county agricultural agent.

A new union depot, which has been dreamed of for many years, seems likely to be realized now before long by Phoenix, Arizona.

Dates for the Northern Arizona fair have been definitely set for October 14 to 16. The fair will be held at Prescott and is the eighth annual event of this kind.

Forest fires have been raging to a damaging extent over a part of the Coconino forest reserve of Arizona. A number of forest fires have also occurred in Santa Cruz County.

Extensive improvements have been made on the Indian Hot Springs resort in Graham County, which will make this one more of the natural wonders of Arizona which will be worth visiting.

The long staple cotton crop in the Salt River Valley of Arizona, which had a late start, with conditions in consequence somewhat below normal, is now looking better with prospects excellent for an average crop.

Weather reports show that the usual summer rains of Arizona have been thus far conspicuously absent. Only in a few localities have there been any. The ranges are beginning to dry up and water will soon become short in many places.

The valuation of the mines of Arizona for the year 1920 has been fixed at some \$25,000,000 less than the valuation for last year, which was \$414,236,636. Railroads this year are rated \$101,064,350, an increase of \$1,000,000 over last year.

W. S. Norvell, water commissioner for Arizona, has received applications for water appropriations sufficient to irrigate 276,231 acres of land. A large number of these applications are pumping propositions, although 26 reservoirs are contemplated.

Yuma Valley, Arizona, reports loss of a million dollars because of lack of labor in harvesting last year's cotton crop. An association is now working to secure a labor supply for the coming crop, but some laborers are demanding as high as \$10 per day.

During a recent storm on the Navajo Indian reservation one of the medicine men was struck by lightning and was unconscious for four days. Instead of the "stars" that one is presumed to see at such times, he claims to have had visions of a big storm, with floods. His story has frightened the Indians so that many have fled into the higher lands, taking their sheep, cattle and other belongings.

A cotton growers tour was staged by County Agent H. C. Heard of Maricopa County, Arizona, Saturday, July 10. About 30 autos with nearly 100 farmers traveled some 30 miles, visiting five fields of cotton which had been handled in different ways or were on different types of soil. The object of the tour was to show by object lessons the correct method of handling the water for irrigation in order to prevent a too excessive growth of cotton stalks and leaves and to increase the number of squares.

Three Years Fumigation on the Leffingwell Rancho



THE Leffingwell Rancho is composed of about 350 acres, the greater part of this being lemons, some 24 years old and the rest 14 years old. About 200 acres is held by individual owners in small tracts, but the fumigation is still carried on by the rancho through the lemon association, which includes all of the acreage of the original ranch.

The only scale pest that we have in quantity is the black scale. In the Whittier region it hatches in June and July, so that fumigation starts the last of July or the first of August and continues into the winter months, at which time the second hatch is fumigated for, there being two generations a year in that region. We also are blessed with a few patches of red scale, but this has not as yet become a serious pest on the ranch, so only the control of the black scale will be considered.

Up to two years ago the equipment consisted of a string of between 60 and 70 45 foot tents. Lately we have added a string of 34 foot tents, which are used partly on the ranch and partly in outside work.

In former years one of the sub-foremen in the packing house who had some knowledge of fumigation, during the summer when work was slack in his own department, used to handle the fumigating crew under the supervision of the ranch foreman. During the past three years a man has been secured to devote all his time to pest work and he has in turn had charge of fumigation and the string of tents.

The 350 acres was divided off into blocks, ranging roughly from five to 20 acres and as a rule fumigated in these units. The blocks were inspected from time to time as to the amount and condition of scale, the idea being to hit about half the ranch each season, thus getting along with doing about 150 to 200 acres a year.

With only this amount of acreage to cover a season it would seem a very easy matter to hit the scale in just the right condition and thus secure an excellent kill, and such was the case for several years. We got by fine by fumigating half the acreage one year and the other half the next. But on checking up the records we found that there were certain blocks that had been fumigated for the past four or five years still showing considerable smut on the fruit. Even with a small acreage to do each season and careful watching we were not able to clean these groves up so they would go every other year.

This was the method followed during 1917, when about 140 acres were done in August and September, using the old method and sodium cyanide as a base for the gas. Although this work was very carefully done it showed up so poorly that half of it had to be done over again in 1918. This was due to the fact that the scale was so uneven it was impossible to find a time when a commercial kill could be obtained. It was not even possible to do the work every season and keep the trees clean so no fruit would go into the house unsmutted.

Fumigated Twice a Year

So during the season of 1918 we put in practice a little different method. We went over the blocks in the spring and picked out those that needed fumigation and again did the work in Au-

By J. R. La Follette, at Covina Citrus Meeting

gust and September, fumigating about 185 acres. Then we followed this up closely for the next two months and started in November to go over those that had shown up dirty again, finishing in February a total of six blocks, or 80 acres. Now it is interesting to note that this acreage had all been fumigated the year before and most of it the year before that, while other blocks were getting by with one fumigation every two years over the same period. This seems to prove that it was not a case of poor work, but a scale condition that had been in evidence for several years. This may look like a prohibitory expense and one that can only be carried by the large grower, but wherever we fumigated black scale twice within the year we found we did not have to do it again the next season, thus making an average of one fumigation a year after all, and since the trees and fruit are clean for the next 18 months you see we were money ahead. This would be a paying proposition even if the grower had to go out and borrow money, for the advantage of having a clean grove, healthy trees, more fruit and better fruit, to say nothing of dodging a bill for hand washing of fruit, would more than offset the extra expense.

Moreover, once these blocks were cleaned up we were able to get along on a fumigation every other year. I think this is a point that should be emphasized because I know of several groves in our vicinity that were fumigated last year and owing to a bad off-hatch condition a kill was not obtained. The owners could not be persuaded to hit them again in the winter when the second hatch came on and as a result the orchards have been dirty all season, injuring the trees and fruit. They will now have to be fumigated this summer and are in such shape that it is very doubtful if a kill will be obtained. Seemingly it would have been much better to have gone ahead and given two fumigations, even though it looked like a very heavy expense.

I think this is a point that should have great emphasis. I will admit that conditions vary greatly throughout the citrus districts and that there are places where two fumigations a year have not made a clean up, but I do know that on the Leffingwell Rancho we have been very successful in following this method and have been financially ahead by so doing. I also recall several examples of good red scale cleanups by giving two fumigations a year in our district.

Liquid Gas

Coming down to the season of 1919, we undertook several new methods of handling the work which might be of interest. In the first place we changed over to the liquid gas, and I might say in connection with this, since I have heard that several localities have been rather dissatisfied with the results obtained, that we have been well pleased with the kill we obtained and I think it is the general opinion of those in close touch with the work around our end of the county that the kill throughout the district has been the best obtained for years.

In comparing the cost of material on several blocks for 1917, when the

cyanofumer was used, against 1919, when liquid was the method employed, I find an increase of about 15 per cent in the cost of material. That is, trees that in 1917 cost 17 cents for material, last year cost 20 cents. When we stop to analyze these figures I do not think they will seem out of proportion in comparison to the rise in cost of other materials in the last two years. Of course, the trees had made a slight growth in that length of time, but I do not think this had as much to do with the increase as the loss from evaporation in handling the liquid gas. I think this has been much greater than many of us realize or thought it would be at the beginning of last season when its use became so general.

Last year we stored our gas in a ventilated room and kept the place wet down with a hose. This year we think the matter of keeping the temperature down to reduce evaporation so important that we contemplate the use of ice and the packing of the drums in shavings.

Daylight Fumigation

Another radical departure from the old and beaten path of the past was daylight fumigation. Daylight fumigation is a topic in itself and I do not feel in a position to go ahead and discuss it much in detail. I do think, though, you might be interested in the work we did on the ranch along that line last season and the results we obtained. I will not contend that the methods we used can be applied this season with the same results or that they could be used in another locality successfully. However, I do think they are a basis to work on for further development of daylight fumigation, and we intend to use them in that light.

Out of the 165 acres fumigated last year on the ranch 115 were done in the daytime. The first work on a commercial scale was done in October, beginning on the first day of the month. At that time we shot a 19 acre block of lemons, working from 1:00 in the afternoon on through the evening. The temperature ran anywhere from 70 to 86 degrees and the humidity from 23 up to 70. Incidentally we found throughout all our daylight work that the humidity had very little to do with the resulting kill or the amount of burning obtained on the trees. These tents were left on from 30 to 40 minutes during the daytime and along toward evening the time was lengthened up to one hour, after sundown. To handle this we used a double string of tents, 60 in all, and carried 30 of them every 30 minutes until after 4 p. m., then picked up the rest and left them on the full time. The dosage was kept at 77 per cent throughout the entire time. In this case you see the exposure was cut only.

The trees in this block varied greatly in size on account of resetting, being anywhere from two to 24 years old. This made it difficult to get a uniform dosage.

The results of this work, so far as scale kill was concerned, were excellent, but some trees burned in the tops on the south side where the sun's rays hit directly on the tent. This burning, so far as we were concerned on the ranch, was insignificant, as it was all

on foliage that had to be pruned out, sucker growth, and there was no fruit damage in any way. Also, the kill was much better than we had ever obtained by night work on the same piece.

A few days afterwards we tried daylight work on a block of oranges, starting in the morning after the dew had dried off and continuing until evening. This time we used a full string of 45 foot tents, 55 in number, leaving them on 50 to 60 minutes, dropping the schedule down to 66 per cent when the temperature got up above 62 degrees. We found that we got less burning than in the lemons but the kill did not seem to be as good.

This might indicate that a heavier dosage for a short time gives better results in daylight work than a light dosage for the longer time, although I would not want to go on record as making a positive statement to that effect.

Winter Campaign

This finished up our first campaign on the ranch and no more work was attempted until the last part of December, when the winter campaign was started on blocks that we were not able to get to in the summer when the scale was right. This work was all done during the daytime and the only hindering feature was the morning dews that sometimes hung on until 8:30 or 9 o'clock, and low temperatures in the mornings. In this work the temperature ran from 50 to 88 degrees on January 17, which was the hottest January day on record.

We followed more or less the practice of leaving the tents on 45 minutes and using a 100 per cent schedule at all temperatures under 75 degrees. Of course this varied some, depending on the condition of the sky and was left to the judgment of the man running the machine. When the thermometer got up above 75 degrees we cut our dosage to 88 per cent.

This time of the year it is not so important to watch the length of time the tents are on so closely.

In February we even used a schedule of 111 to 122 per cent for red scale in the daytime, with temperatures that ran as high as 78 degrees, but this was on very tough trees and at a time when the scale were very resistant.

All our winter work gave an excellent kill and a higher average, I think, than that done in the summer. This was due to several reasons: The fact that it was done in the daytime when we had the aid of the heat from the sun acting both on the scale and the gas; the condition of the trees, they being much more resistant at that time of the year and able to stand higher dosages of gas; the condition of the scale, as they grow more slowly in the winter and seem easier to kill than in the summer. We noticed that we could kill scale in the rubber stage that we could not touch at night in the summer time. The men were much more satisfied to work in the daytime and covered a lot more ground than at night. In fact, I know we would have experienced a lot of trouble holding crews through December and January when it was cold and damp at night and many orchards had cover crops to contend with.

Taking everything into consideration, our daylight work during the winter months was very satisfactory, but I do not think that the experience can be taken and applied directly to work this time of the year with safety, although I am not saying that it cannot be done.

In conclusion, I think the following points are of the most importance and the ones responsible for the results we have obtained:

Covering a small acreage with our tents each year so as to do the work when the scale is in the best condition.

Fumigating twice in one season, if necessary, to clean up off-hatch conditions that cannot be controlled with one fumigation a year.

Daylight fumigation, especially during the fall and winter months when the trees are more hardy and the scale easier to kill.

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Forty-third Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

The Cultivator camera was roaming around in the extreme northern Sacramento Valley recently, and in southern Shasta County it was brought to bear on the aqueduct crossing the old bed of a river in the little city of Anderson. The waters of the Sacramento taken from the river in the town of Redding and carried underneath a part of that town through a half mile tunnel, are distributed by this, one of the newest of irrigation systems in California, the Anderson-Cottonwood district. These waters are distributed over lands in the Redding, Clear Creek and Churn Creek sections, and other rich lands around the towns of Anderson, Cottonwood and Bail's Ferry. To reach the Churn Creek section these waters are carried over the Sacramento River in great pipe lines swung under one of the Sacramento's many bridges. This irrigation district was organized in 1914 and completed in 1917. Its cost has been practically \$1,000,000, and it covers 32,500 acres of land. The greatest use of the waters of the district this year will be upon rice lands, this being the first year of rice culture in a large commercial way in Shasta and northern Tehama Counties.

The aqueduct shown on the cover

has been built after many miles of canal had been excavated, carrying the water up canyon and making many turns, necessitating such a waste of water in the loose gravel formation that the concrete structure was afterwards built, resulting in the saving of a vast quantity of water.

THE BIG JOB

Ex-Governor A. J. Wallace expresses himself thus emphatically on the Japanese question:

"If the population of Japan must have more territory for its overflow it must get it in some undeveloped area and that must be in some continent other than America. The gentleman's agreement is a decided failure and the picture bride menace must cease without delay. The big job before us is not to persuade citizens of California that California is not for Asiatics, but to teach the national legislature, the great East and Central West what the Japanese invasion really means."

WORTH A THOUSAND EACH

California realty is now declared to have reached a valuation of \$3,875,000,000, a per capita wealth in real estate of approximately one thousand dollars.

LEMONS

The lemon grower is getting his'n—"his'n" referring to red ink.

A year ago he was hopeful. Even in January it was suggested that when warm weather came the California lemon grower would get justice and at least a fair price for his product. The months passed; warm weather came; and the price continually gets no better. Just now it is getting no better fast.

Of course, we are referring to the California lemon grower. The hapless man on earth today, so far as finances add to happiness, is the Italian lemon grower. His fruit is coming into New York in a perfect flood. Nearly 200,000 boxes are now in the docks or due to arrive during the next 30 days.

The half cent a pound tariff makes their entrance most easy. The rate of exchange, which is holding down American exports, works to the advantage of the foreigner in the matter of our imports. Every dollar paid by Americans to the Mediterranean grower is practically four dollars to the grower in his own country. This is resulting in the American grower getting off the earth so far as lemon production is concerned. This is not an overstatement of the case nor a pessimistic view, but an expression in plain English of the situation now confronting many a Californian.

A lemon grower recently in this office stated that complete ruin faced him and many another lemon grower unless a change could be brought about. Lemon men fail to see any politics in the present situation but are demanding relief. If the country wishes to make its purchases of lemons from Mediterranean sections it may continue present methods of treating the lemon industry. If, however, it can realize the truth that there are times when the Mediterranean cannot meet the country's needs and feels that home production has certain advantages, we should meet the situation with something besides brass band music and front porch addresses.

Presumably the next session of congress will not be able to agree on any very definite plan for protecting American homes, but after March 4 there should be a fighting chance for real Americans.

We have spoken only of lemons. There are beans, and the bean grower has had his troubles. There are walnuts, raisins and other dried fruits, every one of which will have to compete with the flood from countries where the laborer is not expected to give to his children high school education, nor even to have a taste of meat more than about once a week.

AIN'T IT THE TRUTH?

The meat packers have an organization to which they have given the very dignified title, "Institute of American Meat Packers." From time to time the institute issues a statement concerning the meat and livestock situation. The reports are prepared very carefully and written in a vein of bland frankness suggesting a philanthropic concern for the producer. Ordinarily the information conveyed has been known to the producers for months and usually means nothing. We imagine the reports are never intended to create mirth, but occasionally one reaches our desk that does stir our sense of humor. To wit, a recent report:

"During nearly every month of 1920 producers lost money on cattle and many packers reported losses on beef. Prices of hogs and pork products are substantially lower now than at this time last year, due largely to diminished exports. The decrease in slaughter indicates that as a result of these losses some producers have cut down their herds and may restrict production. Such a situation would be an economic misfortune for both the livestock producer and the public. Past experience has been normally that higher prices for meat animals, and hence for meat, have followed restricted production, after which the consumer again restricted consumption. The ratio of livestock to population for the last 20 years, with the exception of one or two of the war years, has been constantly decreasing.

In some quarters world crop conditions and the price trend in corn and hay are interpreted favorably to producers of livestock. Those holding this view point out that lower prices for grain obviously would reduce the cost of raising livestock."

After frankly stating that "during nearly every month of 1920 producers lost money on cattle and many packers 'reported' losses of beef, which will logically lead to restricted production, the institute frankly gives the opinion that "such a situation would be an economic misfortune for both the livestock producer and for the public." In the face of the fact that the packer sets the price to the producer (all arguments to the contrary notwithstanding), and that price caused cattle to be marketed at a loss, they at least had good taste enough not to include themselves in the "economic misfortune" to follow restricted production. If the producer has failed to register a profit on cattle to date we fail to see where he will increase his "economic misfortune" by getting from under a losing game.

In the meantime, the packer wins either way production jumps.

We quite agree that lower feed costs will reduce the cost of raising livestock, but we feel rash enough to gamble a slick jitney that a profit for the producer will not necessarily follow, that is, unless the packers fail to run true to form and do not seize upon cheaper feed as a club to hammer down prices.

It's a great game if you don't weaken!

PREPARING FOR GREAT SHOW

Guy H. Hall, a representative of the National Association of Tractor and Implement Men, has arrived in California and is perfecting plans for the greatest show of farm implements, machinery and power. This will be the sixth great show under Mr. Hall's



Planning a Great Show

President Rainey of the Tractor and Implement Dealers Association of Southern California and Manager Guy H. Hall of Kansas City planning for the great National Tractor and Implement Show in Los Angeles.

supervision. There are to be only two shows held this year. Mr. Hall came with big ideas and a resolution to carry them out, but has been surprised and pleased at the unanimous support given him by local tractor and implement people, so that he is assured this united effort will result in a magnificent opportunity for California producers to become informed on today's necessities on an up to date California ranch. The labor situation, greater economy in production, and the need of the world as never before for food, impel to using this opportunity to the limit.

Mr. Hall is accompanied by Mr. Stewart of the Potts-Turnbul Advertising Agency, also of Kansas City, who will handle publicity.

CITRUS INSECT PEST CONTROL

(Continued from Page 123.)

the autumn when temperature is 85 to 90 and the greatest number of insects and fewest number of eggs are in evidence."

The next speaker was E. L. Prizer, who told of red spider control in the Chula Vista district of San Diego County, having a frontage on San Diego Bay nine miles south of the city. "Some of our orchardists spray; others allow the red spider to run its course. Three parasites work on the spider, a matter so important that I made a study of it for nine months. I found in some cases one-half of the spiders were destroyed in 12 days after appearance and all were gone in 30 days, and of the orchards examined 18 were clean. Spraying or fumigating upsets the normal relationship of parasites to spiders and defeats the good work they might do. We have found distillate spray most effective for it kills some of the eggs. Spraying in the Chula Vista district is not generally advisable, though one may occasionally prove profitable. I believe the same amount of time and money expended in keeping the orchard in prime condition is a better protection. To sum up: Predatory insects do control red spider, and fumigation kills the beneficial insects. We have had poor results with lime-sulphur, success with distillate. Do not spray in most active growing season when much foliage is young and tender."

In the discussion following the question was asked: "Are these predatory insects generally distributed over this end of the state? It was answered in the affirmative by Prizer and Quayle. The former acknowledged that the temperature at Chula Vista does not range high enough to make sulphur effective, as it needs 80 degrees, and at Chula Vista it seldom goes above 70. It was asked if arsenic mixed with the sprays would prove of value and answer by Professor Quayle was that arsenical sprays are of no value in combating red spider.

Dry Dusting

Ralph E. Smith, formerly plant pathologist with the University of California, spoke of the possibilities of the dry dusting method for the control of insect pests. "All know that nicotine will kill walnut and other aphids. The only problem is how best to do it. At first we tried tobacco dust, but it was not uniform in strength, so we turned to nicotine in 40 per cent strength, combined with a proper carrier. For some pests we use a very light carrier, as lime; for others a heavier one, as clay. For worms we are using arsenate of lead. The dust spray is superior to liquid sprays in several ways. With the latter where two to four tons of water was hauled about we now use 50 to 100 pounds of dust. Of course work with the latter is faster; also machinery used may be cheaper than for liquids. Two objections to dust spray for red spiders have been urged: low temperatures of some districts, rendering it comparatively less effective; and disagreeable effect on eyes and noses of pickers. For citrus aphids, which are bad in coastal districts, it should prove effective and economical but is needed in stronger doses than for walnut aphids and should be used early, as soon as aphids appear. Citrus thrips are easily killed by nicotine, as are all thrips."

Horticultural Commissioner Ryan was the next speaker and showed several charts and statistical tables to illustrate his statements. He said eradication is impossible, therefore control is the proper word to use. Scales of all sorts are very prevalent now for the weather has been favorable to their development. In 1917 we had a hot spell that killed a large per cent of them, but weather conditions in 1918-19 favored their development and increase. When weather conditions kill much scale fumigation removes nearly all the remainder and

the orchardist is highly pleased with the results. When conditions are bad for the fumigator a much larger percentage of live scale remains and the orchardist says fumigation is not sufficiently effective. It has been found by careful examination that in 61 per cent of fumigated orchards in Los Angeles County it was highly satisfactory, but in only 18 per cent of the sprayed groves was eradication approached."

J. D. Culbertson, assistant manager of the Limoneira, was next called upon to learn what means are taken by him to control red spider, but after mention of general conditions he referred answer to Sam Essig, in charge of their pest control department. The latter said they were still in doubt of the necessity for spraying, that they have blocks never sprayed for spider which yet are in good condition. At times the pest has been very threatening, but they let that period slip by and the orchards came out all right. There may be times and conditions where spraying is advisable. Fumigation is very destructive to predatory insects.

The Fumigation Phase

In the afternoon R. S. Woglum, in charge of fumigation investigations for the United States department of agriculture, read a paper on "Fumigation Developments During the 1919-1920 Season." He said some complaints were lodged that fumigation was ineffective and that liquid gas was not as good as the pot method or the cyanofumer. But that view is wrong. The last three years have been very favorable to the pests, but the 1919 fumigation work was very good, and charts shown proved his statements. Black scale has one principal hatch each year, occurring for 1920 just now. Fumigate early. Trees will not stand dosage required to destroy either eggs or mature insects.

Fumigate twice for "off hatches," once early and again two or three months later. Temperature is a considerable factor, high temperatures being favorable to fumigation. On the sunny side of a tree it was found 99 per cent were killed; on the shady side but 93 to 94 per cent. On one side the temperature was about 90; on the other only 70 to 74. Cover crops are a deterrent to liquid gas fumigation.

Scale in some sections and under some conditions are hard to kill. (Are they becoming immune?) Dormant scale is very hard to kill in cool weather. There was a difference of six percent in the kill between September and February under the same tent with the same dosage. The former was 99.9 and the latter but 93.94 mortality, following cold weather. Winter dosage should be increased, for it has been found that a 100 per cent schedule in winter is less effective than a 75 per cent schedule during summer. Use of liquid gas is superior to former methods. Fumigate before irrigations rather than after. Pointers: Use tape for determination of dosage; don't guess. Fumigate black scale while immature. Use heavier doses. Fumigate early, and twice in seasons of "off hatches." Avoid cover crops under tents. Avoid winter fumigation. Don't let nozzles get close to trees. Don't fumigate for at least a year after using Bordeaux.

Professor H. J. Quayle was on the program to open discussion on the Woglum paper, but said the latter had completely covered the field and left him in the predicament of the farmer who started to town with a wagonload of loose apples in wet weather. The farther he went up a long hill the worse conditions were, the horses stopping to rest more and more often. At last they could go no farther. On looking back the farmer saw the tailboard had come out and the apples

all run out on the mud. He simply said: "Stuck, b'gosh and nothing to unload."

But the professor did not quail. He said poor results often came from inattention to details—have everything ready. Make dosage heavy. From June to January scale is most resistant, therefore fumigate lemons from January to June. With oranges avoid periods when fruit would be injured. The heaviest foliaged trees need heaviest dosage. For *Coccus citricola* the best time to fumigate is from July 15 to August 1. Use a 110 per cent schedule.

The orchardists of the Pomona Valley have a "Growers Spray and Fumigation Company," and their manager, F. G. Wyman, was on the program to tell some of his troubles. He said: "Bad weather constitutes the most serious, and inefficient and inexperienced help was a good second. Wages are high but in the old days they paid by the day and now all is done by piece work, which is far more satisfactory. With pot or cyanofumer it was night work, although they could at times commence as early as 2 p. m. With liquid gas they work all day, for it occasionally is 105, in the sun, at 5 o'clock in the morning. After October 1 liquid gas is not used by us after 6 p. m. In 1910 the average cost per tree to the grower was 8.6 cents a tree. Now, with wages doubled, the cost in 1919 was but ten per cent higher. This was because no tents were bought, but tents are getting old and present price is almost appalling. Fortunately, liquid gas does not injure tents; the old pot method was very destructive, while the cyanofumer was somewhat injurious." He was strong in his commendation of liquid gas, as were all speakers on fumigation subjects. In fact, he said that at the present prices of tents the pot method would be prohibitive even if equally efficient.



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Azusa, California



Progress of California Power Farming

By N. C. Wilson, California Tractor and Implement Association

Owing to the variety of soil types on the average California farm it is almost impossible to plow evenly with horses. With a good tractor of sufficient power, however, a furrow of even depth may easily be plowed through the most frequent soil variations. The uniform hard red clay subsoil that underlies much of the state has been heretofore broken up with dynamite. But this process left a hard packed wall, which, together with the danger element in dynamiting, tended to make subsoiling unpopular. Now, however, it has been demonstrated that by using a tractor the work can be done effectively and economically.

Manufacturers, in supplying the demands of farmers of the Pacific Coast, are making such special implements as orchard plows, combined harvesters and disks, and will exhibit them at the state fair at Sacramento, September 4-12. This exhibit and that of the Southern California power dealers later in the same month are of particular interest to Californians because of the romantic history of power farming in this state proper. The farms of early California covered vast expanses of land. Fields were often measured in square miles. Animal power on such ranges had its limitations, and 15 years ago the tractor

gained foothold in the state and has been steadily strengthening it ever since. The track driven tractor led for many years on the large farms, but as these became smaller the wheel tractor helped to meet the demand. The working hours of a California tractor are much longer than those of power implements in any other agricultural section. Day in and day out, until the rush season is over, large operators run three crews in eight hour shifts.

The direct result of such extensive power farming is the diversification of crops, the development of which in turn calls for new kinds of farm machinery. Many crops a few years ago strange to the fields of California have in a short time become leading products of the state. All are directly traceable to power farming machinery. Rice growing was introduced to California in 1912, and in 1919 the state's rice crop was the second largest in the United States. Land once worthless has been improved by rice, so that barley, broom corn and other crops can now be raised there. Another recent addition to our varied list is cotton. Two hundred and fifty thousand acres are this year under cultivation. Motor cultivators are used several times during the season

to cultivate the cotton. As soon after harvesting as possible the stalks are turned under by a tractor, to guard against the boll weevil, a pest which has not as yet made its appearance here. So again the motor driven implement wins.

Garden tractors find ready market on the small truck farms. All over the state unproductive land is being transformed through the use of a great irrigation system. Medium sized tractors of either the track driven or wheel type are employed extensively in truck farming.

Study of the farm machinery industry in California throws light upon what may be expected in the line of future developments. The range of power machinery is well adapted to every sort of farm, from a tiny orchard to a vast stock breeding enterprise. No agriculturist can fail to profit by attending the two important shows in September, one in each section of the state.

DR. SWINGLE WILL RETURN

Dr. Walter T. Swingle, in charge of crop physiology and breeding investigations, bureau of plant industry, has returned to Washington, D. C., after a two weeks' tour of California. Dr. Swingle said he expected soon to come to California to live as his work demanded such a change of residence, but loyal Californians will ever claim that lure of climate was a factor in the determination.

Dr. Swingle believes, as has been

predicted in the Cultivator, that we shall yet have varieties of dates suitable for home use throughout a greater part of California. Another fruit mentioned by him is the pistachio nut, and it is interesting to note that of \$150,000 worth of exports from Aleppo, Syria, in the first quarter of 1920, more than two-thirds were of pistachio nuts. He further expects to see the litchi nut grown here and asked the Cultivator to give the information that a fine work on "The Litchi," by G. W. Groff, has been published at the Canton Christian College, Canton, China, price \$2.25. Dr. Swingle's last days in California were spent in inspecting the government date orchards in the Coachella Valley. He says that out of 100,000 seedlings now growing 50,000 are fruiting.

SICILIAN LEMON INDUSTRY

By Alfred P. Dennis, Rome, Italy

The lemon industry is of special importance in relation to American trade. While American importation of Sicilian oranges is now limited to unimportant consignments of blood oranges, we are now importing enormous quantities of lemons and their derivatives in the form of peel, citrate of lime, citric acid and lemon oil.

For the last ten years the American importation of Sicilian lemons has shown a tendency to fall off, but it is now increasing. This is due to the increased demand for soft drinks, a result of national prohibition. The director of the Camera Agrumaria (Lemon Trust) at Messina estimates the exportation of lemons to the United States during the present year, January 1 to December 31, 1920, at not less than 1,000,000 boxes of 300 lemons each.

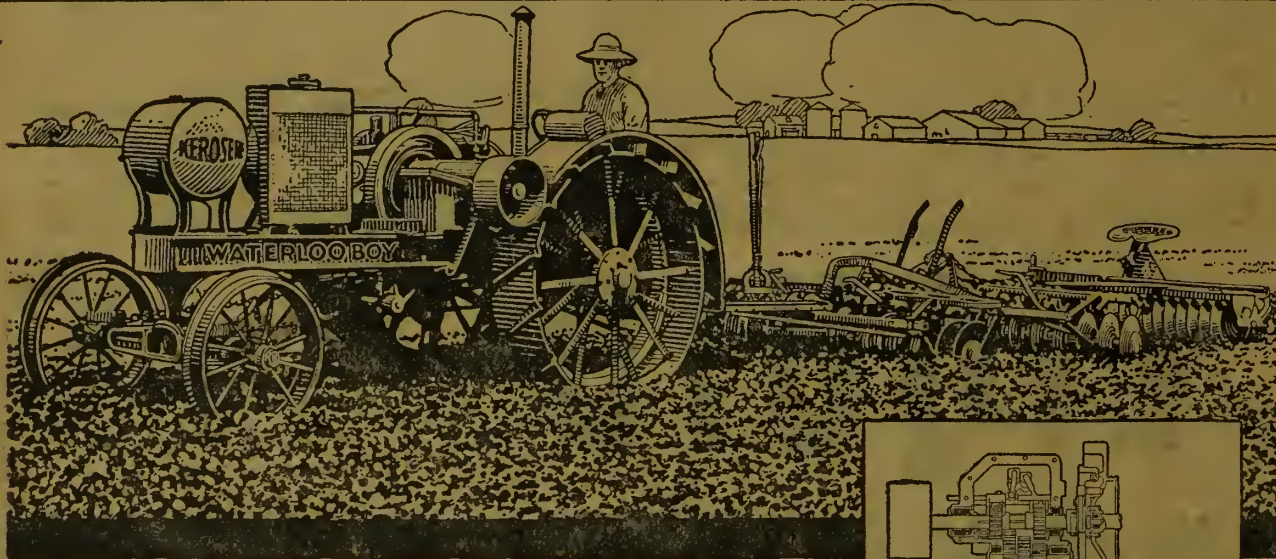
Irrigation is necessary for at least eight months out of 12, and a commercial fertilizer, sulphate of ammonia, is applied. As a rule, however, the volcanic soil in which the lemon groves flourish is of almost inexhaustible fertility. Three crops of lemons are produced yearly—the first in October, the second in February; the third, or summer crop, is being gathered at the present time (May 15), and 300,000 cases are now packed ready for shipment at the two ports of Palermo and Messina. The returns from lemon growing, with the three abundant yields per year, are sufficient to maintain in certain favored localities near the base of Mount Etna an agricultural population of at least 1,000 to the square mile.

Other Exports

Citrate of lime is freely exported to the United States, the quantities exported amounting to 2,206 metric tons out of a total of 3,458 metric tons. This commodity is nothing more than crude lemon juice preserved in lime; it requires a complex and expensive operation to transform citrate of lime into citric acid. At present there are two citric acid factories operating in Italy; one at Casale in Lombardy and the other in Palermo, Sicily, while a third is in course of construction at Messina. The cost of one of these citric acid plants at the present high prices for construction material is not less than \$1,000,000.

The director of the Camera Agrumaria estimates that 3,000 large casks of 400 kilos each of lemon peel in brine will be exported to the United States during the current year to be used in the making of marmalade. Of the 8,736 metric tons of lemon peel which Italy exported during 1919, 1,087 metric tons were shipped to the United States. Much more important exportations of lemon peel are made to England, which also takes heavy consignments of oranges. Shipments of oranges are also being resumed to Germany, consignments being about equally divided between vessel shipments to Hamburg and Bremen and railway shipments to points in south Germany. It has been stated that a single German concern in Hamburg has recently purchased 300 carloads of cull lemons from Messina. An important by-product of the lemon industry is the oil derived from lemon peel, of which 313 tons were exported to the United States in 1919 out of a total exportation of 758 tons.

The Almond Growers Exchange estimates almond crop from old acreage at only 50 per cent of last year's, tonnage from new plantings uncertain as yet; I. X. L., Ne Plus Ultra and Peerless are especially short.



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The Waterloo Boy Tractor is equipped with heavy-duty roller bearings. Friction is reduced to the minimum. Engine efficiency is increased. Maximum power is delivered at drawbar and belt.

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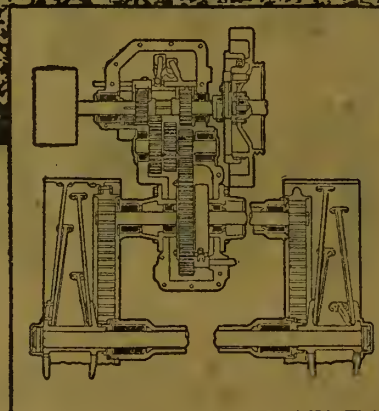
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Eleven Hyatt roller bearings are used on the Waterloo Boy. Three are on the engine extension shaft which operates the belt pulley, and carries the high and low speed gears. Two are on the intermediate shaft, whose gears transmit tractive power to the differential. Four are on the differential shafts, which drive the tractor, and two on the rear axle, carrying the rear weight of the outfit. These particular bearings have an established reputation for their special ability to reduce friction and conserve power.

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We have a booklet describing the Waterloo Boy fully. You will want to read it. Address John Deere, Moline, Illinois, and ask for booklet WB-7.



The small shaded portions in the above illustration show the exact location of the heavy-duty Hyatt bearings on the Waterloo Boy. They reduce friction, thus giving maximum drawbar and belt power. All the gears shown above are enclosed in a dust-proof case, and run in oil.

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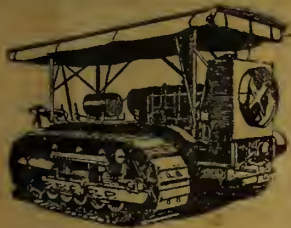
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TOP WORKING OLD ORCHARDS

The writer recently spent a half day with Farm Adviser Hodgson in the Chatsworth end of the San Fernando Valley, where he was putting in sample buds and grafts on many kinds of trees. The work was out of season for some trees, but those interested wished to see the work done, that they might know the proper methods when the trees were in receptive condition.

Other orchards were examined for various ills or to observe condition of trees and crops. One of these was the apricot orchard of W. P. Parmentier, the owner of which said: "I came from four brick walls in a big city and knew nothing of fruit trees. One man called and told me how I should prune and treat my trees, very much as I am now treating them. Just eight others said this man was crazy, so I took their advice, believing in majority rule.

"My trees were 'deck pruned,' simply flattened on top, and I got no fruit. Last year I heard of the new long pruning and saw it demonstrated. I recognized then the method suggested by my first adviser and now feel certain the eight men were crazy instead of the one. For last year I pruned rationally and now have a fair crop and can see where next year I should have a large one."

On these trees last year's spurs largely died, believed to be partially due to lack of water, for although it is but ten feet to water, the trees are but seven years old, the soil sandy and free and the root system has not yet reached soil perennially moist.

Mr. Hodgson gave some budding and grafting demonstrations on the old Johnson ranch, occupied by a family of that name for the past 40 years. He said: "Budding is done by inserting single buds underneath the bark of the tree to be changed or worked over, but is not much used except on young trees before the bearing age. It may generally be done whenever the bark will peel and fairly dormant buds may be had. This is in early spring or late summer and is the method practiced in plant nurseries. But for topworking old trees cleft grafting is the usual method, splitting the sawed off branches, inserting one or more wedge shaped scions and waxing over the whole exposed area. With walnuts and some other trees budding is not practiced, even with small trees, but they are whip grafted. Trees girdled by gophers or from other causes may only be saved by bridge grafting." Mr. Hodgson then showed his audience on both orange and apple trees just how the work should be done.—E. B.

JAMAICA ORANGE OIL

The oil of orange industry began to assume importance in Jamaica from 1908 onward after the industry had been temporarily ruined by the earthquake in Sicily, previously the largest producer of essence of citron and orange.

To extract the oil of oranges in Jamaica a shallow copper vessel is used, which is tinned on the inside and furnished with one inch copper nails fixed perpendicularly to the surface of the vessel. At the bottom of the vessel is a hollow in which the oil is collected. The vessel is held between the knees and an orange is rolled on the points, pressing slightly with the open hand; the points rupture the oil cells and the oil flows down into the hollow. The oil is afterwards filtered through a cloth. As the oil obtained in this way often contains a little orange juice and mucilage, it is allowed to stand, then decanted off and filtered. Attempts have been made to devise a mechanical process of extraction, but without success. The method described above requires much care and practice, as the oil cells only should be broken and the points should not penetrate into the orange. The oranges should not be completely ripe or the oil will be too dark colored. The oranges should be gathered and treated in the early morning, as the yield decreases when the fruit is gathered during the hot part of the day.

Lemons have not persistently held down to low prices in the past ten years as they have in the recent two weeks. Best of fruit hardly brings picking, packing and shipping expense.

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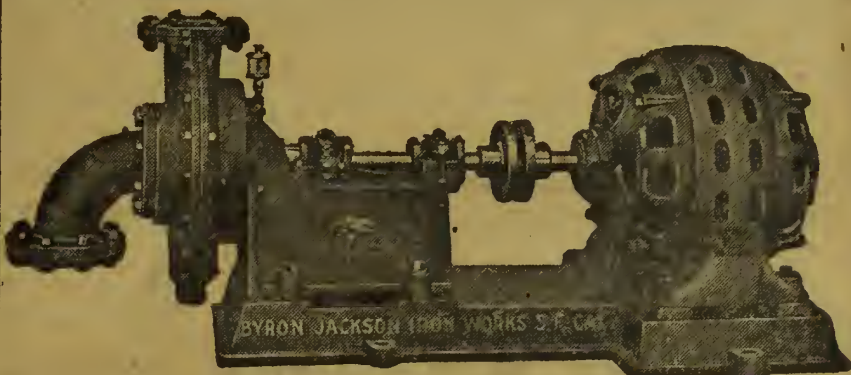
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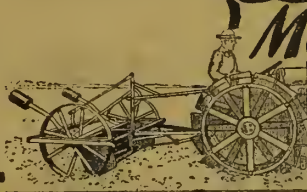
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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

"Curly Leaf"

What is the cause of orange and lemon trees having curly leaves similar to the curly leaf of the peach tree?—Subscriber, Los Altos.

The answer to this question depends upon the form of curl leaf. One type of curling of leaves near the tips, and usually of the young growth, is caused by aphids. These never affect the old and matured leaves. Another form of curl leaf seems to be physiological, or at least there has been discovered no definite cause such as fungous trouble. In this form of curl leaf all the leaves on the branch are usually affected. For this there is no remedy.

Measuring Hay in the Stack

Please give me a rule for measuring hay in the stack.—Subscriber, Terra Bella.

Here is a rule formerly given in the Cultivator which gives opportunity to form fairly close estimate as to quantity of hay in a stack. It must be borne in mind that in measuring hay in the stack or in the barn the time of settling and character of the hay must be considered in reaching any conclusion. At best it is a matter of good judgment. The rule is:

In the measurement of hay there are two points to be considered. These are the number of cubic feet required to make one ton and the method of determining the number of cubic feet in a stack. The following table gives the number of cubic feet required to make one ton of alfalfa at various seasons of settling, these figures being

OAKLAND LIVESTOCK SHOW IS OFF

Late advices are to the effect that the livestock show planned for Oakland has been abandoned owing to the lack of interest and support manifested by the Oakland business interests. For a time it appeared that the show was to become a fact, and the livestock industry of the state was preparing to support the event in every way possible. It is quite certain that had the show been held it would have attracted one of the strongest exhibits ever made in this state.

It seems a great pity that the commercial interests of the Bay region view the proposition of a livestock show with such shortsighted vision. It is a fact capable of ample demonstration that a properly organized and conducted livestock show can be made a great asset to the community sponsoring it. Such shows are primarily educational institutions that go far toward stimulating the production of a more profitable type of livestock. With better livestock comes greater prosperity to the individual engaged in the production, and his prosperity measures, to a very marked degree, the prosperity of the cities. A livestock show is not promoted by the breeders for the one purpose of exhibiting their stock in competition with fellow breeders for the pleasure of winning prizes. Such shows are held with the idea of spreading the doctrine of more efficient methods of production. The commercial interests of Oakland and San Francisco have frittered away a splendid opportunity to stimulate more efficient and economical production in the territory counted as tributary to them. They have rebuffed the producers to whom they are crying for more and cheaper food. They have, in effect, said: "We are in no way interested in your business—you can paddle your own canoes." To all of which the livestock men can reply: "So be it. That is just what we will do. But when decreased production brings about higher food costs, don't come around with a lot of patronizing bunk and tell us how important our business is and that the consuming public regards us as the greatest of all public benefactors, and won't we please hurry up and raise a lot more cattle, hogs and sheep so prices will come down. Don't come to us with that line of chatter—else we might be so rude as to laugh."

Some day times will change. Some day the two Bay cities will have it made painfully plain to them that their interests and those of the big farming and livestock regions are identical and that the progress of each is dependent upon the other. When that day comes a big livestock show will come into existence. Los Angeles and Portland have seen the light and each city has the friendly and active interest of the livestock fraternity.

If aphids is the cause, and it usually shows in the work of the insect, such as smut and skins of departed aphids, then prevention of other leaves curling is secured by eradicating the pest. Tobacco extract or distillate emulsion sprays are effective.

Johnson Grass

How can I best destroy Johnson grass that has a good stand over a 15 acre walnut orchard?—Subscriber, Whittier.

Clean culture is the best way of eradicating any of these weed pests. Where the pest is thoroughly established the first time over, of course, will be expensive, but be sure and cut off the tops, and by repeated effort in this particular, so as to prevent the elaboration of the sap and the formation of footage at the roots, the vitality of the plant is affected and its eradication made comparatively easy.

Spray for Cabbage

Please tell me what spray to use on my cabbage.—Y. Yamoto.

The spray required for any crop depends upon the particular pest attacking it. If desired to treat for aphids, tobacco dust alone will be sufficient, but any of the weaker sprays will accomplish the death of the pest. Especially good is the ordinary kerosene emulsion to which nicotine sulphate is added, one part of the sulphate to every 1,500 parts of the emulsion. For cabbage worm use fairly strong arsenical spray. Never use this spray, however, after cabbage is half grown, because of the danger of poisoning humans. A safe spray is white hellebore, though it is not so effective

accepted as fair amounts to allow for a ton:

Number of days in stack	Number of cubic feet per ton.
30	560
60	540
90	512
120	485
Late winter	450

Native hay packs more closely, the usual figure being 422 cubic feet for one ton in a well settled stack.

There are three general methods of arriving at the number of cubic feet in the stack. All three methods will require the width, length and overmeasurements. The latter is the distance from the ground on one side straight over the top to the ground on the other side. Where stacks are irregular, it is best to secure a number of measurements for width and length and the overmeasurement, and use the average.

Rule 1. One-fourth of the "over" multiplied by the width, then multiplied by the length and divided by the required number of cubic feet to make one ton. This rule gives accurate figures on small, squat stacks when the width is from one-third to one-half of the "over."

Last fall the experiment station bought 98.55 tons by the use of this rule, and when weighed out it weighed 98.18 tons.

Government rule—Width plus "over" divided by four and squared, then multiplied by length and divided by the number of cubic feet required to make one ton. This rule is satisfactory for large tall stacks of 25 to 45 tons, and favors the seller with ordinary small squat stacks.—T. E. Leiper, Colorado Agricultural College.

TILLY ALCARTRA

HAS BEEN BRED TO

Sir Pietertje Ormsby Mercedes 43d

HAS BEEN BRED TO

Miss Valley Mead De Kol Walker

TOYON FARM ASSOCIATION

Mills Building, San Francisco

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Saturday, August 14, 1920

At Bastanchury Ranch, La Habra. Big free dinner and public sale of 30 bred Berkshire sows and gilts. Berkshires have proven the most profitable hog for the farmer to raise—they are market toppers.

Sale held by the

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We have ten of these big senior yearling daughters of old SUPERBA, all bred for September and October litters to our big boar Fortuna Bob; and they are going to sell. Start right and stay right. Address W. H. ROUGH at ARLINGTON, CAL., or visit the ranch

Veterinary

Removing Foxtail From Cow's Eye

In the veterinary column of the July 10 Cultivator a Dorris subscriber inquired about the eye trouble of a cow and as the description is the same as that in a puppy I have, I thought perhaps my experience might help. The puppy had a very bad eye that appeared to be rotting out, and at times large quantities of pus would work out and the eye appeared to be half gone. Had looked for foxtail but found nothing until a friend told me to put a pinch of sugar in the eye. I did so and almost instantly the foxtail showed up and I got it out and the eye was sound and well in a few days. Since then I have used a few grains of sugar in the eyes of baby chicks and have never failed to get the barley beard or whatever it was. If the Dorris subscriber will throw a handful of sugar in the cow's eye, I believe it will do the work. Anyway, it is worth a trial. I have had help through your paper and like to help others, if I can.

Scours in Horse

Horse has diarrhoea which persists in spite of change in feed. Has continued for more than six months. Please give treatment.—Subscriber.

The condition may be due to different causes. Some horses are predisposed to scour and in cases of this kind it is rather difficult to prescribe treatment. It may also exist as a complication of other diseases. One common cause is faulty condition of the teeth and another is an infection in the intestinal tract. Faulty feed may also cause this condition by irritating the intestines. It is probably well to start the treatment by administering about a quart of raw linseed oil. Somewhat less than the quart will probably be administered if the operator is not skilled. If the animal is not receiving good feed, it should be changed. The horse's teeth should be looked after by a veterinarian and if found faulty they should be floated. In case the trouble persists after the

above mentioned treatment and you are sure the horse is being properly fed and watered, you may administer the following: Wheat flour in water, or starch water. It is well to consult a veterinarian before attempting to administer any drugs.

Fails to Breed

Cow 12 years old I expected would freshen in June now proves not to be with calf. Has been milking year and a half. Neighbors think she needs treatment for barrenness. Will it pay to keep her and try to breed? She will be dry for several months and feed is very high though I grow most of my own. She was a fine milker.—Subscriber, West Berkeley.

When you find a cow 12 years old and barren probably the best thing to do is to fatten her and send her to the butcher, unless she is an exceptionally good animal. The cost of feed at the present time is quite high and unless you have especially cheap pasture the cost of keeping her over would be impractical. There is no doubt that she would need some treatment for the barrenness and you will have to consult a veterinarian and have him administer such treatment in case you desire to keep her.

Bloody Milk

Our heifer has been giving just a trace of bloody milk out of the left front teat. This one is a little longer than others and there seems to be something lumpy near the end. Does not give as much milk, is harder to milk and takes longer than the others. What is the matter and how can we remedy the trouble?—Subscriber, Pomona.

Bloody milk is often caused by a bruise to some portion of the udder or teat. The bruise may also have caused the lump which you mentioned. Sometimes when a cow first freshens and the udder is somewhat distended, blood vessels may be ruptured which will continue to give some trouble. It is possible that a clot of casein may have been formed in the milk ducts, pressed clear of its liquid, and then become lodged in the teat. If the

condition is found to be a bruise, massaging with sweet oil and turpentine and also the application of hot and cold cloths applied intermittently will probably relieve it. If the teat is blocked by casein or a foreign substance it can be removed with a teat dilator. This operation, however, should be performed by a veterinarian or someone skilled in the use of such an instrument, as infection inside the teat or udder may be caused very easily in such practice. If the trouble does not clear up under the first mentioned treatment it would be best to consult a veterinarian.

Ringbone

Please give me information regarding the cause and remedy for ringbone. I have a young horse seriously lame. He has been running in pasture since September. He became lame at that time, but I attributed it to tender feet. Lately a swelling and tenderness has developed right under ankle joint. Could it be ringbone? It is below ankle joint on back of leg, between angle joint and hoof.

From your letter it would seem that ringbone is a possible cause of the lameness. Ringbone may develop from several causes, usually, however, a bruise of some kind is responsible for the trouble. The growth ordinarily runs clear around the foot just above the coronet in the form of a ring. Some horses are predisposed toward ringbone through heredity by reason of their conformation. A straight pastern not allowing much "give" when the horse walks will cause soreness to develop in the foot from which irritation ringbone may develop. Sprains may cause it as well as bruises. The best treatment I can recommend for such a condition is a blister. This blister may be made as follows: One ounce Spanish Fly (Cantharidin) powdered, one-half ounce red iodide of mercury, eight ounces vaseline or lard. These substances should be well mixed and rubbed on to the affected part with a rough stone or corncob for four or five minutes. In 24 hours wash this material off with soap and water

and apply a grease such as vaseline or lard. This last application of grease will prevent further irritation and will cause the hair to grow up over the blistered part normally.—G. E. G.



Sulphur

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand and Fleur de Soufre, packed in double

sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

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Third Annual Sale BUTTE CITY RANCH

Owned by W. P. Dwyer and W. S. Guilford

Butte City, Cal., Wednesday, Aug. 11, 1920

60 Registered Shorthorns

105 Registered Shropshire Sheep

20 Registered Berkshires

10 Shetland Ponies

25 of the Registered Shorthorns are consigned by O. L. Raper, Glenn, Cal.

owner of the well known sire, Crescent Dale

THE SHORTHORNS—Will include about 15 good cows with calves at foot, all of breeding age in calf to Victor Stamford, Herman the Great, or Crescent Dale. The offering includes daughters of Hallwood Flash, Vermillion, Sir Type, Crescent Dale, Victor Stamford, Cedarlawn's Best, Victor Stamp, Count Glory, Hallwood Villager, and others of substantial and popular breeding. There will also be a most attractive lot of heifers, both bred and open, and a limited number of good young bulls.

THE SHROPSHIRE—Butte City Ranch has become justly famous for the quality of its registered Shropshires, a flock developed largely from foundation of Broughton, Wardwell and Cavendish breeding, and the present offering will consist of ram and ewe lambs, and breeding ewes that both breeders and beginners can use profitably.

The writer has been familiar with the operations carried on at Butte City Ranch for the last few years and has noted the character of the livestock distributed in the annual sales. There is no hesitation in urging attendance at the forthcoming sale upon any man who is interested in securing livestock, of any of the breeds offered, that has great utility value. The Shorthorns are particularly suited to the man who plans a modest investment and who depends upon his purchases to make him money. The Butte City Ranch Shropshire flock can be rated as one of the best Western flocks. The Berkshires are well bred and have been developed along lines that Guilford is convinced will enable them to make good under average conditions. The ponies are up to the usual standard and the mares will carry the service of General Boggs, perhaps the best representative of the breed owned in California. A visit to the sale will afford an opportunity to know one of the most interesting ranches in Northern California—a ranch that pure bred livestock has literally made.

(Signed) R. P. ROYCE, Livestock Editor, California Cultivator.

Sale Catalog is Free on Request. Write for a Copy

Management

California Breeders Sales and Pedigree Company

J. M. Henderson, Pres.; C. L. Hughes, Sales Manager.

Sacramento, California

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. Geo. W. Bell, Tulare

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Dispersal of a Choice Herd

50--Registered Holsteins--50

State Fairgrounds Sacramento, Cal.
Thursday, August 26, at 10 a.m.



Some Heifer Calves in the Sale

This is the high class herd owned by Wm. M. Bray, Klamath Falls, Ore., and the necessity for selling arises because the owner's large lumber interests call him to another part of the country.

THE FEMALES

There are 47 females in the sale, the oldest a 7 year old cow with a record above 31 lbs. butter in 7 days as a 4 year old, one four year old, and all of the balance are two and three year olds, bred heifers, and heifer calves. They include several granddaughters of the former world's record milk cow Margie Newman, granddaughters of King of the Pontiacs and King Korndyke Sadie Vale, and a large number are out of dams with records up to over 32 pounds butter in 7 days. All the bred females are in calf to the herd sire

Colony Zarilda Newman

who is by Aaggie Cornucopia Newman, proven son of Margie Newman. The dam of Colony Zarilda Newman is the famous Canadian cow Zarilda Clothilde 3d De Kol, the only cow besides Tilly Alcartra that has produced over 33,000 pounds milk in one year, and she also made 1194 lbs. butter. This great sire is in the sale and should bring out a large number of breeders who can use him. He is just past 5 years old, a splendid individual, a quick, sure breeder, and right in every way. It is only in a dispersal such as this that this bull would be sold.

This entire herd, over six months old, has passed two federal tests without a reactor, and most of the foundation stock originally came from a federal accredited herd.

Every animal positively guaranteed to be a breeder; every animal over six months old tuberculin tested and sold subject to retest by the buyer.

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BERYLWOOD REGISTERED HOLSTEINS

Up-to-date Breeding — Up-to-date Equipment — Up-to-date Methods

SIRE IN SERVICE

The sire selected for service for foundation blood at Berylwood is King Segis Pauline Alcartra 282440

grandson of the famous \$50,000 sire King Segis Pontiac Alcartra. Every dam in pedigree of this promising young sire, except one, is A. R. O. His dam is a daughter of a 36-lb. son of the great Rag Apple Korndyke.

Some Leading Females at Berylwood

An A-1 foundation cow here is the 3-year-old Queen Sadie Vale Veeman Karlay 382920—a daughter of the great King Korndyke Sadie Vale 27th, backed by numerous 40-lb. records. This fine young cow has just completed a seven-day record of 30.11 lbs. butter from 547.4 lbs. of milk and is still going along strong. She has yearling daughter by King Marco Alcartra, and likewise a fine bull calf by the herd bull, 14 nearest dams of this young bull averaging 28.83. This most promising young matron of the herd is now booked to be bred to service of King Korndyke Pontiac 20th.

An outstanding show heifer, and one of our highly valued females, is Fay Tritonia Hengerveld Walker 411140—noted as an A. R. O. daughter of Prince Riverside Walker. Every dam in her pedigree is A. R. O. At 2 years she made in 7 days 348.90 lbs. milk and 17.11 lbs. butter. When she freshens will be put on yearly test. She will be seen at the shows this fall.

Summer Night of Sunnyside 385410 is a 4-year-old daughter of Judge Hengerveld De Kol. She has made a record in 7 days from two teats only of 395.5 lbs. milk and 15.2 lbs. butter. Has great young bull calf got by our herd sire.

Emma Palmyre Longfield is a very promising young daughter of Sir Aaggie Longfield. She is every inch a show cow, and her 2-months-old bull calf by herd sire is one of our fine sale prospects. His dam is to go on yearly test at next freshening.

Miss Bracelet Fobes Korndyke 446085 at 2 years and 6 months, six months after calving, made in 7 days from 389 lbs. milk 12.4 lbs. butter. This young daughter of Mutual Fobes Longfield De Kol will be an excellent yearly prospect when she freshens again.

A Business Proposition

The Berylwood management is undertaking to build up a great herd of registered Holstein cattle, primarily if not purely in the interest of dairying in the state of California. Incidentally we shall have a few high class young bulls to offer the buying public. We cordially invite inspection at all times. Visitors always welcome.

BERYLWOOD INVESTMENT CO.

J. W. Snodgrass, Mgr.

Hueneme, Ventura Co., Cal.

THE NEED OF A BETTER LIVE-STOCK PROGRAM

(Continued from Page 123.)

cations as any other man—except, perhaps, he is a hit more patient—he neither asks nor expects anything other than a fair return for his labor and investment. Really, what would suit him best is to be assured of a stable, even market representing a fair profit. He would like nothing better than to feel reasonably certain that his market from season to season and year to year would be such that he could plan ahead with some degree of assurance. And undoubtedly such a situation would best suit the public.

Admitting the importance of stability in livestock production, it is no small matter to control the factors that make for stabilization. Stability depends upon a balance between production and demand, and such balance can best be maintained under conditions where the producer is assured a fair profit and the cost price to the consumer is such that he can buy freely and in such quantities as to at all times take care of the supply.

In working to that basis both parties—the producer and consumer—must be willing to meet on common ground and to exert equal strength against the middlemen in an effort to prevent in the future such conditions as we herewith cite. Since 1914 the cost of producing meat, milk and wool has constantly increased. Likewise has the curvy of prices to the consumer shown an almost constant upward trend. Yet the prices paid the producer have shown marked fluctuations. Indeed, there is evidence to show that the periods of loss to the producer have been of greater extent than the periods of profit. An easy case in point is that of pork. Since the middle of 1917 there has been but one time, a period during the first half of 1919, when a profit could be claimed for the pork producer. During the last half of 1919, and to the present time, the pork producers have, according to a 13 year chart prepared by Wallace's Farmer, suffered the heaviest loss recorded in 13 years. During that time wholesale prices have fluctuated but a trifle, and retail prices have failed to show any tendency to follow the downward curve of prices paid for pork on foot. Bacon, ham and pork chops cost the consumer as much, or more, than during the high periods in 1917 and 1919. According to the chart referred to, the profit to the pork producer for a short time in 1917 went as high as \$3 per hundred and at the peak of the profit period in 1919 around \$2.75 per hundred was recorded. During the whole year of 1918 hogs were marketed at a loss on the Chicago market, the greatest loss touching near \$6 per hundred, a point almost approached on the 1920 June market. Now, a fluctuation from a profit point of around \$2.75 to a loss of over \$5 per hundred represents a spread of near \$8. We do not have the actual figures at hand covering the retail prices, but we leave it to our readers as to whether their butcher shop bill for pork products has shown a similar cut.

The steer chart prepared by the same Iowa paper as referred to above shows an almost identical situation during the last 13 years. A period of profit touching as high as \$22 or \$23 per steer was recorded in 1917 and again in early 1919. Since the forepart of 1919 until the present time steers at Chicago have fluctuated on the loss side until Wallace's Farmer charges that steers on the June market lost the feeders as much as \$56.40 per head.

Butter prices charted show but one period of profit, and that period very limited, in 1919, since 1916.

In considering the above statements it should be kept in mind that the figures cover average production, a fact that is of tremendous importance to the public. If the average producer is not making a profit it is certain that production will be restricted through liquidation until a point is reached where prices will be forced to a profit point through the law of supply and demand.

Such a state of affairs governing any primary business is obviously unsatisfactory to all concerned. Somehow we all must work toward a stabilized price era. How such stabilization can be accomplished is a problem that cannot be solved in a short time. Years of careful effort on the

part of producers, consumers and distributors will be required. But as a starting point several suggestions can be considered.

The consuming public must come to understand the problems of the producer. The consumer must realize that meat, milk and wool represent certain definite costs to the producer that can in a measure be expressed in terms representing the value of feed, labor, investment and risk. The public must come to appreciate that raw food production is as much business as any commercial enterprise and that such being the case, the producer is entitled to the same consideration as any other business man. He must be accorded reasonable financial credit to conduct his business, and because his operations necessarily are dependent on long seasons, such credit as is made available should be on a long term basis. The evil of short credit is tremendous, and the public will never know the losses that the livestock producer has suffered by reason of short loans that have been called at critical times. That menace should be removed. It is also to the interest of the consumer that the livestock producer be given the benefits of an uncontrolled market. The distributor must be satisfied with legitimate profits, else he can rest assured that a way will be found to eliminate him. As long as any distributing agency conducts its business efficiently and legitimately, neither the producer nor consumer will object. There are other suggestions that could be offered, but the writer is more concerned with the problems of the producer.

If the producer will glance at the reproduced charts, he will be struck with the fact that over a period of years his business is subject to quite regular but sometimes violent fluctuations. It has been true in the past and it is likely to continue for a number of years to come. The shrewd business producer should bear that



Selling Purebred Holstein Cattle is Profitable

Do you realize that purebred Holstein calves bring a very liberal price? Every day this breed is becoming more and more known. Breeders are telling the public about the value of the milk. The demand today for purebred Holsteins is greater than the supply. Here is opportunity for you to get rich. Hundreds of calves every year are sold from \$100 to \$200 apiece. With plenty of food and ordinary care these cattle will average from 350 to 500 lbs. of butter per year. Can you see opportunity here? Remember, "Holsteins are the most profitable cattle."

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8000 ft.	6-inch Riveted	16 gauge
700 ft.	8-inch Riveted	16 gauge
5000 ft.	12-inch Riveted	12 gauge
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10,000 feet	light wrought iron 8-inch pipe with cast iron collars.	

All above pipe thoroughly overhauled and inspected and ready for immediate use.

We also have large quantity standard pipe and screw casing, pressure tested and guaranteed.

Don't delay—write for our prices on your pipe requirements today.

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Calved Nov. 26, 1919 Priced to Sell
Write Today
Grant A. Brown El Monte, Cal.

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The Livestock Auctioneers

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Clark, Hunter & Clark Modesto, Cal.

fact in mind and order his business so that he can take advantage of such conditions.

In preparing to take such advantage there is a valuable and sound viewpoint to catch and hold. First, he is engaged in a fundamental business, a business that will endure. Second, the average man engaged in livestock production is in no way different from the average man engaged in any other line of effort—if he makes a profit it is small. The livestock man who makes a profit, like the man in any other industry, is the man who sticks to his business year in and year out and who has raised himself to a point above the average—has become more efficient than the average.

While the average livestock man has the same right as any other average man to demand conditions that will make it possible for him to register a profit, he has no greater right. If the livestock producers are to go before the public with demands that will enable them to secure a just price for their products, it is well to bear in mind that the public has an equal right to demand efficiency at the hands of the producer. If the producer is to demand stabilized markets, fair prices and satisfactory credit, the public has the right to expect that the producer will exert himself to employ the most efficient methods of production.

Third. Notwithstanding the fact that the charts indicate that on the average the livestock producers have not been making a reasonable profit, we know that during the years there are men who have made money in the livestock business. Such men are in every community and they have demonstrated their ability. Inquiry as to how these men have succeeded reveals no secret. Nine times out of ten they are men who have applied modern methods to their business. They are men who have studied their business. They know that there is a difference in livestock. They have purchased or bred a class of livestock that is capable of making more efficient utilization of feed. They are the men who, through the use of better hulls and hoars, are turning off livestock that weigh more and milk more than the common run. If John Jones has a herd of cows that averages 400 pounds of fat a year and Jim Smith has a herd that averages 150 pounds, which man is in a position to go before the public and demand a fair price? The public cannot accuse Jones of being inefficient; but what can Smith say?

The public cannot be expected to put a premium on or have patience with inefficiency.

The writer trusts that he will not be charged with failing to appreciate the present situation, but because he believes so strongly that a change is bound to come wherein a more satisfactory condition will prevail, he wants to urge that the livestock interests as a whole begin to set their house in order so that when the showdown comes the consuming public cannot make a charge of inefficiency against the rank and file of the livestock men.

Let us recognize the fact that we are facing a new set of conditions; that our labor, feed bills and investment will probably never get back to a pre-war basis. In other words, let us not try to meet 1920 and future conditions with 1914 methods. Let us cooperate in every way possible to better our business. Let us modernize our methods along with our demands for fair profits.

SONOMA TO OPEN FAIR CIRCUIT

The 1920 fair season will be opened August 23 at Santa Rosa with the holding of the Sonoma County fair. President J. Francis O'Connor and Secretary H. J. Walters report that all preparations have been completed and there is every indication of heavy entries in all departments. Sonoma County has one of the most complete and attractive fair grounds in the state, but for the last few years no fair has been held. The discontinuance of the annual fair left a distinct vacancy in the agricultural activities of the county, and last spring, a plan for rejuvenating the fair association was started. An effective plan of financing was developed and a most progressive set of officers elected and given orders to put the fair across in the most approved manner. The grounds have been improved, the track put in shape and the grand stand enlarged.

Every branch of agricultural production has been provided for with generous premiums, and a great many special features not usually found at county fairs have been introduced. The fair will continue a full week and the management declares there will not be a dull day. A complete showing of livestock from several counties is assured. There will be four days of exceptionally good racing, one of automobile racing and one of motorcycle and speed events. A full program of night horse show classes has been provided. There will also be two days of rodeo stunts. During the week there will be staged a dog show, a tractor show, an apple show and an egg show, in addition to the regular horticultural classes.

J. I. Thompson, formerly with the college of agriculture, will judge swine, and Senator Ben F. Rush of Suisun will place the beef cattle classes.

THIRTY POUND RECORD AT BERYLWOOD

Queen Sadie Vale Veeman Karlay, the three year old daughter of King Korndyke Sadie Vale 27th, owned by the Berylwood Investment Company, Hueneme, has just completed a record of 30.11 pounds butter from 547.4 pounds of milk in seven days. This new record makes her the first thirty pound daughter of her sire. Manager

Snodgrass states that she is still going strong and that she will be carried on yearly test. It is planned by Mr. Snodgrass to carry all of their cows on yearly test and at the same time to make use of the seven day and 30 day tests. It is of interest to know that in the Berylwood herd is a yearling daughter of Queen Sadie Vale Veeman Karlay by King Marco Alcartra, and a promising son sired by their herd bull, King Segis Pauline Alcartra. She will soon be bred to the \$12,000 King Korndyke Pontiac 20th, owned by Burr Farm, Los Angeles. It is the intention of the owners of Berylwood herd to make it one of the strong herds of this state, and already a very fine start has been made.

THE LAMB DISPERSAL SALE

By J. P. Bennett

The dispersion sale of Duroc-Jersey hogs held by Elmer Lamb, Ceres, on Wednesday, July 21, was not so well attended nor so well supported as it should have been. Owing to conditions the entire offering was not sold.

The top of the sale was the great sow Mary Jane Pathfinder, going to C. O. Talbot, Turlock, at \$1,000. She was the bargain of the sale, and to show the value of such a sow six of her pigs of various ages were sold for an average of close to \$220 each.

The good herd boar Orion Cherry Pathfinder, a son of Mary Jane Path-

finder, went to Ordway & Snyder Hughson, at \$500, a very conservative figure for such a promising young boar.

Among the heaviest buyers were H. A. Stelmerjohan, Turlock; Allen Thompson, Tulare; E. G. Stone, Modesto; and W. E. Way, Modesto. The animals sold brought an average of \$152.50.

Col. C. N. Clark, Modesto, assisted by Cols. Hunter and C. N. Clark Jr., was on the block and handled the sale in a very able manner.

Following is a list of representative sales:

1. Ordway & Snyder, Hughson, \$500.
2. W. E. Way, Modesto, \$150.
3. C. E. Talbot, Turlock, \$1,000.
4. H. A. Stelmerjohan, Turlock, \$220.
5. H. E. Cornwell, Modesto, \$80.
6. H. A. Stelmerjohan, \$85.
7. V. F. Dolcini, Davis, \$100.
8. E. G. Stone, Modesto, \$65.
9. E. G. Stone, \$60.
10. W. E. Way, \$205.
11. E. G. Stone, \$65.
12. W. E. Smith, Hughson, \$89.
13. E. G. Stone, \$75.
14. W. S. Parker, Modesto, \$85.
15. W. S. Parker, Modesto, \$75.
16. C. D. Hayworth, Modesto, \$80.
17. R. J. Johan, Atwater, \$75.
18. W. W. Winn, Modesto, \$65.
19. H. A. Stelmerjohan, \$150.
20. H. E. Stone, Modesto, \$105.
21. H. A. Stelmerjohan, \$150.
22. Allen Thompson, Tulare, \$125.
23. Witherow & Stafford, Live Oak, \$95.
24. C. Busingdal, Patterson, \$100.
25. C. E. Talbot, \$145.

Stanislaus County will make a \$2,000 exhibit at the state fair.

To the Dairymen and Stockmen of California:

THE future holds bright prospects for the man who has the grit and ability to stay in the dairy business in this state.

The world is crying for beef and dairy products. The demand exceeds the supply. Higher prices are in sight. The business dairyman will be shrewd enough to grasp this opportunity.

The big problem now, is how to reduce feeding costs, but where there's a will there's a way. It can be done.

Confronted by a general hay shortage and unprecedented prices for hay, it behooves every dairyman to conserve to the utmost the available supply and utilize to the fullest extent the feeding value of the entire hay crop.

Therein lies the key to a reduction of feed costs.

Last March the University of Idaho completed a series of feeding tests which proved that chopping alfalfa hay increases its feeding value 25%.

The cattle used in the test, which lasted 100 days, belonged to the Lemp Livestock Company and were fed under a guaranteed spread.

Four groups of cattle were fed four different rations in which long hay was used. Four other groups were fed similar rations in which chopped hay was used.

The test proved that 57 tons of chopped hay were equivalent in feeding value to 75 tons of long hay, a saving of 18 tons, or about 25%. The saving in dollars and cents amounts to \$450, with alfalfa worth \$25 in the stack. It cost only \$1.25 a ton to chop it.

We will be pleased to mail a complete summary of the tests upon request.

The future of the De Laval Dairy Supply Company is inseparably allied with the growth of the Dairy Industry in California and while it is the business of one of our departments to sell machines for chopping hay and filling silos (the Acme Cutter) we feel it our duty to give publicity to these reliable feeding tests, that all dairymen may derive full benefit from them and each apply the results to his own work if he is so disposed.

The cost of the machine is soon recovered in the saving effected by chopping the hay. The Acme is a general purpose feed cutter—a combined silo filler, hay chopper and alfalfa meal machine. Request for description of the Acme Cutter and suggestions for handling chopped hay incurs no obligation.

Yours truly,

De Laval Dairy Supply Co.
61 Beale Street, San Francisco, Cal.



Lendorris Liberty Bond, Skyrocket and Lendorris Liberator

Three good sons of three good sires are our herd boars. We will have a few representatives of our herd on exhibit at the state fair. When in need of choice Poland China breeding stock, write for our prices. You will find them very reasonable.

W. L. Haag and Son Hanford, Cal.



Do You Know?

That The Westerner is a half brother to the sire of Caldwell's Big Bob, Grand Champion at the National Swine Show in 1917.

The Westerner heads a herd of sows that have no superior on the western coast.

Remember our big public sale Sept. 27th. It will be an event in Poland China circles.

ALEX. D. McCARTY RIVERINA FARMS MODESTO, CAL.

THE SEQUOIAN

A yearling Poland China boar of strictly big type breeding that carries the size, stretch and quality so much desired by the breeder and feeder.

Write for prices and information on most anything in the way of breeding stock.

Z. M. Dickey Dinuba, Cal.

The Buckland Herd of Poland Chinas

Breeding of distinction characterizes our herd. Careful personal attention to each individual insures a class of breeding stock which is one of the many reasons for our growing business. Your patronage is solicited.

A. Buckland & Son, R.F.D., Fresno, Cal.

Trewhitt's Big Type Polands

Are the result of careful mating and selection. Size and feeding quality have always been essential features in this herd. Write for prices and information. I can interest you.

W. D. Trewhitt Hanford, Cal.

King's Big Bone Leader

A Grand Champion, and Glant Bob 2nd, a son of last year's Grand Champion, are my herd boars. They are siring a high class of Poland Chinas. Write for prices and information.

Les McCracken Ripon, Cal.

McCune's Quality Herd

of BIG TYPE POLAND CHINAS

The home of Edith Rose, King's Massive Orange and many other noted individuals. A McCune bred Poland China is backed by many generations of the best breeding.

H. D. McCUNE, Lemoore, Calif.

The Get of Model Big Fellow

The Reserve Grand Champion of the last state fair, the strongest Poland show ever held in the state, are the kind to buy. Your correspondence solicited.

J. F. McSwain Merced, Cal.

The Forrestview Herd of Polands

I am now located on my new place near Chico, where I am better prepared than ever to care for my customers. My intention is to raise more and better Poland Chinas in the future.

J. H. Cook Route 4, Chico, Cal.

The Feeding Problem



THE feeder is confronted by a most serious problem and he is bravely trying to solve it. In a word it is this:

How can a dollar's worth of feed be turned into a dollar's worth of beef or pork and leave a reasonable profit to the producer? Can he supplement some of the more expensive feeds with cheaper feeds which will let him by with a little chance for his life? Or, again, can he take the feeds already at hand and make the nutrients more available and more completely assimilable by the animal? Is it possible to use root crops or pumpkins, soiling crops or pasture which through giving succulency secure better appetite and more complete assimilation? Or may feed be cut and thus reduced to a more available form and may we add to this feed stock molasses or other appetizers?

Because of these questions and

eight equal groups were fed on eight different rations for a period of 100 days preceding March 15. The cattle belonged to the Lemp Livestock Company of Boise, and were fed under a guaranteed spread. They were weighed for three successive days at the beginning, and at the end of the period, and the average of the three weighings taken as the designated weight. The general average gain was 1.48 pounds per day. It required an average of 25 pounds of hay to produce one pound of gain.

Hay Consumed

Long hay consumed amounted to 75.75 tons; chopped hay, 71.4 tons; gain on long hay, 6,561.6 pounds; gain on chopped hay, 7,722.6 pounds; difference in favor of chopped hay, 1,161 pounds.

This difference in weight gained is equivalent to 14½ tons of hay. There

SUMMARY OF TEST

Average per Animal	Long Alfalfa	Chopped Alfalfa	Long Hay and Silage	Chopped Hay and Silage	Long Hay and Barley	Chopped Hay and Barley	Long Hay, Silage and Barley	Chopped Hay, Silage and Barley
Av. Initial Weight	1011.00	994.50	996.00	1009.50	1002.00	1014.00	984.00	1018.00
Av. Final Weight	1125.30	1136.70	1113.50	1165.70	1173.30	1187.90	1128.00	1206.60
Av. Daily Gain	1.14	1.42	1.17	1.56	1.72	1.73	1.43	1.88
Daily Ration								
Alfalfa	33.09	31.39	30.97	27.59	33.88	30.40	28.33	29.72
Ensilage .....	.....	.....	13.76	14.02	.....	.....	9.70	10.00
Barley .....	.....	.....	.....	.....	4.76	4.79	3.78	3.91
Feed for 100 Lbs. Gain								
Alfalfa	2898.10	2504.70	2481.20	1766.70	1970.10	1751.40	1975.60	1576.90
Ensilage .....	.....	.....	1096.10	898.10	.....	.....	676.30	442.10
Barley .....	.....	.....	.....	.....	277.00	276.30	263.80	207.70
Daily Waste								
Hay	2.89	1.61	5.44	2.86	4.83	3.65	6.56	3.82
Cost 100 lbs. Gain	\$23.55	\$20.35	\$25.64	\$20.17	\$23.62	\$23.14	\$25.33	\$21.90

many others, solution of which seems equally impossible, which are being asked, we feel there is help for the feeder in the results of a feeding test conducted by the University of Idaho.

Certain it is, the reports of the tests in the table above indicate that cutting of hay adds materially to its feeding value. It has also been claimed that by adding molasses to a feed as low in nutrients as is rice straw, the feeder may at least prolong the life of the animals if not increase their weight.

The summary as given out by the university says but little of the conclusions of those who conducted the test, but the figures are given in full and in such a way as to be enlightening to the stock feeder.

The Tests as Reported by the University

The tests were based on the amount of hay consumed with various rations as compared with the gain in weight of the cattle. In beef cattle the food value of the hay goes into bone and flesh; in mature dairy cattle it maintains life and milk production.

Ninety-six head of stock divided into

were, however 4¼ less tons of cut hay fed during the test, which makes the actual balance in favor of chopped hay equal to 18¾ tons, or 25 per cent, of the amount of long hay consumed. In other words, the gain in weight through the feeding of 75.75 tons of long hay as distributed through the various rations could have been accomplished by using only 57 tons of chopped hay.

Brought Out by the Test

The average daily gain per animal on long hay was 1.14 pounds; on chopped hay, 1.42 pounds. Average daily gains were greater using cut hay in any ration than using long hay in the same ration.

The lowest cost per 100 pounds of gain was made on the cut alfalfa and silage ration.

Cut hay, silage and barley brought its group of stock through in the best condition and was among the three cheapest rations.

On total hay consumption of only 75 tons, the amount of money actually saved by chopping was \$304, figuring alfalfa at the unusually low price of \$16.25 per ton. It cost only \$1.25 per ton to chop it.

Value of Official Dairy Tests

The system of advanced registration has been of great value to breeders of dairy cattle, particularly from a financial standpoint and as an aid in their breeding operations, reports the Missouri college of agriculture. It is profitable financially because a good record not only greatly increases the value of the cow herself and of her offspring, but of all closely related stock as well. Further, it provides authentic information upon which the selection of animals for breeding purposes can intelligently be made, and gives definite proof of improvement that is made through selection and breeding. Official tests also raise the standard of each of the dairy breeds and increase their popularity.

Do you want to cull the boarders? The first discovery after beginning the test will probably be that some of your cows are not paying for their feed and care. This is not a pleasant discovery but it is profitable information. It is not good business to keep a pure bred cow that will not exceed the requirements for admission to the ad-

vanced registry with proper feed and care, nor is it profitable to continue to breed animals of inferior ability.

Do you want to feed your cows more economically? Everyone who has to buy feed at the high prices prevailing is interested in the amount of feed the cows will profitably utilize. With exact milk and fat records more economical feeding according to the requirements of individuals will be made. It is true that many large records are made without regard to feed cost, but a good record can be made economically, since it is well known that the feed eaten above maintenance is the real productive feed for milk production.

Do you want to select your breeding stock intelligently? Improvement in stock of any kind depends upon the careful mating of the best animals. The trained eye can judge the true-ness of breed type and conformation, but the actual productive ability is determined by test alone. The only sure and impartial judges of production are the milk scale and the Babcock tester. Much is said about cows

Lambert's

HEALTH FOR CATTLE

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Scouring Calves,
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A Poultry Food

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and hogs conducted in California
and adjoining states. References:
The leading breeders in the state.
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Bunting's Mission Herefords Are Profitable

They will increase cattle profits
by adding pounds of beef to
every steer sold. For the best
of breeding and individuality
visit my herd and see the kind
that win at the best shows.
Prices reasonable. You'll be
welcome.

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Mission San Jose Cal.

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A few choice young bulls, Big, heavy-
boned husky fellows sired by DON PER-
FECT 2nd, one of the best sires in the
West. Priced right and guaranteed.

H. H. Gable Esparto, Cal.

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Pure Breds—Both Sexes

FOR SALE

Fairview Ranch

L. L. Beal, Proprietor Red Bluff, Cal.

Vaughn's Jones

Is a boar that is siring a high class of
POLAND CHINAS
good enough for the most discriminating
buyer. Come and investigate; can show
you.

A. J. Van Cleef, Riverdale, Cal.

Col. W. C. Lookingbill

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Have now established permanent headquarters at
my new U. & I. Union Stockyards, midway between
Pomona and Ontario. Can thus command a wider
field of rich dairy and swine breeding interests. 25
years' experience buying and selling in the heart
of Iowa. For real service write me at

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THOROUGHPIN
but you can clean them off promptly with

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TRADE-MARK REG. U.S. PAT. OFF.

and you work the horse same time.
Does not blister or remove the
hair. \$2.50 per bottle, delivered.
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the antiseptic liniment for mankind,
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being bred for production. An authen-
tic record of the productive ability of
each animal in the herd means an of-
ficial record. The future productive-
ness of the herd is assured if the se-
lection of the heifers from the best
cows is made on the basis of the of-
ficial test.

Do you want to determine the value
of your bull? Test your herd sire.
You spent considerable time and
money in buying and selecting him,
but do you know whether he is in-
creasing or decreasing the value of
your herd? He is the better half of
the herd if his daughters are better
producers than their dams. If he is
the better half, after you are through
someone else will gladly purchase
him. A bull with known prepotency
is an asset both to your herd and to
the breed which he represents.

Do you want to demonstrate the
merits of your herd? You may know
that your herd is capable of large re-
cords, but buyers are not willing to
pay high prices for the stock on your
"say so." They want to be shown.
There is nothing that will bring such
favorable attention to your herd as a
number of good records. It will dem-
onstrate beyond question the merit of
your herd.

These and many other questions
will be answered if you will begin
official testing in your herd. The re-
sult of testing will be to increase the
selling price of the cows and their off-
spring.

BERKSHIRES TOP THE MARKET

By Bruce S. Bennett

Berkshire breeders have always
maintained the superiority of Berk-
shires as feeding animals. Those who
have been raising and feeding Berk-
shires have been pleased with the
results. W. S. Corsa, a leading Berk-
shire breeder and feeder, recently re-
ceived from Clay, Robinson & Com-
pany the following letter: "We had
about 8,000 hogs on sale today and
the market was a little lower with
a top of \$14.75. However, we were
able to sell your load of Berkshires
for \$14.90, which was 15 cents more
than anything else sold for today."

This is just another instance of the
ability of the Berkshire to top the
market. That every farmer may have
the opportunity to secure some good
Berkshires, the Southwestern Berk-
shire Congress will hold a public sale
of bred Berkshire sows and gilts at
the D. J. Bastanchury Ranch, La
Habra, Saturday, August 14. It is ex-
pected that a large number of farmers
will be in attendance with the view
of securing one or more of these Berk-
shires with the ability to make satis-
factory gain under any and all condi-
tions and on most any kind of feed.
The sale will be preceded by a big
free dinner.

BEEF IMPORTS FOR 1920 SHOW SLIGHT INCREASE OVER 1919

There was very little difference in
the quantity of fresh and refrigerated
beef imported into the United States
in 1919 and 1920. The figures are
taken from the meat inspectors' re-
ports, bureau of animal industry,
United States department of agricul-
ture. In ten months ending in April,
1919, 27,673,105 pounds of fresh and
refrigerated beef were imported. In
the period ending at the correspond-
ing time in 1920 the quantity of fresh
and refrigerated beef arriving in the
United States from foreign countries
was 27,968,880 pounds, an increase of
about a quarter of a million pounds.

Fresh and refrigerated meats of
other kinds jumped to twice the quan-
tity in the ten months ending April,
1920, as for the same period in 1919.
The figures show 7,933,377 pounds for
1919 and 14,979,663 pounds for 1920.
But the canned and cured meats im-
ported during the same periods show
a remarkable drop from 126,624,348
pounds in 1919 to less than 2,000,000
pounds in 1920. This item accounts
for the marked decrease in the total
meat products imported. The total
weight imported in the 1919 period
was 168,602,911 pounds, but 1920
brought only 50,246,655 pounds.

It is much better policy to make re-
pairs when they are first needed
rather than to wait until more exten-
sive ones are needed. There is a
satisfaction in having one's belongings
in good shape and small repairs are
less expensive to make than larger
ones.

TESTIMONIALS

"Cows increased in one week 3 per cent in milk."

A. L. McCULLOCH, Alpaugh, Cal.

"I never saw hogs do so well or grow so fast as on this molasses
ration."

C. H. HARTWIG, Yuba City, Cal.

"It has enabled me to keep my stock in better condition at less ex-
pense."

J. M. HENDERSON, JR., Sacramento, Cal.

"Have one calf that refuses to drink new milk—prefers skim milk
with molasses. What do you know about that?"

R. HECKLEY, Santa Rosa, Cal.

"It has been a great advantage in getting the stock to clean up the
roughage."

H. H. AMES, Chowchilla, Cal.

"One cow will turn down the choicest handfuls of alfalfa hay unless
it has been 'Molassed'."

REDWOOD AYRSHIRE FARM, La Honda, Cal.

MOLASSES

cheaper than hay, but has same feeding value as corn or barley.

W. H. YOUNG COMPANY

58 Sutter Street

San Francisco, Cal.



Sunny Side Farm

where efficiency is our watchword and the production of extra
heavy milking Holsteins and big type Poland Chinas is our special-
ty. A few choice animals of either breed or sex for sale at all times
at reasonable figures. Write for information.

R. F. Guerin

Visalia, Cal.

Johnson's Defender Jr.

Heads my herd of carefully selected sows. He should be seen to be appreciated.
I can spare a few choice females or young stock either sired by or mated to
this good boar. You will be pleased with any purchase made from me.

H. C. WITHEROW

Live Oak, Cal.

Hauck's Big Type Poland Chinas

Hauck's Timm Jones at head of herd. Brood sows are daughters and grand-
daughters of Cantrall's Ideal.

Write for our attractive offer of big type gilts bred for September farrowing.

N. Hauck

Alton, Cal.

Italian Vineyard Company

Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them.
Priced at a figure any farmer can afford and that will show him a profit.

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California. Plenty pastures, fresh running
water, buildings modern and sanitary. Lo-
cated 21 miles east of Los Angeles.

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Herd and range bulls reasonable.
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fornia.

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Hereford Farms

Geo. Watterson, Owner

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Anxiety, Repeater, and Bonnie
Brae breeding. Bred and raised on
mountain range.

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Over Two Million Calves

protected against Blackleg for LIFE with ONE treatment vouch for Purity Blackleg Aggressin (Germ-Free
Vaccine made by the Kansas Process). Absolutely safe to use. Cannot transmit disease. If brand, castrate,
etc., when you vaccinate. OTHER PURITY PRODUCTS: Anti-Abortion Vaccine for Cattle; Hemorrhage Sep-
ticemia Vaccine for Cattle, and Sheep; Anti-Hog Cholera Serum, and High Count Mixed Infection Vaccine
for Swine. For service that counts write, phone, or wire

PURITY SERUM CO., J. L. Thatcher, Mgr. Riverside, California

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Spring Baby Chicks For Sale—400,000 S. C. White Leghorn baby chicks from heaviest laying (Hoganized) Stock. Price during May and June, 25, \$5.00; 50, \$9.00; 100, \$14.00. Special prices 500 and 1000 lots. Safe delivery guaranteed. You pay only for chicks received alive and in good condition, no money in advance, pay on delivery. Shipped safely anywhere west of the Rockies. Finest hatchery in the world. Established 1898. MUST HATCH INCUBATOR CO., PETALUMA, CALIF., 438 Seventh St.

FALL BABY CHICKS

We have the following varieties of thoroughbred chicks every week: Anconas, Barred Rocks and R. I. Reds, \$20.00 hundred. Extra fancy dark R. I. Reds and White Rocks at \$25.00 a hundred. White Leghorns \$17.50. We guarantee safe delivery. Every one a strong, healthy chick. **ORANGE COUNTY HATCHERY, 403 E. Santa Clara, Santa Ana, California.**

Santa Cruz Chicks are in demand. Our hatchery will run full blast this fall, supplying Leghorns, Minorcas, Anconas, Rocks, Reds and Orpingtons. Write for folder with price list. We also offer Hydes W. L. Cockerels from Pen 1, with trapnest record 236-284. **B. W. Archibald, Soquel, Santa Cruz County, Calif.**

Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. **L. W. Clark, 615 Main Street, Petaluma, California.**

Baby Chicks from my carefully selected, thoroughbred flock of S. C. White Leghorns. May, June and July delivery at \$13.00 per 100. Good, strong chicks at this reasonable price. Write for particulars. **J. R. Heinrich Poultry Yards, Arroyo Grande, California.**

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S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write Henry Miller, Supt.

White Leghorn Baby Chicks from heavy laying **HOGANIZED STOCK**. Safe arrival of full count, live, strong chicks guaranteed. Price list and interesting literature on application. **The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.**

Baby Chicks, Barred Rocks, and R. I. Reds. We have bred Rocks exclusively since 1915. Our Reds are from carefully selected stock. Chicks every Sunday, 25-35-50; 50-100-200. **HARGETT & SON, Route 2, Compton, California.**

Thoroughbred B. P. Rocks, Trapnested Cock and Cockerel matings, 250 egg record and better, mine 210 and better. Fertile eggs, \$2.50 15, chicks, 25c. Phone 5599, Mrs. M. A. Warren, 36 Little Delmas Ave., San Jose, mornings only.

Raise Fall Chicks— We will have them every week. **R. I. REDS, BARRED ROCKS, WHITE LEGHORNS.** Write for special circular. See why they pay. **Stubbe Poultry Ranch and Hatchery, P. O. Box 67, Palo Alto.**

Barred Plymouth Rocks— "Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. **Charles H. Voddan, Los Gatos, California.**

Breeding Stock—Pullets—yearling hens—\$2 to \$3. R. I. Reds, Barred Rocks, Black Minorca, Brown Leghorns. Fall chicks also. Mission Hatchery, Campbell, California.

White Leghorns—Chicks, hatching eggs and breeding stock from the home of heavy layers. Fall chicks pay big. Free folder tells why. **Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, California.**

Single Comb White Leghorn Chicks from our Hoganized and Trapnested stock, 100 or 1000 lots, booking orders September and October deliveries. **Forster Brothers, 2918 Otis Street, So. Berkeley, California.**

Buff Orpington, Buff Ducks, Bourbon Red Turkeys, White Guineas, The Ferris Ranch, S. Reservoir, Pomona, California.

White Minorca Baby Chicks and Hatching Eggs—Dark Cornish and Silver Campine eggs. Folder. Leech Poultry Yards, Baldwin Park, California.

Baby Chicks from selected egg type S. C. White Leghorn hens. **Tupman Poultry Farm, Box 7-C, Ceres, California.**

SALESMEN WANTED

Agents Wanted to sell seeds, plants, bulbs, trees, garden supplies, etc. Liberal commission, large firm, part or full time, good opening for any one. Boys and girls also wanted to sell package seeds during vacation and after school. I send box of seeds free—you pay as sold. Give age, reference, and photo with letter. Send at once to **Wm. Dart, Santa Rosa, California.**

Men With Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guaranteed, working for an old reliable California company. Turn your spare time into cash. Write **J. H. Yetter, 115 North Broadway, Los Angeles.**

Wanted—Salesman who can sell high-grade, dependable nursery stock; exclusive territory; outfit furnished and cash advanced weekly. Commission basis. Address **Albany Nurseries, Inc., Albany, Oregon.**

RABBITS

For Sale—New Zealand and Flemish Giant does and bucks, young stock. Call 2212 Nicholson Avenue, Monterey Park, California. Phone **Alhambra 656-W.**

New Zealand Reds—Young stock. Reasonable prices. **Josephine Spencer, 1915 21st St., Sacramento.**

TREES

For Sale—Ten thousand one year Sour Seedlings, six inches up to twenty. No better stock to be had. Price \$50.00 the thousand, also 500 1/2 inch up Valencia one year, \$1.40 each, 300 pedigreed Eureka Lemon trees 1/2 inch up, two years. The above is first class, fine roots. **C. W. White Citrus Nurseries, Home 303, Glendora, California.**

For Sale—Piacentia Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. **Ketscher's Nursery, 1101 E. 4th St., Santa Ana, California. Phone 572WK.**

50,000 Florida Sour Orange Seed Bed Trees; 100,000 California Sweet Seedling Seed Bed Trees; Valencia, Eureka Lemons; Supply Co. buds. SOUTHLAND NURSERIES, 1941 East Colorado St., Pasadena, Cal. Phone, Colorado 6352.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Fruit Trees—Berry Plants scarce, order now. **Cash Nursery, Sebastopol.**

CATTLE

Toyon Farm Association.

UNDER STATE AND FEDERAL SUPERVISION.

Small foundation herds, Heifers and Bulls.

PERFECT IN HEALTH, RIGHT IN TYPE, PRODUCTION AND BREEDING.

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350 HEALTHY HOLSTEINS.

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Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. **A. W. Morris & Sons, Woodland, California.**

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Registered Holstein Bulls, various ages at **Nuevo Stock Farm, Wineville, California. E. R. Stalder, owner.**

Registered Holstein Bulls of various ages for sale. **Millbrae Dairy, Millbrae, California.**

Sunshine Farm Jerseys—No females for sale. Bulls from high testing cows for sale. **E. E. Greenough, Merced.**

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Reliable Cabbage Seeds—I grow them. You want them. Let's get together. Write me for special trial offer on just what you will need. **Isaac F. Tillinghast, 40 Podel Street, Santa Rosa, California.**

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Pumpkin Seed—Mixed Pumpkin Seed, good germination, 25c per lb. **Aurora Seed Mill, Stockton, California.**

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Agricultural College Graduate, twenty years' practical experience, married, wants position as working foreman or superintendent on dairy ranch. Good schools, good living conditions essential. Holstein cows A. R. O. work preferred. Address "L," care California Cultivator, Los Angeles.

Wanted—Position of responsibility on dairy or fruit ranch. Graduate of Eastern Agricultural College and had six years of farm experience. Desire to learn California agriculture. Cannot accept a low wage. Address "Z," University Farm, Davis, California.

Wanted—Job on a Ranch by boy of 16; weighs 140, strong and intelligent. Good home more important than wages. Address: **Robert Harper, Eagle Rock, California.**

Wanted—to hear from owner of good ranch for sale. State cash price, full description. **D. F. Bush, Minneapolis, Minnesota.**

Wanted—Myrobolan (cherry, plum), any quantity. Pay high price. Address: **K. Umeda, Gilroy, California.**

Wanted—Immediately, experienced budgers and tiers. Address or phone **Kirkman Nurseries, Fresno.**

LIVE STOCK

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Next sale at Ranch, Wednesday, August 11, 1920. **W. P. Dwyer and W. S. Gullford, Box C, Butte City, Glenn County, California.**

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Your Choice of 10 Crack Boar Pigs from our early litters. We want you to see these pigs, their litter mates, and their dams. Have just shipped a choice boar pig to Kansas. These young boars are of correct blood lines, right in type, and well developed. Represent the close-up blood of Laurel's Champion, Star Leader, Ames Rival 118th and other excellent families. Write or come to the ranch. Yours for better Berkshires. **Geo. A. Stingle, Lark Meadow Ranch, El Monte, California.**

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Real Good Berkshires, cholera immune. **Frank B. Anderson, Box 724, Sacramento, California.**

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Borge's Big Duroc Jersey Hogs—Herd headed by California Golden Model 3rd. A few choice females of desirable breeding for sale at very low figures. I am offering for sale the tried boar **Dos Palos Chief** (an Orion Cherry King Jr. boar). Here is an opportunity to secure a tried sire at a very low figure. Satisfaction assured. Write at once. **Jack Borge, Dos Palos, California.**

Fifty Head of Durocs, bred sows, gilts and pigs. Three boars ready for service. Five March boars, grandsons of Mary Jane Pathfinder. One sow of Orion Cherry Pathfinder out of Lamb's Model Lady. Five boars out of Cherry Queen Pathfinder and sired by Lords Orion Cherry King. For information and prices write **Elmer Lamb, Ceres, California.**

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. **Harvey M. Berglund, Dixon, California.**

Bargains in Bred Sows and Gilts—Pathfinder and Great Wonder I Am blood. **Derryfield Farm, Capitol National Bank Bldg., Sacramento, California.**

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The Big-Type Polands direct from Iowa. The best blood lines in the game by the Iowa man. **J. L. Dunlap, Pomona, California.**

The Grand Champion El Profitto heads our big type Poland Chinas. Letters promptly answered. **Viola L. Renwick, Santa Barbara, California.**

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For Sale—Trilo of pure bred Hampshire swine. Two fine belted sows from Underhill's bred sow sale; good backs, good feet. Young 400 lb. boar from Langdon's with the great length and good spread. Delighted to show or send photo. Sows both bred recently. Swine will never be so low again. Trilo, with papers, \$250. **R. M. Cartwright, Box 65, Gardena, California.**

My Victor Herd—Headed by Billiken Chester Whites. For quality and big litters. **E. E. Fulton, Box 7, Fair Oaks, California.**

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For Sale—\$30,000—in Visalia, one mile south from Court House, 30 acres of best soil all under cultivation and bearing, plenty of water, pumping plant, 5 inch pump and ditch water. 2 houses of 4 rooms each, and 2 barns. All farming implements can be bought with the place. 15 acres in Thompson Seedless, one and two year old vines; 6 acres in 6 year old french prunes; family orchard on each place consisting of pears, apples, apricots, peaches, walnuts and almonds. Two and one-half acres in alfalfa and balance in corn. Five thousand rooted Thompson Seedless, one thousand apricots, and two hundred peach trees, ready for planting next spring. This is all included in the price. This is certainly the best buy in Visalia. The place must be seen to appreciate its valuation. Address owner, **Mrs. H. Gredsmaker, Visalia, California.**

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Seven acres bordering beautiful 5-mile lake; 300 orange and grapefruit trees in bearing; extensive bearing vineyards; cottage worth \$2800, beautifully situated, overlooking lake; good water, telephone, oak shade; other buildings; quick-action price only \$2500. Full details page 64 **Strout's New Catalog Orange Grove and other Tropical Farms. Copy free. STROUT FARM AGENCY, 503 E. J., Wright-Callender Bldg., Los Angeles, California.**

For Sale—\$5,000. Five acres of sandy loam especially adapted for truck gardening near Porterville one-half mile west. Good six room house, bath, toilet and screen porch, large refrigerator and good cellar. Property fenced, all land under irrigation. Chicken runs and corrals, pumping plant, plenty of good water, fruit trees and some alfalfa and garage. Chickens and turkeys can be bought with the place. Can be made an ideal home and is a good buy. Address Owner, Post Office Box 207, Porterville, California.

For Sale—300 Acre Farm situated Santa Barbara County. All implements necessary for beans and hay, including reaper, Fordson tractor and plow, side delivery rake. Large house and barn, chicken house, bunk house, implement shed and well equipped shop. Soft water, modern system. Apple trees, nuts and various fruits. Owner must sell, ill health. Easy terms. Address **Alfred L. Friel, Lompoc, California.**

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Many Bargains in real estate for sale or exchange. Citrus and deciduous fruits, olive groves, and farm lands. I am a resident agent. **Joe Sprouse, Fallbrook, California.**

For Sale—3 miles from Visalia, 10 or 20 acres of best soil, improved. House of 5 rooms. A snap for a party looking for an ideal place. Address owner, **J. C. Aulman, Visalia, California.**

If interested in securing farm lands or have same for sale write me. **John G. Mea, St. Helena, California.**

Diversified Farming Lands—Natomas Irrigated, Sacramento County; terms. **Alex. Murdock, 38 S. Sutter, Stockton.**

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White Muscovy (Quackless) Ducks—Eggs, Ducklings, Breeders. Free circulars. **Caldwell Farm, Box 274-E, Los Angeles.**

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Mammoth White Pekin Ducklings, three weeks old, 30c each. **A. Surtman, Petaluma.**

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For Sale Cheap—Small bunch of goats, including nine does and five kids and two good bucks. Inquire or write to **O. C. Knox, Thermal, California.**

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For Sale—Used ranch material. windmills, pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for our "Special Bargain" price list. Demmitt Co., Upstairs, 120 N. Main, Los Angeles.

For Sale — Bean Tractor in first class condition. Used about forty days. Engine has just been overhauled. Price \$600.00 cash. J. N. Thille, Santa Paula, California.

For Sale—Bean tractor used one season. Also brush cutter with engine attached, all mounted on wagon, used for cutting tree prunings. HEWES RANCH, El Modena. Phone Orange 363.

For Sale—Case Tractor in good condition or will trade for Dodge car, equal value. L. F. Rafferty, Owensmouth, California.

For Sale—Caledonian Bean Cutter and small thresher. Bargain. Chas. Young, Whittier, California. Phone 7694.

For Sale—Calf-way milking machine, De Laval separator, James Mills Orchards Corporation, Hamilton City, California.

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300,000,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book THE HOMESSEEKER which tells you where this land is and how to acquire it, or send \$2.00 for book direct. The Homeseeker, Dept. M. 336 S. Broadway, Los Angeles, California.

PIGEONS

For Sale—White King Pigeons. Old mated breeding birds, \$3 a pair; unmated birds \$2 a pair. Paradise Valley Poultry Ranch, National City, California.

SERIES OF POULTRY CULLING DEMONSTRATIONS

The agricultural extension service, representing the University of California and the United States department of agriculture, has made arrangements to have R. B. Easson, extension poultry specialist of the University of California, for a series of culling demonstrations under the auspices of the Los Angeles County farm bureau. Mr. Easson will cull flocks at these demonstrations on which egg production records will be kept preceding and following the demonstration, thereby showing an absolute check on the advantages of culling. The demonstrations will be held: Monday, August 2, 10 a. m., at place of S. R. Elston, Vineland, at Baldwin Park; August 3, at 10 a. m., at place of John D. Cockran, one and one-half miles north of Downey on Los Angeles Boulevard; August 3, 2 p. m., place of C. C. Ockerman, Signal Hill, about two miles north of Long Beach on Hermosa Street between Burnett and Crescent Avenues; August 4, 10 a. m., place of L. G. Hack, 3255 North Fair Oaks Avenue, Pasadena; August 5, 10 a. m., place of T. C. Dwire, Third Street, Lankershim; August 9, 10 a. m., place of Mrs. Ben Long, Gardena; August 10, 10 a. m., place of C. G. Ross, corner Grand Avenue and South San Antonio Street, Pomona; August 11, 10 a. m., place of L. G. Wiley, Sherman Way, Van Nuys; August 11, 2 p. m., place of C. W. Pearson, Helen Street, Hansen Heights; August 12, 10 a. m., Fuller & McAllister Ranch, corner Greville and Hardy Streets, Inglewood; August 13, 10 a. m., place of J. D. Zimmerman, San Gabriel Boulevard, three blocks north of Masonic Home, San Gabriel.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

By Max Kortum, Manager

R. C. Gibson of Newhall wins for the week with a count of 53 eggs, this being six eggs over his closest competitor. The flock as a whole is beginning to weaken with the gradual approach of the molt. At present out of the 338 contesting hens 274 are laying. These laid the past week 1,270 eggs, this being an average for the whole flock of 53½ per cent for the seven days.

On account of knowing just what each hen is doing it may be of interest to those who are culling out molters and broody hens at this time of the year to demonstrate what would happen to the contest flock under this procedure. Of the 64 hens that are not laying, 52 would be discarded by a good culler according to their present condition. This would give 286 hens the credit for the 1,270 eggs for the week, making the percentage average 63.4, or just about ten points higher than what it is.

High pens for the week are: Gibson, 53 eggs; Wood, 47; Neef, 36; Enterprise, 44; Tullett, 44; Gray, 44; Stalling, 43; Barker, 43; Bellows, 42; Peck, 42.

AMERICAN EGG LAYING CONTEST

By Russell F. Palmer

All doubt as to whether or not the choice quality exhibition females in the American Egg Laying Contest held at Leavenworth, Kansas, would continue to uphold the reputation and fact already established that pullets of exhibition quality would lay a profitable number of eggs, has been practically dispelled by the highly creditable record made to date by the 270 females in the contest. During the month of June a very high average production was recorded, and especially was this true of the lighter weight breeds that are not so much inclined to broodiness.

Ten Highest Pens for Eight Months

S. C. White Leghorn, Pennsylvania, 886 eggs; Rhode Island White, Kentucky, 850; S. C. White Leghorn, Iowa, 826; S. C. White Leghorn, Texas, 809; White Wyandotte, Pennsylvania, 801; S. C. White Leghorn, Washington, 786; S. C. White Leghorn, Illinois, 772; S. C. White Leghorn, England, 772; S. C. White Leghorn, Missouri, 762; S. C. White Leghorn, New York, 761.

Ten Highest Pens for June

S. C. White Leghorn, Kansas, 124 eggs; S. C. White Leghorn, Kansas,

122; S. C. White Leghorn, New York, 121; S. C. White Leghorn, Iowa, 120; Rhode Island White, Kentucky, 119; S. C. White Leghorn, Iowa, 119; S. C. White Leghorn, Nebraska, 118; S. C. White Leghorn, Pennsylvania, 118; S. C. White Leghorn, Michigan, 117; S. C. White Leghorn, Pennsylvania, 115.

THE KAURI PINE

The superintendent of forestry in the Hawaiian Islands states in a recent official report that the kauri pine, *Agathis australis*, is "the most promising and widely useful tree for planting in the Hawaiian Islands." This tree has been planted there up to the present only as an ornamental and in very limited numbers. The same is true in California. It is not generally known but thrives well in the southern third of the state and at a satisfactory rate of growth. It is noted for shooting upward rather than for trunk diameter. So far as climatic conditions are a factor it appears to thrive as well in California as in Hawaii, where the water supply has been equal, for the report states "the average growth is one inch in diameter every four and three-quarter years." It grows faster in California.

Skagit County, Washington, fair August 9-14.

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Complete equipment of large Holt and two Best Tractors, Plows, Discs, Levelers, Ditchers, Grain Drills, Mowers and other tools, also live stock if desired. This is an exceptional opportunity. Possession given at once. Rental to begin with 1921. Only responsible parties, able to finance themselves, considered.

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Napier—divided crowns	\$1.00	\$4.00	\$30.00
Guinea—divided crowns	1.00	4.00	
Smilo seed per lb., \$3.00—divided crowns	.50	1.00	4.00
Phalaris Stenoptera—Plants	.50	1.00	4.00
Para—Stems	.50	1.00	4.00
Japanese Sugar Cane—Stems	1.00	4.00	

For further information on any of the above subjects, write

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Especially designed for hard ground; subsoil attachment breaks up the hard pan; furnished with power lift; 1 to 4 disc for field or orchard use. This plow conserves moisture—pulverizes the soil. Write for complete description. Call and see these plows when in the City.

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Get a new pair of Boston Garters and ask your wife to examine them. She will recognize the superior grade of materials used—she will appreciate the careful, painstaking workmanship and will understand why it is that "Bostons" wear so long.



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Write for catalogue and if a beginner for Cottage Bee-Keeping, which will be promptly mailed free.

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July is one of the best months to plant. Growers who planted last July and August have already harvested over 15 tons per acre netting \$1,000 eleven months from planting. For further information write J. B. WAGNER, Rhubarb Specialist, 1550 East Villa St., Pasadena, California.

When writing advertisers, mention the Cultivator.

Household Department

SONG

Hark, how sweet the thrushes sing!
Hark, how clear the robins call!
Chorus of the happy spring,
Summer's madrigal!

Flood the world with joy and cheer,
O ye birds, and pour your song
Till the farthest distance hear
Notes so glad and strong!

Storm the earth with odors sweet,
O ye flowers, that blaze in light;
Crowd about June's shining feet,
All ye blossoms bright.

Shout, ye waters, to the sun.
Back are winter's fetters hurled;
Summer's glory is begun;
Beauty holds the world!

—Celia Thaxter.

A HOUSE FOR RENT

DADDY, what does 'H-o-u-s-i-n-g' spell?" Little Judith Proctor leaned against her father's elbow and laboriously spelled out the headlines of the morning paper propped up beside his coffee cup.

"Housing Problem Grows Acute," read her father. "That means, Pussy, that you'd better be glad you've got a corner—lots of people are having trouble finding homes these days."

"Indeed they are!" Mrs. Proctor echoed. "People are walking up and down the streets begging for houses to rent."

"Why don't you rent them this and getting a whopping big price for it?" grinned Randall.

"And where would we live?" Sam, the older boy, put in.

"What's the matter with the garage on the back lot?" Randall inquired. "Then you'd be rich enough to send me to Moosehead Camp next summer, wouldn't you, father?"

Mr. Proctor looked thoughtfully at the alert youngster, and then he said with a touch of regret, "It is too bad that I can't give you that trip, Ran, but it would cost more than a hundred dollars, and I can't afford it."

"I like Ran's nerve—proposing that all the family camp in the garage just so that he can go to Moosehead Camp next summer with that military academy bunch."

Sam spoke a little sorely. It had been his ambition to go to the academy at Hewson this year, but financial trouble had overtaken his father and he had been obliged to content himself with the less attractive high school.

The Moosehead Camp, which represented the goal of Ran's ambition, was a summer recreation scheme managed by Major Mallard, commandant of the academy, and so popular was it proving that boys from all over that section of country flocked to it.

"The garage isn't such a bad place," Ran insisted; "it has an upstairs."

"A loft, you mean!" interposed Sam. "And steps going up to it."

"And they are as steep as a ladder!"

"The windows and doors are fine, and that hydrant in the back."

"Let me go and live there!" begged Judith, fired by Randall's enthusiasm.

"I don't see any prospect of our using it for automobiles at present," said their father ruefully, "but I don't think we need come down to living there ourselves—just yet."

Mrs. Proctor changed the subject deftly, but Ran's mind was filled with his unique idea.

"Come on, Sam," he urged as they left the table; "let's go and take a look at the place."

Rather reluctantly Sam accompanied him. "You're crazy, Ran," he said. "What difference does it make if the garage is fit to live in? You know we are not going out there."

"No, but maybe we could fix it up so that somebody else would want to." Ran lowered his voice as he shared his great idea. "If folks are as bad off for houses as the paper says, I should think they'd be glad of the chance."

He threw open the wide doors and stepped into the empty, echoing place. It was an unusually clean, snug building, with an excellent floor, and windows well spaced and of good size. No automobile had been kept there for several years, and only a few odds and ends of garden equipment were stored in the place. A small flight of steep steps ran up from the back of the building to the loft above, and

there was a convenient water tap under the stairway.

"You see, Sam, we could clean it all up, stain the floors, and hang curtains at the windows. I know mother would let us have the furniture that is stored in the cellar."

Sam put out a protesting hand. "Hold on! Don't go so fast! Let's see what it really looks like in here," and he began a careful exploration of the place. At the end of an hour the two emerged, all differences lost sight of in the absorption of their plan. This they proceeded to lay before their mother. She was amused at first, but as she listened to the boys' argument she was almost won over by the prospect.

Their father was harder to convince, but after a thorough canvass of the situation, he gave his consent.

"You may go ahead, boys, on condition that you rent the place through a reputable house agent, who will give references as to the tenants' respectability. It will need a little fixing first, though. Will twenty-five dollars see you through? I doubt your finding a tenant, however, so I am unwilling to spend more."

Twenty-five dollars seemed a fortune to Ran, and an adequate supply even to the more experienced Sam; but this was before they made a round of the paint shops and inquired the prices of stains and varnishes.

Still, by dint of hard work and a good deal of help from their mother, they managed to revolutionize the appearance of the garage. A fortnight later it was ready for a tenant.

The floor was stained a light brown around the edges of the two porch rugs which Mrs. Proctor loaned them for the first floor of the building.

"They are summer rugs," she said, "and it won't hurt them much more to be spread out there than to be stuffed away in our cellar. Those curtains of Aunt Mary's I never have needed, because they didn't suit our windows."

They suited the garage windows wonderfully, the two promoters thought, and indeed the plain scrim draperies looked fresh and clean enough for any home. Aunt Mary's rather embarrassing legacy of furniture—not old enough to be quaint, not modern enough to combine with Mrs. Proctor's—had crowded the cellar for two years; now Sam and Ran, carried it down, piece by piece, to the new establishment.

Odd? Of course it was! The lower floor must serve as dining and living room, while a screen hid the kitchen, pantry and storeroom equipment in the rear. The upper floor was divided off into separate "apartments" by means of several sets of Aunt Mary's brown portieres.

The building had no porch, but the doorway opened on a slope of smooth ground a dozen yards from the side road, and the view of the wooded hills encircling the town was far better, Mr. Proctor declared, than anything to be seen from his front veranda.

When all was in order, the boys went to the real estate offices of Wakely and Benning and offered their house for rent.

"Let me do the talking," Sam argued; "they'll think it is a joke if you tell them what we have done."

Sam displayed considerable dexterity in his address: "Mr. Wakely, have you anyone on your list of renters that would like a different sort of house from the ordinary—a kind of free and easy and artistic place?"

"If you'll show me any kind of house for rent in this town, young man," the harrassed agent replied promptly, "I'll take care of the tastes of the renter."

Sam told their plan, finding it difficult, of course, to overcome Mr. Wakely's impatient incredulity. But before the hour was over the boys had induced him to go with them to see their property.

"How about heating?" he grunted, concealing his genuine amazement at what they had accomplished.

"There's a place for a stove here at the back," Sam told him.

"And we saw one at Miller's second-hand place for ten dollars," squeaked Randall irrepressibly.

"The tenant could install that," Mr. Wakely relented. "Boys' this isn't a bad bit of work, and I believe I can get you a tenant. Now about the rent. Would \$25 do? You see, whoever

The Cultivator Patterns



BE SURE TO SEND SIZE

3123. A Dainty Frock—Cut in 4 sizes: 4, 6, 8 and 10 years. Size 10 will require 4 yards of 27 inch material. Price 10 cents.

3307. Misses' Dress—Cut in 3 sizes: 16, 18 and 20 years. A 20 year size will require 7 1/2 yards of 27 inch material. The width of skirt at lower edge is 1 1/2 yard. Price 10 cents.

3293. One Piece House Dress—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 5 1/2 yards of 36 inch material. The width of the dress at lower edge is 2 yards. Price 10 cents.

3304. Two Popular Models—Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. A Medium size requires 3 yards for No. 1, and 1 1/2 yard for No. 2 of 30 inch material. Price 10 cents.

3141. A Simple Dress—Cut in 4 sizes: 2, 4, 6 and 8 years, and will require 2 1/2 yards of 27 inch material for a 4 year size. Price 10 cents.

3306. A Smart Dress—Cut in 4 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 6 yards of 36 inch material. The width of the skirt at the lower edge is 2 yards with platts extended. Price 10 cents.

3122. A Simple Apron—Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. Size Medium will require 4 1/2 yards of 36 inch material. Price 10 cents.

3285. A Simple Set of Hat and Apron—Cut in 5 sizes: 1, 2, 3, 4 and 5 years. A 4 year size will require 2 1/2 yards of 27 inch material for the Apron and 1 yard for the Hat. Price 10 cents.

CATALOGUE NOTICE

Send 15 cents in silver or stamps for our UP TO DATE FALL AND WINTER 1920-1921 CATALOGUE, containing over 500 designs of Ladies', Misses' and Children's Patterns, a CONCISE AND COMPREHENSIVE ARTICLE ON DRESSMAKING, ALSO SOME POINTS FOR THE NEEDLE (illustrating 30 of the various simple stitches), all valuable hints to the home dressmaker.

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PATTERN DEPARTMENT
California Cultivator
Los Angeles

comes in will have to use oil lamps, and I'm afraid you couldn't ask more for it."

Sam gave Ran a surreptitious kick. "That will do," he said with dignity, while the younger boy stepped out of the back door to turn a joyful hand-spring.

"That would be \$300 a year!" Ran shouted when the agent had gone. "We could pay Mr. Wakely something, give back Dad's \$25, keep a little for fun, and still get a hundred dollars out of it for camp next summer, and enough to help pay your tuition fee at the academy. Whoop-la!"

"You haven't got the brain of an ostrich, Ran. The money will come in month by month; we won't have it all to spend in a lump," Sam reminded him.

But both boys were jubilant, agreeing not to say anything at home until Mr. Wakely's tenant was actually in hand.

"Anything to do down at your house today?" asked their father at breakfast the next morning.

"I'm going to take the pushcart and go over to Haley's Branch for clean sand and pebbles this afternoon," Ran answered promptly. "We want to make a path to the side road, dad."

"I am going to stay around and finish up things," Sam said vaguely; as a matter of fact he wished to be within reach in case Mr. Wakely should return.

So Ran set off alone with his cart and shovel.

(Continued next week.)

THIS WEEK'S PATTERNS

A dainty little girl's dress of white batiste or lawn with lace edging and insertion is shown in 3123. The work and time put on such a little frock are well spent, for when it is outgrown the long, full skirt may be dropped to the waist line and used for another summer or two.

Of quite a different style is the plain little dress in 3141, charming and practical for a pongee, for instance. The loop hutton holes and sash run under the little side pockets are distinctive. A touch of brown and orange or lavender and black or blue and red in the simple outline of knots or running stitch as indicated around neck, sleeves and pockets, is an addition any child will love.

3307 is a graceful, simple gown, always becoming.

3306 shows the new lines with long waisted effect and pretty touch of embroidery.

3293 is a practical and pretty house dress.

Note the little outline of pattern for apron 3122. Simple, isn't it, and delightful when it comes to the ironing board.

Eton jacket effects are quite the thing again, very dainty and attractive for the slight figure and capable of individual distinctive handling.

The ducky little apron dress and sunbonnet to match of cretonne or gay English print, shown in 3285, involve practically no dressmaking and are sweet and effective.—R. P. D.

HOUSEHOLD QUERIES

Sweet Pickle Recipe Wanted

Mrs. J. W. M. of Fresno writes: "Will you kindly publish in your household column a request for home-made sweet pickle recipes? I have found all the recipes that I have tried from Cultivator contributors to be good and so I am appealing to you for what I cannot find elsewhere."

The Cultivator will be glad to receive such recipes and will pay in extension of subscription for all published.

To Keep Corn White

Here is a suggestion worth remembering and trying, brought in by a Cultivator reader:

When boiling corn on the cob, if some ears turn yellow, just before removing from the pot drop in a little vinegar—a tablespoon or two to a large kettle will be ample—and the more attractive white color will instantly return.

Easy Pickles

Somewhere I saw recipe for "easy pickles." I think they were put up just in cold vinegar and had a little mustard.—Subscriber, Turlock.

The very best pickles we ever ate

were made in this way and we have just telephoned to the friend who made them for her recipe. Here it is:

Pack perfectly fresh small cucumbers in quart jars. Fill jars with vinegar, add to each jar one tablespoon sugar, one tablespoon salt, one tablespoon mustard. Put on rubber rings and screw on covers. Set away in cool, dark, dry place.

Those we tasted had been in jars for two years and were crisp and fine.

SUMMER VEGETABLES FROM YOUR OWN GARDEN

Chard

Chard grows so quickly that it seems one has only set out the plants when the thick succulent stalks and leaves are ready for greens and for creaming. Most people tire quickly of the leaves as greens, but like the thick stalks cut in two inch pieces with cream dressing added in which has been dissolved a little cheese for seasoning. A little cooked pimento or pepper cut up in the cream sauce is a toothsome addition, as are bits of left over ham, bacon or tongue.

The cooked stalks chilled for salad are also much liked. Serve as asparagus, alone or with other salad vegetables.

Leaves and stalks cut up together may be served as greens. Melt in kettle a little fat—drippings are good. When beginning to sizzle drop in cut up leaves and stalks, previously washed, of course, with moisture adhering, into the pot. Put on cover and steam five minutes or so, as long as you dare for fear of burning. Then add just a little boiling water, cover and steam again, adding a second and third time if necessary. The chard cooks much more quickly this way than when started in water alone, and has more flavor and freshness.

This quick method of cooking green vegetables was recommended in the Cultivator years ago by a Santa Ana subscriber and has been a great help to many of us.

Chard stalks and onions creamed together are also good.

Green Beans

Green beans may be cooked very quickly in the way suggested above. The addition of the fat helps to preserve the green color and prevent boiling over or burning to the bottom of kettle. The colored woman who sometimes helps me clean house says: "It's a scan'al the way they cook beans out here in California. Beans ain't worth eating unless they're cooked two hours anyway with meat." "Meat," of course, to a colored woman means bacon, salt pork or ham. Those of us who were raised on Southern cooking are half inclined to second her opinion, but "new days, new ways."

My own bean patch is a delight this summer, to the eye as well as the palate, for I recklessly scattered a packet of Scarlet Runner seeds with the Kentucky Wonders, and the glowing blossoms are a joy. One can pick them with stems a foot long or more, and many an embryo bean has gone into the flower howl on my breakfast table. The green beans are perfectly good eating, cooked with the Kentucky Wonders, or, a little more mature, as shell beans add richness to the green ones.

Summer Squash

Summer squash, if steamed or prepared in the manner above described, is less insipid than when boiled. Another good way of preparing is to boil, preferably steam, tender the young whole squashes. With teaspoon make a cup in the blossom end, mashing the removed portion with butter or drippings, salt, pepper, grated cheese and milk or chopped bits of meat. Fill the squashes with this mixture and place in baking pans and slip into the oven until slightly browned.

Broiled Corn

Fresh corn may be broiled over a gas flame, if placed in ordinary toaster and turned carefully to avoid scorching. This way of cooking keeps in all juices and sweetness. Of course you've broiled corn over your camp fire and know that nothing can quite equal it, but try it at home.

Corn cut from the cob and fried with green peppers is another worth trying.

Peppers—Tomatoes Stuffed

Stuffed green peppers or tomatoes are especially appetizing for hot days.

We like better to partly cook the peppers before stuffing. The stuffing materials vary with the left overs, but if possible add a little corn. The crisp grains counteract the general mushiness of the ordinary stuffing. Try dried bread crumbs, drippings, corn and bits of meat well seasoned with salt and pepper, with perhaps a tiny bit of cheese melted on top.

Baked Tomatoes

Cut off stem ends of large smooth tomatoes, removing enough of the center to hold an egg broken into it. Salt and pepper egg and bake in medium oven until white is set.

Green Tomatoes Fried

Not really green tomatoes, but just beginning to turn yellow, so that they are firm and meaty. Slice and dip in beaten egg, then in cracker crumbs that have been well salted and peppered, and fry rather quickly.—R. P. D.

HOUSEKEEPING HELPS

By Martha

At this season of the year, spots of iron rust and mildew are often found on table linen and white goods, and they are hard to take out unless removed as soon as discovered. I have found the best and simplest way of removing iron rust is to tie a generous pinch of cream of tartar in each spot and boil. This is harmless and effective. For mildew, rub on plenty of soft soap and salt, then hang out on the line in the sun and air for a few days.

When you buy a broom, toughen the straw by immersing it in strong salt water for several hours, then keep the straw clean by washing frequently in hot suds.

To make good lemon marmalade, soak peel of lemon left from making lemonade, changing water twice a day to extract the bitter. Boil till soft, then mash and put in enough sugar to make it pleasant to the taste; stew a short time, put in a bowl and cut in slices for the table.

If an orange is placed in a box of fresh cookies, it will impart to them a most delicate flavor.

The day before wash day it is fine to prepare some liquid soap by dissolving a handful of borax soap chips in a pint of boiling water, then in the morning stir enough of this in a tub of warm water to make a good suds. Put in the white clothes and let soak for several hours, then the goods will be softened and whitened and will only need a little soap rubbed on the most soiled spots, and you will find that they need very little rubbing and the cloth is not injured in any way.

To keep the refrigerator in a sanitary condition make a hot suds with a little of the dissolved soap and use this for cleaning it out two or three times a week. And to keep the glassware, dishes and silver shining clean, try washing through this suds and rinsing through clear hot water.

A little thin cold starch rubbed over windows and mirrors, allowed to dry and then wiped off with a soft cloth is an easy way of producing most shining results.

PAINT PROLONGS LIFE

The varnish on the carpet sweeper soon wears off. Unprotected as it then is from moisture and variations in temperature, it is likely to fall to pieces. This can easily be prevented by applying a coat of stain finish, obtainable at any paint store, whenever the machine shows the need of it.

Washing machines should also be protected from variations of temperature and moisture. When the original finish shows signs of wear apply a coat of colored enamel.

A little attention to these details on the part of housewives will prolong the life of utensils or utilities which cost considerable money to replace nowadays.

DID THE DOG KNOW?

The Frenchman did not like the looks of the barking dog harrasing his way.

"It's all right," said the host. "Don't you know the proverb, 'Barking dogs don't bite?'"

"Ah, yes," said the Frenchman, "I know ze proverb, you know ze proverbe, does he know ze proverbe?"

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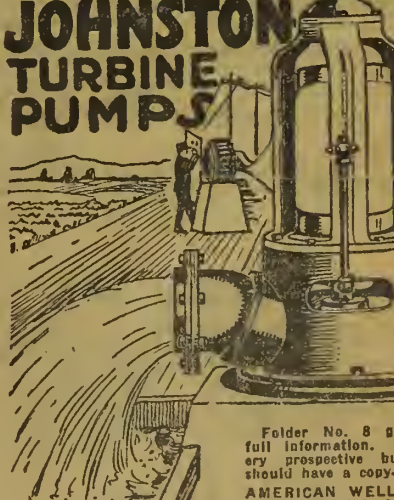
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Los Angeles Markets

Los Angeles, July 28, 1920.

BUTTER

Butter, creamery extras, Produce Ex-
change price 62 cents.

Dairy Exchange prices last week on
extras:

July	21	22	23	24	26	27
'20	62	62	62	62	62	62

CHEESE

Brokers' prices:

California flats, 29@32 per lb.

EGGS

Fresh extras, cases included: Produce
Exchange closing price, 52 per dozen; case
count Prod. Exch. closing price 49 per
dozen; pullets, Produce Exchange clos-
ing price 46 per dozen; pewee pullets, 31.

Dairy Exchange prices last week on
extras:

July	21	22	23	24	26	27
'20	51	51	52	52	52	52

POULTRY

Price to producers: Hens, lt., 20; heavy,
26; colored, 35; broilers, 26@30; roasters,
38; old roosters, 14; fryers, 32; ducks, old,
17; ducklings, Pekin, 3½ up, 20; others,
17; geese, 25; turkeys, live, young
tom, 44; dr., 50; old, live, 40; dr., 41; hens,
live, 40; dr., 41; squabs, 45@47; pigeons,
doz., 1.00.

Belgian hares, live, 13@17; old, 9.

LIVESTOCK

Los Angeles, July 27.—Welghed and
delivered off cars without food or water:
Hogs (hard-grain), 125 to 175 lbs., 15.50;
175 to 225 lbs., 16.50.

Cattle (on foot, gross weight): Steers,
good, 8.50@9.00; medium, 8.00@8.50; cows,
good, 8.00@8.50; medium, 7.50@8.00; bulls
and stags, 6.00; calves, 125 to 150 lbs.,
12.00; 175 to 225 lbs., 11.50.

Sheep—Ewcs, 8.00@8.50; lambs, 11.50@
12.00.

POTATOES AND ONIONS

These are the actual prices obtained
between 7 and 8 o'clock, July 27, by
Los Angeles wholesalers from their sales
to retailers, peddlers, hotels, restaurants,
cafeterias, etc. Terms: Cash on the walk.
There may be slight fluctuations during
the day's trading.

New stock: Supplies liberal, market
weak. Local Early and White Rose, fan-
cy No. 1's, mostly 1.75@2.00; No. 2's,
.75@1.00 per lug. 100 lbs.; sacked No. 1's,
4.75@5.25.

Carlots: Supplies liberal, market un-
settled, sales to jobbers, new stock White
Rose and British Queens No. 1, sacked,
3.75@4.25. Local mostly 4.00.

Onions: New stock: Reds, 1.40; Yel-
lows, 1.65; Globes, 2.75 per 100 lbs. sacked.

Carlots: Demand and movement slow,
market dull. Quality and condition good.
Stockton: Sacked Yellows mostly 1.25;
sacked Reds mostly 1.15.

Garlic: lb., 20@25.

VEGETABLES

These are the actual prices obtained
July 27 by the Los Angeles wholesalers
in their sales to retailers, peddlers, hotels,
restaurants, cafeterias, etc. Terms: Cash
on the walk.

Beans: Ky. Wonder, 7@9; Limas 10@
12 lb.

Beets: Doz., 35@45; sk., 2.25@2.50.

Cabbage: Supplies moderate, market
strong, movement good, wide range in
quality. Best mostly 3@4 per lb., per
field crate, best 3.00@3.75.

Carrots: Doz., 35@45; sk., 2.40@2.75.

Celery: Doz. bunches, 1.40@1.60.

Corn: Local, 60@1.00 per box.

Cucumbers: Market steady; local, best,
lug, 40@60.

Egg Plant: Best, lb., 10@12.

Lettuce: Local, cr., best, 90@1.00.

Peas: Northern, lb., 9@12.

Spinach: Doz., 20@30; lb., 2.

Squash: Local summer, large lugs, 60

@85; Italian, lug, 80@1.00.

Tomatoes: Local lugs, 50@75.

Turnips: Per dozen, 30@40; per sack,
1.00@1.25.

DECIDUOUS FRUITS

These are the actual prices obtained
July 27 by the Los Angeles wholesalers
in sales to retailers, peddlers, hotels, res-
taurants, cafeterias, etc. Terms: Cash
on walk.

Apples: New stock, lb., 5@8; crab, lug,
1.25@1.40.

Apricots: Local lugs, 1.25@1.50.

Bananas: lb., 10½@11.

Blackberries: Supplies light, per crate,
mostly 4.75@5.25.

Cantaloupes: Market weak, supplies
liberal, quality and condition wide range.

Local: Tiptop, pink meats, quality and
condition good, crates, 2.00@2.25.

Casabas: Lb., mostly 2@3.

Cherries: Supplies moderate, market
firm; various varieties, best, mostly 18

@24 per lb.

Grapes: Thompson Seedless, lb., 12@14;

Honey Dew: Crates, 1.50@2.00.

Peaches: Local, best, lug, 1.85@2.00;

Northern, lb., 5@7.

Plums: Lb., 7@10.

Raspberries: Cr., 4.50@5.00.

Strawberries: Cr., 5.00@5.50.

Watermelons: Supplies liberal; lb.,
4@4½.

CITRUS FRUITS

Grapefruit: California, per box, market
pack, 2.25@2.75; special packed brands,
3.25@3.50.

Lemons: Market weak, wide range in
prices. Local stock: Packed, 3.50@4.00;
loose, 1.25@1.75; lug, mostly 75.

Oranges: Supplies liberal, market firm.

Valencias: packed special brands, 12¢s,
5.50@6.00; 15¢s and 17¢s 5.75@6.25. Local

packed, second grade, 2.50@4.00. Pack-
ing house culls, 75@1.25 per lug.

HONEY

U. S. Bureau of Markets, July 16:

Moderate wire inquiry. Demand mod-
erate, movement limited, market dull, lit-
tle change in prices. Carloads f. o. b.

usual terms: White Orange and White
sage, 19@20; Light Amber Sage, 17½@
18½; Light Amber Alfalfa, 16½@17½;

Hawaiian Light Amber, 15½.

Hamilton & Menderson, July 7, in West-

ern Honey Bee: Honey market disor-
ganized, through the reduction in price
at New York by a Los Angeles marketing
association. Prices to producers: White
orange and sage, 18½@19; light amber
sage, 16@17; light amber alfalfa, 16.
Comb honey—So little offered as not to
make a market. Beeswax, 40.

A. I. Root Co., July 5, Western Honey
Bee: The honey market is still quiet.
The demands of Eastern markets are be-
low normal. Prices paid to producers:
Comb honey, approximately 6.50 per case
of 24 sections. Very little offered. Ex-
tracted—Amber, 15; light amber, 16@17;
water-white orange, 19. Beeswax — 38
cash, 40 in trade.

BEANS

California Lima Bean Growers Associa-
tion reports, under date of July 26:

There has been no appreciable change
in the Lima bean market condition dur-
ing the past three or four weeks. Buy-
ing continues slow and consumption is
reported relatively light in most distrib-
uting markets, with the explanation that
it is believed supply of green fruits and
vegetables is affecting the consumption
of dry beans. It is anticipated that re-
newed consumer demand will develop in
the South next month with the com-
mencement of the cotton harvesting sea-
son. It is evident that the real warm
weather which prevailed over Southern
California during the period from the 15th
to the 23rd did considerable damage to
Lima beans in all the nonirrigated dis-
tricts and has appreciably reduced the
previous crop prospects. The exact ex-
tent of this damage cannot yet be deter-
mined.

GRAIN AND FEEDS

A little weaker, especially in spot stuff.
There is a great range in price because of
vast difference in quality.

Grain Exch. prices bid July 28:

Corn: Yellow, No. 2, bulk, 3.12½.

Barley: Carlots, 2.60@2.63½.

Kafir: Eastern No. 3, 2.70.

Milo: Eastern No. 3, bulk, 2.72½.

Milo: No. 3, bulk, 2.71½.

HAY

Southern Prices:

Choice alfalfa41.00

No. 1 dairy alfalfa36.00

Standard dairy33.00

Stock hay29.00

Quotations by Nichols-Loomis Com-
pany. Following are prices to growers
f. o. b. Los Angeles in carload lots; han-
dling and commission must be added to
obtain retail prices on new hay:

Tame Oats23.00@25.00

Barley16.00@22.00

Alfalfa24.00@30.00

Barley straw8.00@10.00

San Francisco Markets

San Francisco, July 27, 1920.

BUTTER

Quotations made daily by the San
Francisco Wholesale Dairy Produce Ex-
change. These are the prices paid by re-
tail grocers to wholesalers. The prices
paid by the wholesalers to producers are
eight per cent less.

Dairy Exchange quotations, lb.:

Extras60½

Prime Firsts59

July 20 21 22 23 24 26

'20 60 59½ 59½ 60 60½ 60½

'19 58½ 59 57½ 58

Receipts week ending July 26, 3,835 cwt.

CHEESE

Dairy Exchange quotations:

Jack, full cream23@26

Cal. Y. A.35

Ore. Trips31½

Cal. Flats30½@34½

EGGS

The prices paid by wholesalers to pro-
ducers are eight per cent less.

Dairy Exchange quotations, dozen in-
cluding cases:

Extras61

Extra Pullets50½

Undersized41½

July 20 21 22 23 24 26

'20 60 61 61 61½ 61½ 61

'19 53 56½ 55½ 56

Receipts week ending July 26, 438,330
dozen.

POULTRY

Wholesale prices are:

Leghorns, 21@23; large, 35@36; roosters,

young, 45@50; old, 18@20; broilers, 33@

37; fryers, 38@40; turkeys, 37@40.

Ducks: Indian Runner, 21@23; Pekin,

21@23. Squabs, 55@60; pigeons, doz., 2.35.

@2.50.

Belgian hares, live, 17@20; Jack rab-
bits, dozen, 1.50@3.50.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing

1,000 to 1,200 lbs., 9½@10; do, 1,200 to

1,400 lbs., 9@9½; do, second quality, 7@8;

thin, 6@7. Bulls and stags: Good, 4@5;

fair, 3@3½.

Cows and heifers: No. 1, 8@8½; sec-
ond quality, 6@7; common to thin, 2@4.

Calves: Lightweight, 10½@11; medium,

9@10; heavy, 8@8½.

Lambs: Milk, 11@11½; yearlings, 8@

8½.

Sheep: Wethers, 7@8; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 15½;

150 to 225 lbs., 16; 225 to 300 lbs., 15½;

300 to 400 lbs., 14½.

Virdee Packing Company quotes prices
on livestock, weighed and delivered off
cars at its plant, South San Francisco, as
follows:

Cattle: Good steers, 1,000 to 1,100 lbs.,

10@10½; top steers, 1,100 to 1,200 lbs., 9@

@9½; top steers, 1,200 lbs. and over,

market price; good cows and heifers, 8@

8½; No. 2 cows and heifers, 6½@7; good

ishd, 100 to 150 lbs., 15½; 150 to 225 lbs.,

16½; 225 to 300 lbs., 15½; over 300 lbs.,

14½; under 100 lbs., 14½.

Calves: Light, 13@14.

Hogs: Top packer, hard and well fin-

ished, 100 to 150 lbs., 15; 150 to 225 lbs.,

16½; 225 to 300 lbs., 15½; over 300 lbs.,

14½; under 100 lbs., 14½.

Ewes: Full wool, 6½@7.

Wethers: Full wool, 7½@8.

Yearlings: 9@9½.

ONIONS

Onions: New reds, 50¢@75; yellows, 75¢@1.00 cr.; green onions, 1.25¢@1.50. Garlic, new, 10¢@12½.

POTATOES

River, cwt., 4.50¢@5.00; fy., 5.25¢@5.50; Sweets, No. 1, 10¢@12 lb.; No. 2, 4¢@6.

VEGETABLES

Wholesale selling price:
Beans: Lb., String, 7¢@12; Wax, 2¢@5.
Cucumbers: Bay, 1.75¢@2.25.
Corn: Sack, 3.00¢@3.75; poorer, 2.00¢@2.25.
Eggplant: Livingston, 1.50¢@1.75.
Okra: Bx., 1.00¢@1.25.
Peppers: Bells, 10¢@12½ for large, 5¢@8 for small; Chilli, lug, 75.
Peas: Lb., green, 6¢@10.
Tomatoes: No. 1, 1.50¢@1.75; No. 2, 60¢@80.

FRESH FRUITS

Apples: Red Astrachan, L. A., 2.00¢@2.50 for 4-ter, 1.50¢@1.75 for 4½-ter; unwrapped, 75¢@1.25; Gravenstein, unwrapped, 1.75¢@2.00; wrapped, 4-ter, 2.75¢@3.00; crab, 1.25¢@2.00.
Apricots: Imperial Valley, Los Angeles lugs, 4¢@8 per lb.
Bananas: lb., 8¢@10.
Berries: Strawberries, large, 75¢@1.15; small, 65¢@90. Loganberries, red, 50¢@75 per drawer. Raspberries, 1.50¢@1.75 per crate, 70¢@90 per drawer. Blackberries, 35¢@50 per drawer.
Cherries: Black, 1.50¢@2.00 per drawer; hawks, 10¢@17½ lb., according to quality; Royal Anne, lb., 10¢@12½.
Currants: 50¢@65 dr.; 4.00¢@7.00 ch.
Figs: 75¢@1.00 for white and Brunswick per box of one layer; two layer, 1.50¢@2.00.
Grapes: Malaga, 3.00¢@3.50 per crate; Fountainebleau, 1.50¢@2.50.
Melons: Turlock ponies, 2.50¢@2.75; standard, 3.50¢@3.75; flats, 1.25¢@1.50 per box; Imperial, standard, 2.00¢@3.00; ponies, 1.75¢@2.00; flats, 75¢@1.00; Honey Dew, per crate, 1.00¢@1.50; casabas, nominal. Water-melons, Imperial Valley, 3¢@3¼ per lb.
Peaches: Boxes, 75¢@1.50.
Pears: Madeline or Dearborn, lugs, 2.00¢@2.50; small, 1.00¢@1.25; Bartlett, No. 1, 3.50¢@4.00; No. 2, 2.00¢@2.25.
Pineapples: Doz., 3.00¢@4.25.
Plums: Tragedy, 1.50¢@1.75 per crate; Santa Rosa, 1.50¢@1.75; Climax, 1.25¢@1.50; Clyman, 1.25¢@1.50.

CITRUS

Box: Lemons, standards, 2.00¢@5.00; lemonettes, 1.50¢@2.50; grapefruit, 2.75¢@4.00; Navel oranges, 5.00¢@6.50.

DRIED FRUIT

Peaches—1920.
California Peach Growers, Inc., prices:
Practically peeled—
Cartons, 60 11-oz. per case.....9.00
Cartons, 24 2-lb. per case.....10.20
Cartons, 18 5-lb. per case.....10.50
Apricots—1920.
California Prune and Apricot Growers, Inc., prices:
"Growers" "Sunsweet"
Choice@22½@24
Extra choice@24½@26
Fancy@26½@28
Extra fancy@.....@30
Fancy, Moorpark@.....@30
Extra fancy, Moorpark@.....@33
Standards@18
Slabs@20
San Francisco:
Honey Bee:

BEANS AND PEAS

California Bean Growers Association, San Francisco
There has been no material change in the California bean market since our last report to you and we do not look for much activity until the latter part of this month or, perhaps, next month. Quite a little interest has been shown recently in California Pinks but the White varieties have been very inactive. The trade here is offering for shipment at about the following prices:
Large Whites6.15¢@6.30
Small Whites5.75¢@6.10
Pinks6.65¢@6.75
Cranberries6.75¢@7.00
Black Eyes8.25¢@8.50
Red Mexicans8.25¢@8.50
Red Kidneys14.00¢@14.50
Bayos10.25¢@10.50

HOPS

1919 crop, 85¢@1.00 per lb. Prices to growers for 1920 crop, 65¢@80 per lb.

HONEY

Reported by Rafael & Wing in Western Honey Bee July 5:
Small lots of honey are beginning to arrive, and prices show a tendency to weaken. Buyers are buying only for their immediate needs. Reports from different Valley points tend to show that the crop will be much better than last season. Bees are in better condition than at the same time last year. Several large lots of Hawaiian honey are offered, with no takers.

Prices to producers as follows: White orange, 20; light amber orange, 18¢@18½; light amber alfalfa, 16¢@17; amber, 14¢@15; Beeswax, 40¢@42.

GRAIN

Wheat: 4.20¢@4.35.
Oats: Red feed, 3.00¢@3.15.
Corn: California Yellow, 3.65¢@3.75 per cental; California milo maize, 3.50¢@3.65.
Barley: No. 1 feed, 2.75¢@2.85.

HAY

Under date of July 24, A. W. Scott Co. says:
Receipts past week 2,838 tons. San Francisco market still has almost no movement. Most of the arrivals are for immediate consumption. Throughout the country reports are that some farmers are storing in public warehouses, but the majority of hay producers are still hoping to sell before the rains.

We quote today wholesale prices in carload lots (old crop) as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.)

Wheat hay, fancy.....28.00¢@30.00
Wheat hay (light 6 wire bales) 26.00¢@28.00

Tame Oat hay26.00¢@28.00
Wild Oat hay20.00¢@22.00
Barley hay20.00¢@23.00
Alfalfa hay first cutting20.00¢@25.00
Alfalfa hay second cutting24.00¢@28.00
Alfalfa Growers of California quote prices for Northern Districts:
No. 1 dairy alfalfa33.00
Standard dairy32.00
Stock hay28.00

Citrus Markets

Los Angeles, July 28, 1920.

Valencias are still selling at very satisfactory prices. The auctions are not showing as high prices as last week. In fact there have been no sales reaching the \$10 mark this week. The slight easing of the market has probably been caused by the very liberal shipments.

There still remain on trees around 5,000 cars which is hardly sufficient for supplying the market until Navel is ready. It now appears that the Navel from the Tulare district will be a rather short crop, this because of the excessively heavy June drop.

As to lemons there is no market. Imports great and flooding every Eastern market.

Shipments

Shipments of oranges to date from Southern California since November 1, 1919: Oranges, 25,772 cars; lemons, 6,500; total, 32,272. To same date last season: Oranges, 28,736; lemons, 8,243; total, 36,979. From Central California to date this season: Oranges, 5,375; lemons, 288; total, 5,663. To same date last season: Oranges, 3,714; lemons, 251; total, 3,965. Northern California this season: Oranges, 261; lemons, 23; total, 284. To same date last season: Oranges, 244; lemons, 2; total, 246.

AT THE AUCTIONS

July 23

New York: 27 or., 2 lem., 1 grapefruit. Val. 3.15-9.70, grapefruit 3.15-5.55, lem. 1.80-2.20.

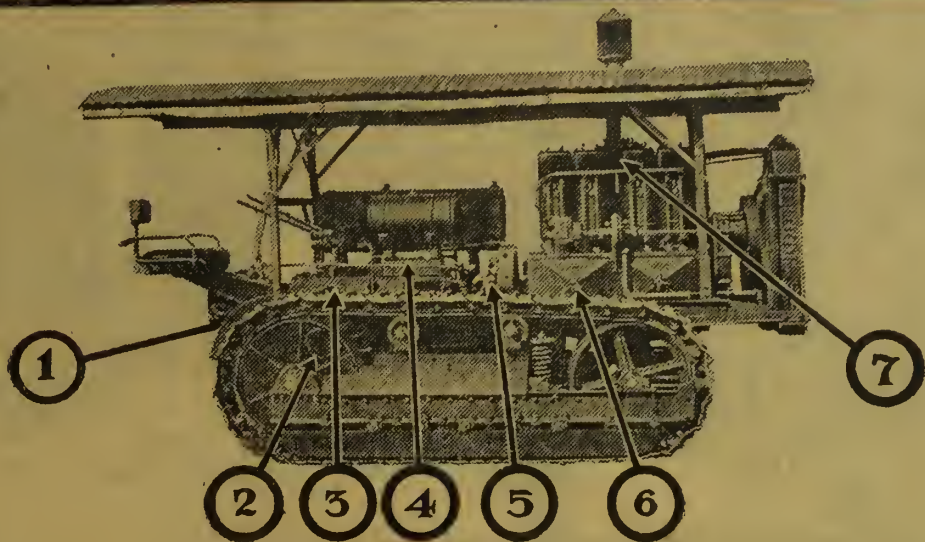
July 24

New York: 22 or., 2 grapefruit, 1 mixed, 1 lem. Val. 2.60-7.55, grapefruit 1.60-2.95, Seeds. 1.75-3.40, lem. 2.40-2.80.
Boston: 6 or., 6 lem. Val. 3.65-6.60, grapefruit 4.25-4.40, lem. 55-1.50.
Philadelphia: 4 or., 4 lem. Val. 3.65-6.70, lem. 65-2.15.

WEATHER REPORT

San Francisco, California, July 24, 1920.

Stations	Rainfall		Temp.	
	Wk.	Season.	Norm.	Max. Min.
Eureka	.00	.12	.11	66 52
Red Bluff	.00	.01	.00	96 62
Sacramento	.00	.00	.00	92 54
San Francisco	.00	.00	.01	72 52
San Jose	.00	.00	.00	90 46
Fresno	.00	.00	.00	100 60
San Luis Obispo	.00	.00	.01	88 50
Los Angeles	.00	.00	.00	88 61
San Diego	.00	.00	.00	76 60



Working Parts Easily and Quickly Reached

This is a leading feature with the Best Tracklayer. Every tractor owner will recognize at once the advantage of having the working parts of his machine within easy reach at all times. Particularly when he is in the middle of a big job. By the diagram above and the corresponding explanations below, we show how the principal working parts of the Best Tracklayer can be reached within a few moments with very little effort.

- 1 At the rear is a large port through which, when opened, the main bevel gears connecting main drive shaft and cross shaft can be easily reached.
- 2 Main drive pinions may be removed through the inspection ports in the sprocket wheel. This corresponds to a full-floating rear axle on an automobile.
- 3 On the side plates of rear housing are hand holes, one on each side of tractor, the covers for which are removed by turning a single hand screw. Through these holes the multiple disc steering clutches are quickly reached. If required, the entire side plates can be removed by unscrewing the bolts, which takes but a short time, as space above plates is perfectly clear for free action with a wrench.

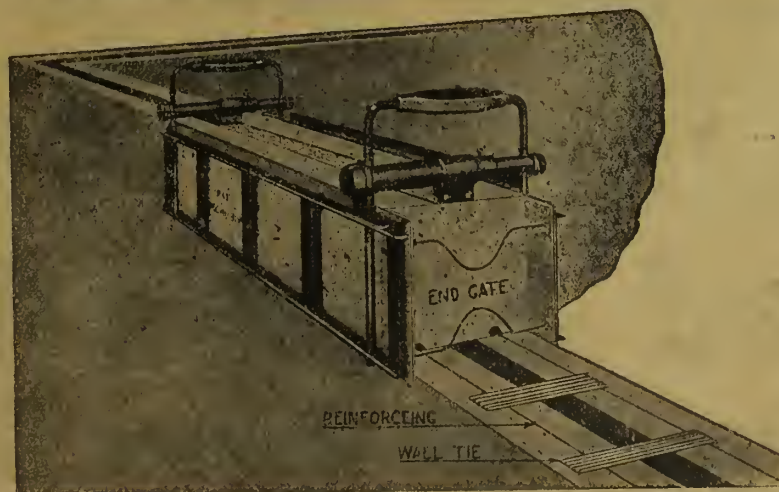
- 4 Transmission gears and bearings are fully exposed by removing top plate of transmission housing to which is attached small oil tank. This is quickly done as bolt heads are clear of all encumbrances and pipe connections to tank consist of two easily detached unions.
- 5 Main Clutch is "dry" and hence needs no housing. Parts are therefore reached instantly.
- 6 Extra large inspection ports in the crank case enable you to make bearing adjustments easily and to remove pistons and connecting rods without "tearing down" anything or disturbing valve mechanism.
- 7 Rocker arms may be inspected by lifting hood placed over top of cylinders.

All other working parts of the Best Tracklayer are as readily accessible. But accessibility is just one of many features which have made the Best Tracklayer famous. These features are described in a catalog which we will be pleased to send you. If you are interested in tractors, send for it.

C. L. Best Gas Traction Co.

San Leandro, California

BEST TRACKLAYER SIXTY



This cut shows mold ready to be filled as placed on the wall

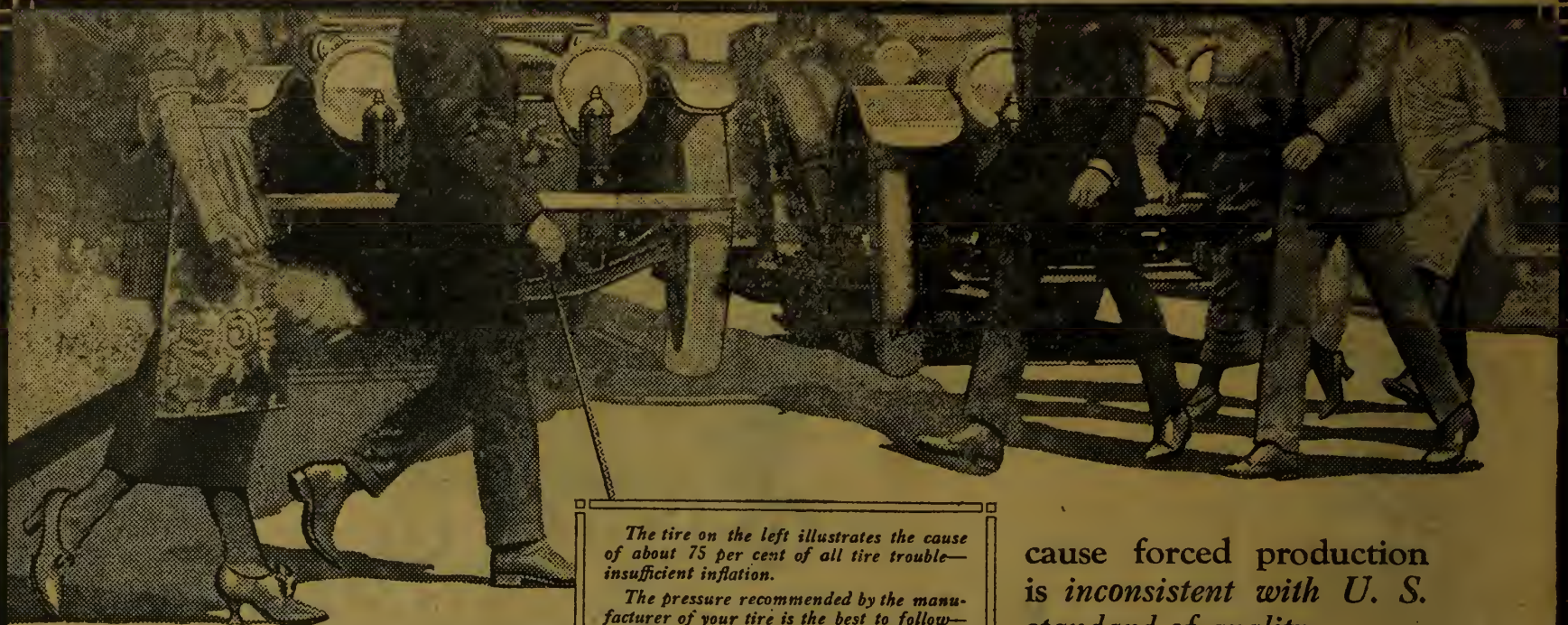
Conger-Phelps Sales Co.

631 San Fernando Building
Phone 114-23 Los Angeles, Cal.

Cement Molds to Build The Hollow Wall Way or Solid Walls

Ranch Work Houses Silos
Easy to Handle—Rapid—Substantial
Saves Time and Money
Ask Us for Circular No. 2

Opinions about Tires should be Weighed as well as Counted



The tire on the left illustrates the cause of about 75 per cent of all tire trouble—insufficient inflation.

The pressure recommended by the manufacturer of your tire is the best to follow—and it cannot be estimated by kicking the tire or punching it. The regular use of a reliable air gauge is the best safeguard against punctures, rim cutting and fabric breakdown.

THERE is hardly a motorist who hasn't at some time or other in his experience had a tire dealer attempt to sell him a tire by representing it as the fastest seller in town.

More attempts are probably made to sell tires by playing to the motorist's alleged weakness for "crowd of buyers" than by any other known method of selling.

* * *

The *experienced* motorist, of course, refuses to surrender his individual judgment to any crowd or mass of whatever size.

Too often he has seen the results of accepting

opinions at their face value, without first finding out *what they are based on.*

And you will find him going more and more to the dealer who has something to offer in support of his tires other than "crowds of buyers" and "numbers of sales."

* * *

The opinion in favor of U. S. Tires is not based solely on the number of them in use.

Great as that number is, it is due to something besides clever arguments.

Thousands of motorists today are putting up with second choice tires be-

cause forced production is *inconsistent with U. S. standard of quality.*

The United States Rubber Company's enormous investment—greater than that of any concern in the industry—has always been aimed *solely* at quality.

Building a *tire* first and a market afterwards. Thinking of the *individual user* instead of the number of sales.

One of the reasons, perhaps, why there is now a scarcity of U. S. Tires.

* * *

If the time ever comes when U. S. Tires can be supplied to all, or nearly all, of the people who want them, they will still have *more to recommend them* than merely the largest following.

United States Tires

United States Rubber Company



Fifty-three
Factories

The oldest and largest
Rubber Organization in the World

Two hundred and
thirty-five Branches

CALIFORNIA CULTIVATOR

and **LIVESTOCK** and **DAIRY JOURNAL**

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

August 7, 1920

No. 6

A Sacramento Valley Lemon Packing House

A STORAGE house which maintains in its lemon rooms slight variation in temperature and humidity, while temperature outside shows a range of 50 or 60 degrees, is sure to attract some attention. Especially is this the case when it is known that the temperature and humidity are both under almost perfect con-



A Model Little House for the Packing of Lemons

Lemons from 740 acres of Colusa and Glenn Counties are packed through this house. Thoroughly up to date equipment is a feature.

trol and without the use of an ounce of ice and without refrigeration pipes.

Such a plant and packing house is located on the western side of the Sacramento Valley, up almost to the Glenn County line, though in Maxwell, Colusa County.



Interior of Hallway Supplying Air to Store Rooms

The humidifier is located just above the ceiling and from it the air is brought into this room and through doors shown at the side near the ceiling conveyed into the lemon room.

It is in the Mills orchards and is under direct supervision of D. B. Macoun, who has been with this orchard since the planting of the first nursery trees less than a dozen years ago. There are 740 acres on this ranch planted to lemons, 40 to oranges and about 20 to grapefruit—and it is luscious grapefruit. The lemons are filled with juice, are waxy and high class in appearance and are commanding most satisfactory sales even in these times, when the Mediterranean lemon covers the country.

The method of handling these lemons is very similar to that followed by other lemon houses, excepting that conditions in the Sacramento Valley call for special preparation of the storeroom. These rooms are arranged on either side of the long hall-like room shown in photo. The air for the rooms is supplied from this hallway after coming through the humidifier located above. This, in a word, is a series of blankets suspended from a water tank



Every Lemon Is Thoroughly Washed and Cleansed

No matter how clean the fruit may be it is all sent through the washer as soon as delivered from the orchard. After draining the fruit is trucked to the store rooms.

in such a way that through capillarity the moisture is drawn down the entire length of the wool blanket, perhaps three or four feet. These blankets hang close to each other and parallel. At one end of this humidifier a large electric fan sends a blast of air over the blankets, taking from them moisture and reducing the temperature. One standing in line with this current of air is almost chilled. This cooled, and to a degree moisture laden, air is then carried to the lemon store rooms.

This house is in charge of Mr. Foss, since the early 80's a worker in California lemons. (Continued on Page 154.)



THE more miles you ride
on Goodrich Tires, the
greater your wonder grows
that so many more miles of
service are still left.

Goodrich Tires

"Best in the Long Run"

FOUNDED 1870



The Goodrich Adjustment Basis: Silvertown Cords, 8000 Miles; Fabric Tires, 6000 Miles

California Cultivator

Vol. LV, No. 6

Los Angeles, August 7, 1920

One Dollar Yearly

In the Meat and Cattle Trade

By A. L. Spellmeyer



CATTLE have shown no great reaction in price and continue at low levels. Demand is making hog prices stronger but not on a basis to encourage feeders with present grain prices. Lambs are stronger and low stock in the city is causing advanced prices.

A Los Angeles meat war is foretold as the probable outcome of present conditions. The bulk killing seems to be changing from packers to independents as the competition appears too strenuous for the old liners on present margins and the retailers are both prosperous and independent with their great gross percentage on present meat sales. About the only way an adjustment to former killing proportions seems possible may come from two methods, one, control through heavier financing of feeder supply and the feed districts through direct purchase or contracted cattle, the other, cutting of meat to retailers below possible margin the independent can meet.

It is stated that the Oakland retail meat market has been shot to bits by Chinamen and others cutting margins and that the San Francisco independent kill exceeds the line packer kill in that city. There are signs of nearby markets jumping the prices now charged by city retailers with the exception of some of the cash down markets, which cut on limited quantities of certain meat cuts. It is logical that present gross cannot continue and that some source will be established in the near future either in large cash markets under producers' patronage, development of municipal marketing, which is advocated by many stockmen now, or in direct breaks among the retailer association ranks.

Most men thoroughly realize that a

condition cannot continue with producers losing 30 per cent and consumers paying prices based on 60 to 80 per cent gross retail percentage on meat.

In this city today carcass beef steers can be bought at 15 to 18 cents, cows from 12 to 16, veal from 15 to 21, and I have seen carcass heifers, but good eating meat, which wouldn't bring 11 cents carcass price, and heavy calves, almost baby beef, which brought 13. Lambs today are bringing carcass 26 to 27 cents. It is claimed many retailers are cutting 35 to 40 cents from top steer carcass beef, and anyone knows what prices they pay. Meat on a fact basis allowing old time percentages of 20 to 25 per cent retail should not be cutting out over 22 cents for top steer beef nor 15 cents for top common cow beef. Retailers would claim such margin impossible, but the actual producer of those cattle is not even permitted any profit and is today selling his cattle at prices which mean great loss over actual cost and expense, forgetting even interest returns on his money.

It is plain to anyone who figures two and two make four that an economic condition such as exists now cannot continue very long.

A number of men figure stockyards under free management would prevent such a situation as arose this spring and summer and that men would come from all over to take these young heifers and steers which had no market and which were forced to killing pens, and I know of hundreds of twos heifers and young steers which actually did not net killed \$40 when their range value under normal prices

should have been \$65 per head in thin condition.

It is rumored that Kern County people sold 500 cows at $8\frac{1}{2}$ Bakersfield and that Hearst people sold some nine cent cows. The steers are fairly well cleaned up in good heavy grades.

However, Southern Arizona is shipping in many carloads of rather inferior cattle and calves which, however, kill white and make meat. The old liners seem badly disorganized. They seem drunk with a thought of power they don't possess. The eight cent steer beef price on anything good turned out a boggy, myth and failure. Many changes are rumored and several affect local management. It will be with regret that we see some of these changes occur, as many men would prefer a little cow sense and change of attitude and have the outfits cooperate with producers to the limit of their managerial power.

To be just to the old liners as far as Los Angeles is concerned, they are today paying the high price for the top steers as compared to independents. It seems a crime that prospective fine business people in many ways cannot compromise their ideas and attitude to A B C economics, stimulate production through a fair profit and forget all this worn out combination and arbitrary methods stuff.

In the Cultivator in the very early spring attention was called to the "pin headed" policy of certain killers in forcing prices below production costs to cattlemen, and the result has been loss of trade, loss of confidence and loss of the bulk which means profit. A month ago I tried to see a certain packer manager. I

wanted to offer him a few calves and some steers, but it would have been an easier job to have picked J. O. himself.

The old stalwart in the cattle trade, Bill Dysart, when he worked for the packers was the most clever little manipulator of this market for many years any market district ever had, but he was always encouraging production. Bill Dysart is today active in cattle trade circles and will be as a pro-producer about as weighty a brain and help as the cow men can get. It was Bill Dysart who built up some of our big men to their present proportions. He is a cow man who ranks with John McCray of Kern County and with judgment that ranks with the cow sense of H. A. Jastro.

There is no activity or demand in stock cattle, and things seem going from bad to worse, but the rock bottom having been already reached, no cattleman cares very much what may come. The banks seem willing to loan on good cattle paper. Neither the Bank of Italy nor the First National and Los Angeles Trust and Savings, both mighty, have so far as one can hear wretched in their support of production of cattle or farms. They have "carried through" and where they demanded protection and curtailment have been fully justified by sound business rules.

It is probable that 20,000 cattle can be fed this winter in Los Angeles if cattle can be secured. A few thousand cattle will go shortly on beet tops, but there will be much beet tops left without cattle to use them, and prospects are for very early rains.

Developments in this state will be interesting to watch during the next year in marketing of cattle and meat circles.

Factors Influencing Fumigation Results

Summary of Paper Presented by R. S. Woglum
at Covina July 15



THERE is much unrest on the part of some growers, particularly in the Charter Oak and Covina districts, over poor results from fumigation, and this dissatisfaction coming at the same time with the widespread use of liquid hydrocyanic acid, has had a tendency to lead many to believe that this new material is a failure. Now, the use of liquid hydrocyanic acid is by no means a failure, but results with it compare favorably with those under other methods in past years. There are a number of important factors that enter into the complex which means effective fumigation, and failure to observe one or more of these is always a reason for a certain amount of poor work. Some of these most important factors are off hatch of scale, temperature conditions, heavy cover crops, resistant scale, insufficient dosage, poor equipment and careless work.

Off Hatch

The black scale is the paramount problem of this district. It has one generation a year and is hatching at

the present time and in most orchards will not be in a condition suitable for fumigation for fully a month. This insect is susceptible to cyanide gas according to age, the youngest insects being easiest to destroy, the adults and eggs most difficult. Therefore, fumigation to be most effective should be at the time insects are immature. This is not always possible, because of "off hatch," and in such cases a double fumigation is necessary. Where a double fumigation is practiced, the first application should be early in the season, as soon as the scale is in condition. The time of the second will depend upon the rapidity of egg deposition and the hatch. If the weather is warm this period of the second fumigation would follow the first by from two to three months.

Temperature

Temperature is an important factor modifying fumigation results. For several years I have noted better re-

sults generally against the black and purple scales in most districts early in the autumn than late in November or December on cold nights. Careful experimental work performed during the past two years has fully confirmed these earlier observations. It is also an outstanding feature in daylight work that the scale kill on the sunward or hot side of the tree is much better than on the shaded side where the temperature is low.

Heavy Cover Crops

The presence of heavy cover crops in an orchard has an important bearing on effective fumigation. This is due to two reasons—first, the tents do not set close to the ground, so permit the escape of gas beneath; and the gas is cooled so low (36-37 degrees below freezing) when it escapes from the nozzle that it in considerable part freezes over the cover crop in its path. This results in an escape from the tent of a large part of that first gas-

fied before the frozen material has become fully evaporated in gas. As a result the desired gas concentration is never attained and poor results follow. Thus it is apparent that heavy cover crops about trees at the time of fumigation should be avoided.

Resistant Scale

Now at Charter Oak there has been much dissatisfaction over black scale control for several years. It is claimed by several, including fumigators as well as inspectors, that in some orchards the scale is with difficulty controlled even under ideal conditions. It has been stated that small back scale escape even at 100 per cent dosage. I know that for most of California a three-fourths schedule will destroy the smaller sizes of black scale, and if this is not the case at Charter Oak it would indicate that the black scale is assuming a role that we have previously recorded only for red scale and then only at Orange and Corona. If it requires a very heavy dosage to destroy the black scale in this district it is then necessary to use such dosage.
(Continued on Page 154.)

Agricultural News Notes of the Pacific Coast

Northern California

Lake County pear growers met July 23 to discuss prices.

Chico, Butte County, is erecting a \$10,000 dehydrating plant.

California Peach Growers, Inc., has established office at Chico.

California will ship over 1,200 cars of fresh Elberta peaches.

Hayward, Alameda County, is planning for a farm products show.

Oroville, Butte County, is now harvesting its greatest peach crop.

A Japanese at Yuba City has been arrested for selling wormy apples.

The cannery at Gridley, Butte County, is now running with about 400 employees.

Tuolumne County farm bureaus are appealing for irrigation of more of her fertile acres.

Commissioner Harney of Yuba County reports a new weed pest of the genus verbenia.

Some of Eldorado County's dry land cherries sold this season as high as 35 cents per pound.

One almond grower of Tuolumne County is planning to plant 100 acres to almonds next season.

Sonoma County is now shipping out Gravensteins under full inspection, every car carrying certificate.

The aerial duck patrol over the rice fields of Glenn and Colusa Counties will be started on August 15.

Another postponement has been secured by the rice growers in the fight for the waters of the Sacramento.

Yuba County fruit growers report "No shortage of labor; some expert workers making \$9 and \$10 per day."

Boys of California are planning to get some of the pig club prizes to be awarded at the California state fair.

The prune growers association maintains early estimate of a 200,000,000 pound output of prunes for the state.

Grape growers of the state have organized a campaign against the Harris state prohibition enforcement law.

Sutter County is picking Tuscan Clings. The county's crop this season will approach a valuation of four millions.

County Commissioner H. E. Woodworth of San Mateo has resigned to accept position in the Philippine Islands.

The California Bean Growers Association will during the next 60 days complete its payments on the 1918 bean crop.

Apple shippers of the Gravenstein growing district of Sonoma County have pledged themselves to bear cost of state inspection.

Horticultural Commissioner Fred Stokes of Lake County reports brisk selling of pears, prices varying from \$70 to \$80 per ton, orchard run.

G. W. Bailey, bacteriologist of Salt Lake City, is visiting the state department of agriculture, making investigation as to state sanitation work.

Secretary Durkee of the chamber of commerce of Chico is appealing for more attention to health and shapeliness of the shade trees in the city.

California will manufacture and bottle grape juice on a scale immensely greater than ever before. The California Wine Association has a plant in Sonoma County of two and a half million gallons capacity.

Central California

San Joaquin Valley cotton growers recently met at Lindsay.

Fish cutters in Monterey packing houses are out on strike.

First crate of cantaloupes shipped from Turlock was sold at \$100.

Dates of the Patterson fair have been changed to August 19 to 21.

Fresno is making substantial improvements on the district fair grounds.

The packing house at Clovis, Fresno County, is now shipping Thompson Seedless.

One Lodi Tokay vineyard of 24 acres has recently sold its crop "on the vines" for \$15,000.

The third quarterly convention of the Farmers Union of the state was held at Modesto, July 29.

Atwater, Merced County, has shipped nearly 700 cars of farm products during the past year.

The city of Modesto has taken over a large tract of land on the west side for fair grounds and athletic fields.

Farm bureau members of Madera, Merced and Stanislaus Counties have organized and incorporated a farm bureau exchange.

The California Bean Growers Association is testing out in court validity of the contracts between growers and the association.

Cattlemen's Association of California is conducting campaign to induce registration on every brand used on cattle in this state.

California Peach Growers Inc. has named prices on peaches for the coming season. They run about 15 per cent over those of 1919.

The Modesto branch of the California Cooperative Canneries expects to be in full swing within a few days, using at least 500 employees.

To aid in the heavier loading campaign which is being waged all over the Pacific Coast, the Southern Pacific Company is offering cash prizes to all agents.

County Bee Inspector Strubel of Santa Cruz has been exonerated of charges of favoritism in barring out new lots of bees that their owners wished to bring into the county.

Turlock is greatly exercised over recent arrival of 1,200 Japanese laborers, and the Modesto Herald refers to a rumor that "the Japanese are here for the purpose of underbidding white labor."

The supervisors of Santa Cruz County are discussing the matter of ordinance calling for appointment of bee inspector and giving him power to restrict importation of colonies of bees from other counties.

Grape growers in session at Fresno recently discussed grape shipping. Dr. Nougaret and F. W. Read of the state department of agriculture were present. Grapes testing less than 17 per cent may not be shipped, that is, excepting Emperor, Gros Colman and Cornichon, which shall not show less than 16 per cent.

The Associated Raisin Company has placed saccharometers for testing sugar content of raisin grapes in its plants at Fowler, Selma, Kingsburg, Parlier, Del Rey, Sanger, Reedley, Dinuba, Clovis, Burness, Blois, Cutler, Hanford, Armona, Oleander, Monmouth. The testing service of the association is free to grower members.

Southern California

Cotton gin at Seeley, Imperial County, ginned its first bale July 26.

Escondido is planning as usual for her big grape day celebration on September 9.

Serious infestation of aphids is reported in the cotton fields of Palo Verde Valley.

The Potato Growers Association of the San Bernardino Valley last week sent out ten carloads.

The Los Angeles County farm bureau is standing solidly behind dairy-men in the milk price rise.

Lists of places have been announced where fire permits may be secured for Santa Barbara national forest.

Cotton pickers from Old Mexico are arriving in the Palo Verde Valley. Picking will soon begin in earnest.

The Honey Growers Cooperative Exchange, with headquarters at Los Angeles, has announced opening price 20 cents.

Los Angeles County farm bureau is making plans for its annual. Last year's was held at the Baldwin Ranch, Santa Anita.

Peach canning has ended at Hemet and canneries are now working on peaches which are coming in several days earlier than usual.

The federal reclamation service has opened an office at El Centro as headquarters for the survey of the proposed all American canal.

The fruit growers of the Costa Mesa-Fairview section of Orange County have organized to build and conduct a wayside market.

Citrus growers of the Escondido district are planning an auto trip through citrus sections of Riverside, Orange, San Bernardino and Los Angeles Counties.

The California Lima Bean Growers Association held a barbecue at Orange County Park, Saturday, July 24. Manager Churchill was one of the principal speakers.

Orange growers of the Grand Terrace section of Riverside are going after the Argentine ants, which they say are destroying the scale parasites in their orchards.

The state market commission has representatives in Imperial Valley to interest growers in an Imperial Valley Marketing Association to handle their crops cooperatively.

The Corona farm center of Riverside County has committee looking after welfare of the members. A poultry culling demonstration is one of the latest activities of the center.

Prices to be paid by beet growers for topping in the Betteravia district of Santa Barbara County have been agreed on. Four tons of beets to the acre will bring \$11.40; ten tons, \$15.

Apricot growers who are members of the State Cooperative Association will receive from 18 to 33 cents a pound for their dried 'cots, according to prices just named by their board of directors.

Riverside County board of supervisors has fixed upon a basis of valuation for taxation on bearing date trees as follows: Deglet Noor, four years old, \$1, with addition of \$2 per year over that age; Perslans, four years old, \$5, with \$1 per year added; seedlings, four years old, \$1, \$1 per year added.

The Coast and General

Hood River has shipped 54 cars of strawberries.

Polk County, Oregon, fair at Dallas, September 9-11.

Southwest Washington fair at Chehalis, August 23-28.

Tillamook County, Oregon, fair at Tillamook, September 14-17.

Maricopa County roads in Arizona are to be posted by the supervisors.

Kings County, Washington, Home Convenience Fair begins today, July 27.

Buyers have been paying on a 16 cent basis for small quantities of dried prunes.

The commercial apple crop of the United States will be greater than that of 1919.

British Columbia reports plums, prunes and cherries only about a 75 per cent crop.

Thurston County, Washington, bee keepers are working to secure a county bee inspector.

Watermelon shipments from Florida are the heaviest ever and will aggregate over 5,000 cars.

The Arizona college of agriculture has promised to carry on some seed growing experiments.

Nevada expects a bumper crop of potatoes this year, practically a million bushels from 6,000 acres.

The Jersey Breeders Association of Clackamas County, Oregon, held its July meeting on the 31st at Sandy.

U. S. Field Agent Kent of the bureau of crop estimates reports Oregon's potato crop at 5,500,000 bushels.

Grays Harbor County Grange has recently purchased a \$30,000 stock of goods of an established mercantile company.

Work is being rushed on new buildings at the Oregon agricultural college, which was abandoned during the war years.

A bill basing rental charges upon the assessed valuation of the property will be introduced in the next Arizona legislature.

The National Onion Association recently met in Canton, Ohio, and adopted grades for onions as recommended by the department of agriculture.

The farm bureau of Sherman County, Oregon, has placed an order for 75,000 gallons of distillate with a California concern. This will be distributed among farmer members.

A good roads program has been adopted in Lane County, Oregon, in furtherance of the improvements inaugurated by a \$2,000,000 bond issue.

Cotton pickers of the Salt River Valley of Arizona have organized and are demanding \$4 per day. Last year they received three cents per pound. This year's request is for full day's pay regardless of ability. A good picker can pick about 100 pounds daily.

Opening of the new Jerome state highway connecting this mining town with Prescott, the county seat, will shorten the time between the two towns to about one and a half hours. It is expected that the road will be opened about August 10. It is said that this will be one of the finest scenic routes in Arizona, which boasts of many that rival the Alps in grandeur.

Dehydration of Fruits

By W. V. Cruess

DURING the past two years interest in the drying of fruits by artificially applied heat has increased to a most remarkable extent. A number of very large installations for the evaporation of both fruits and vegetables have been established; still others are under process of construction. Several of these represent investments of over \$200,000 each. In addition to these very large plants, smaller units costing from \$1,000 to \$25,000 are being built in such numbers that we have been able to keep in touch with but a small proportion of them.

Those smaller plants are being built

In addition to the advantages just outlined the evaporator may be operated independently of the weather. As one evaporator manufacturer has put it, "The sun always shines for the evaporator."

What Constitutes a Good Evaporator

To those who have decided to build an evaporator comes the problem of

at least 300 feet per minute in fan evaporators.

Sixth, the dryer should be fireproof. Hollow tile construction is excellent on this account and is not excessive in cost.

Seventh, and above and beyond all else, see one of the dryers you propose to build under operation for at least 24 hours on a full load. Many builders of evaporators have deceived themselves, and customers as well, by drying a tray or two at a time in demonstrations. Apricots that may be dried in four hours in small lots will require 12 to 48 hours in the same evaporator loaded to capacity. Much of the present dissatisfaction can be traced to this fact.

Dehydration of Grapes

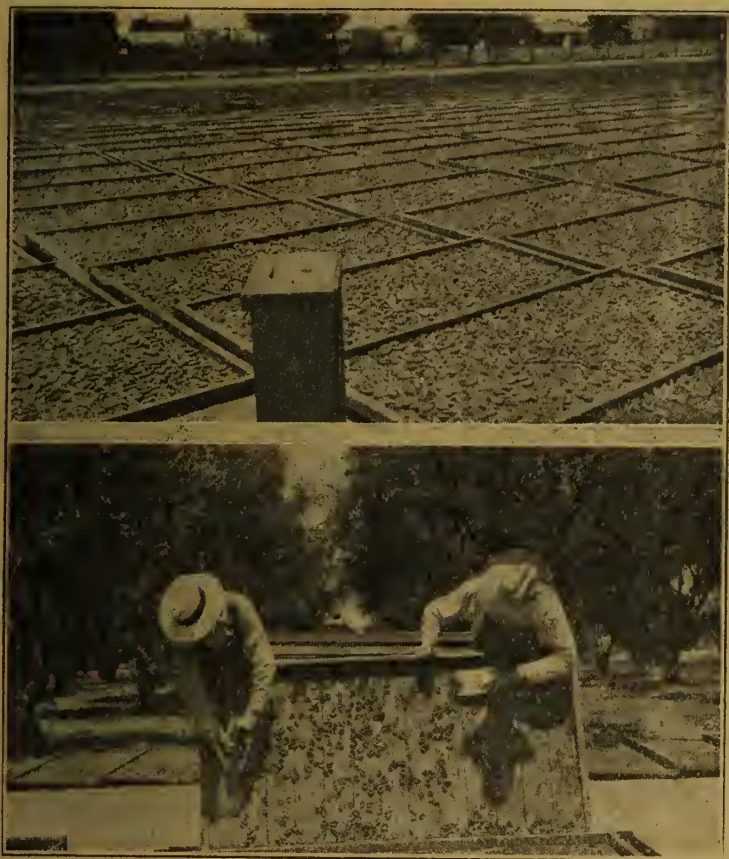
The dehydration of grapes, especially wine grapes, will assume large proportions during the coming season to supply Eastern and foreign markets. A satisfactory grape dryer should dry dipped wine grapes in 15 hours or less. This may be taken as a measure of the dryer's performance.

The results of the university's investigations in the evaporation of grapes are given in full in a recently issued bulletin entitled "The Evaporation of Grapes" (Bulletin 322), by Cruess, Christie and Flossfeder. This may be had free of charge by writing

grapes require dipping to obtain rapid drying. For such grapes a three per cent lye solution, actively boiling, is required. Immersion for 20 to 40 seconds is necessary to check the skins satisfactorily. The dipped grapes must be rinsed in water to remove lye. 3. Sulphuring is not necessary. 4. Screen trays are very objectionable because the dry grapes adhere to the screen with bulldog tenacity, thus increasing the total labor costs about 75 to 100 per cent of that required for trays made with slat bottoms, to which the dried grapes do not adhere. 5. To stem satisfactorily the grapes must be dried to less than ten per cent moisture, but dried wine grapes may carry 20 per cent moisture without spoiling. 6. A temperature of 165 to 170 degrees Fahrenheit may be used safely through the drying period. The grapes are most sensitive to heat when almost dry. During the initial stages of drying temperatures up to 190 degrees Fahrenheit may be used. Grapes dry twice as rapidly at 170 degrees as at 135 to 140 degrees Fahrenheit.

Recent Tests on Apricots

In cooperation with A. W. Christie and F. E. Neer, the writer recently completed an interesting series of tests with the university farm evaporator at Davis on apricots. Some of the results are given herewith: The fruit under average running conditions was dried in from 11 to 14 hours at a temperature of 165 to 170 degrees Fahrenheit. The dryer held approximately three tons of apricots as compared to its capacity of six tons for



Old Way of Drying Fruits

for either one of two purposes—the dehydration (evaporation) of fruits and vegetable to replace the sun dried products, or as an insurance against rain damage, to be used only in years of unfavorable sun drying weather. Until recently practically all fruit evaporators (except those in use for apple drying) belonged to "rain damage insurance" group, but at the present time evaporators for every day use have the center of the stage.

Properly dehydrated or evaporated (these words mean the same thing), fruits are superior in several ways to the sun dried article. They are dried as a rule under more sanitary conditions and therefore carry less dust, etc., and are less subject to insect infestation than the sun dried fruit. They require much less sulphuring and in many cases sulphuring is omitted. Therefore, there is less objection from food faddists to their sulphurous acid content. Dehydration produces fruit with more of the fresh fruit flavor than does sun drying because it is dried more quickly, at higher temperatures and out of contact with the sun.

Dehydrated Muscat grapes possess the full rich flavor of the fresh grapes but do not have the "raisin flavor." It is entirely different from the sun dried product. The same is true of peaches, prunes, pears, apricots and berries. Some who compare the two products prefer the sun cured fruits; others, the dehydrated. "They are different" is probably as much as can be said at present. Less difference is to be found between sun dried and dehydrated prunes than with other fruits. Personally, the writer prefers the dehydrated to the sun dried fruits in all cases.

selection of an efficient and satisfactory machine. The question also arises: "Shall a commercially built machine be purchased or shall a machine be built?"

If a commercially built machine is chosen, the purchaser should investigate to assure himself that he is purchasing an efficient machine.

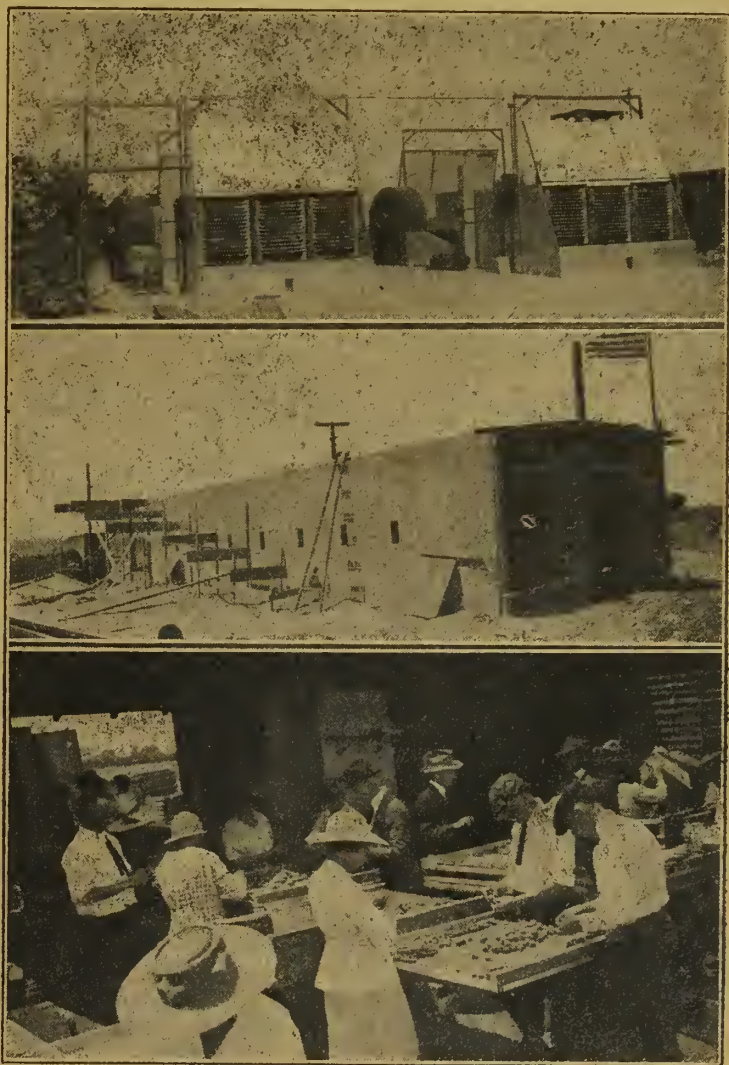
First of all the drier should not be excessive in cost. Our investigations show that a cost of more than \$750 per green ton capacity per charge of prunes or grapes is excessive.

Secondly, it should be economical to operate both as regards fuel and labor consumption.

Third, it must have an adequate heat supply and ample facilities for distributing that heat to the fruit. More evaporators have failed because of insufficient heat than for any other reason.

Fourth, the heat must be delivered evenly to the fruit in order that all trays in the stack or on the car dry evenly, in order that excessive cost for sorting and rehandling trays shall not result.

Fifth, it must have adequate air circulation. Heat is carried to the fruit in most dryers by air, hence the need of rapid air flow. If it is a fan operated evaporator there should pass through the dryer for every pound of water removed per minute under average conditions at least 1,500 cubic feet of air per minute to furnish the heat required. To carry away the moisture only about one-seventh this amount of air is needed. Some have failed because they have chosen this latter figure for air flow. The speed of air flow across the trays should be



The New Way

Upper: Ashley & Brown's drier, Lodi. Center: large size University type drier. Lower: Students at University Farm cutting cots for drier.

College of Agriculture, University of California, Berkeley.

Among the results reported are the following: 1. Sketches and specifications are given for an evaporator to hold six tons of grapes, complete with shed, trays and dipping outfit. The plant will cost about \$3,600. 2. Wine

grapes or prunes. Green colored apricots dried in the sun became yellow during drying; the same fruit in the evaporator retained its green color—a possible objection. One hour's sulphuring was sufficient for the fruit dried in the evaporator. Three to five hours time was required for the

(Continued on Page 171.)

Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

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Combined with California Cultivator 1914
Livestock and Dairy Journal, Established 1901,
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Saturday, August 7, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

KEEP THOSE BONDS

Liberty Bonds are still holding around 85 to 90, according to the particular issue, but they are, or ultimately will be, worth their full face value. Hence, why worry? Buy more bonds to put with them.

They are a good three in one: Good income; tax exemption; perfect safety.

PEAR DAY

All the Antelope Valley pear belt is celebrating with Littlerock on Saturday of this week. It is Pear Day. There are thousands of acres of pears in this valley, but Littlerock has the distinction of having the largest number of bearing trees. A lunch will be served to all attendants. There will be a program, and, best of all, a taste of Antelope Valley fruits will remain because of cartons of the fruit which will be given to the attendants. There are some 5,000 acres of Bartlett pears in the pear belt of this rich valley, and the enthusiastic boosters are saying: "It will be but a short time before we will be shipping 2,500 carloads of pears."

INCREASING ITS SCOPE

The stockholders of the California Nurserymen's Bud Selection

Association met last week in San Francisco and took steps to increase the influence and the usefulness of the association. A great work has been started and members felt that it should include representatives of the entire fruit growing industry. The name now is California Bud Selection Association, and fruit growers will join nurserymen in the work of the association and receive of its benefits. Manager L. B. Scott will make but slight modifications from former working plans.

LEMON BULLETINS

The bureau of plant industry of the U. S. D. A. is issuing two bulletins, or Professional Papers, having especial value for the lemon grower. Bulletin 813, in the Citrus Fruit Improvement Series, is "A Study of Bud Variation in the Eureka Lemon," written by A. D. Shamel, L. B. Scott, C. S. Pomeroy and C. L. Dyer. The companion paper is Bulletin 815, in the same series and by the same authors, "A Study of Bud Variation in the Lisbon Lemon." Bulletins in this series are sold at a nominal price and may be secured by application to Superintendent of Public Documents, Government Printing Office, Washington, D. C., at 25 cents each.

Under "The Importance of the Lemon Industry" the statement is made: "The total production in all states in 1909 was 2,770,313 boxes, of which California produced 2,756,221 boxes. In other words, California is the whole story in producing American lemons. In 1887 the state's output was 12 cars. This increased till in 1917 the output aggregated 7,915 cars."

BETTER FINANCE

There is still a material difference between the price the farmer must pay for capital to use to increase his business and the price which the manufacturer or dealer must pay. If the merchant is securing money at six per cent presumably the farmer is paying eight. The difference was even greater than that in the Middle West a few years ago. Today the consideration given to agricultural paper by the federal reserve bank has aided materially in securing this improved condition. There is opportunity for even more improvement, and if the hungry world is to be fed this improvement must be brought about.

Large manufacturers of farm power and implements are endeavoring to put their industries on a more satisfactory basis. This necessitates still more handling of farm paper. The necessity is not so apparent here, however, as with cattle paper. The wool grower is also in need of more capital than is now possible.

Guff and flattery have ceased to be stock in trade. Simply a chance to make a living and a little money is expected by the producer. If he doesn't get it he ceases to produce.

MUST HAVE LUXURIES

A few years ago we were boasting as a nation that the production of farm crops in this country had reached the enormous total of ten billions of dollars. It is possible it is several times that today. The idea in mentioning that enormous sum is only to make comparison with another set of figures secured through the operation of the war tax on luxuries.

Secretary Houston has permitted to be known a few figures regarding some of the luxuries annually consumed in this country. For instance:

Chewing gum	\$ 50,000,000
Candy	1,000,000,000
Soft drinks and ice cream	350,000,000
Cigarettes, \$800,000,000; cigars, \$510,000,000; tobacco and snuffs, \$800,000,000	2,110,000,000
Toilet soaps	400,000,000
Perfumery and cosmetics	750,000,000
Furs	300,000,000
Automobiles and parts....	2,000,000,000
Pianos, organs and phonographs	250,000,000

This is only a portion of the expenditures for luxury class articles. The total aggregates, according to Secretary Houston's figures, about \$23,000,000,000. Fifty million is a big lot of money to spend on chewing gum, but the gum chewing girl who has been the butt of many a joke shows her own inefficiency compared to the cigarette smoker. It takes 16 girls to chew up as much money as is smoked up by one cigarette boy.

Another surprising feature is that there is invested annually in pianos, organs and phonographs—which many may class with essentials, especially from an educational standpoint—the very lowest sum of any of these luxuries mentioned excepting chewing gum.

If we could forget these luxuries for one or two years, the entire war debt might be paid off with the economy made possible. We are not suggesting such economy. But, really, aren't we spending pretty liberally?

PROMOTING A COMPANY

There are few of Cultivator readers who have not had opportunity to invest in oil or copper or manufacturing or some other form of promotion scheme, legitimate or, possibly, an absolute fake. The Iowa Homestead has been making some investigations as to the methods of putting these new corporations into being.

According to the Homestead, salesmen placing these stocks with farmers usually sell each \$1,000 worth on the basis of \$250 cash and a note for \$750. The salesmen pocket the cash and turn over the note to the promoter. This note then is offered a bank for discount at, say, ten per cent, leaving \$675. However, the purchasing bank seldom desires to pay out actual cash, and the method employed is to give a certificate of deposit without interest, due at maturity of the note. The companies are thus assured of protection but are no nearer the cash, so the certificate of deposit is in turn discounted at another bank at perhaps 15 per cent, which means that out of the \$1,000 sale but \$573.75 finds its way into the treasury of the company.

Concerning oil promotions in the Middle West, a letter made public by the National City Bank from Topeka says:

"The rise of the 'unit' system made a particular appeal to the speculative investor. The one-eighth royalty retained by the land owners was the basis of high finance. Purchasing, one-tenth of one-eighth for \$10,000 in a field where some production had been found, this fraction was capitalized into thousands of units, each purporting to be an undivided interest in the fraction. In some instances a \$10,000 fraction was the basis for 100,000 units sold at \$20 each, and these were scattered over the state with a rapidity that made many fortunes. In one instance the units numbered 5,000,000 at ten cents each. Complaints to the blue sky board showed that some owners of units would not receive one per cent of their investment until the property, yet to be developed, yielded \$2,000,000 worth of oil. Widows' estates were frequently wholly invested in these securities."

ORDER NOW

Nurserymen are already checking up on next year's stock. The number of trees of various kinds will total millions. There is a bare possibility there will be enough to go around, but allow us to make a suggestion, and that is to the fellow who has not placed an order for his next season's plantings. He may well look upon the gas line which is being formed early these mornings and meditate upon the fact that he may not find relief when it comes to securing trees. The wise orchardist is also checking up on his needs as to number of trees and casting about where these particular varieties of trees are located.

SHIP IN SHIPS

The shipping board is endeavoring to secure relief from the present grain and food congestion by authorizing use of lake built ships to carry some of the crops of the Northwest by the way of the Great Lakes to tide-water. The grain is loaded at Duluth, Chicago, or other Western points with 100,000 bushels each, which is carried to Buffalo, where, in order to secure safe passage through Welland Canal, it is necessary to unload about 80,000 bushels, when the vessel goes through safely and on to the sea. This is remarkably fine for producers in the Great Lakes section. How about the Pacific slope? Government built ships have aided in the carrying of some of its great traffic, but we have such great possibilities that we wish there were some far visioned one on the Potomac's banks who could see this far.

Use of these ships on the Great Lakes has resulted in great reduction in the carrying rate. The shipping board has felt that an apology is necessary, however, and announces: "There is no profit in the operation of these boats and it is an emergency proposition only." Many well wishers of producers and consumers are hoping.

MIGHTY SHODDY

The National Sheep and Wool Bureau of America has recently issued the following statement:

"The prices of rags fit to be re-worked into cloth increased from 300 to 1200 per cent between June, 1914, and December, 1919, through the increased use of wool substitutes in cloth sold as 'all wool,' a term understood by the public to mean all virgin (new) wool."

"Textile manufacturers prefer wool substitutes because they can make more money with them, while the law permits cloth made of them to be sold unidentified through stamping, than they could make with virgin wool. In consequence rags have elbowed virgin wool out of its legitimate market and wool growers face ruin."

"The public demand for virgin wool is great, but the response of the textile manufacturers is little. Last year they gave the public an allowance of three pounds of virgin wool per capita. The need, it is thought, is 12 pounds per capita."

"The French-Copper Truth in Fabric bill, which was left with the committees on Interstate commerce in both houses of congress at adjournment, was designed to compel manufacturers to stamp cloth with its content of substitutes and of virgin wool."

"Through the identification of substitutes by stamping the public would learn what sort of cloth it is offered in the name of 'all wool' and would be allowed to decide for itself how much virgin wool it wants per capita. Untrammelled public demand would recall the accumulations of unmanufactured virgin wool from the storehouses and restore its market."

Readers of the Cultivator who are anxious to know what they pay for can aid in securing the passage of the proposed legislation by writing to their representatives in congress. One fact is certain—if the producers do not demand such legislation they will never get it.



Copyright 1920, by The Goodyear Tire & Rubber Co.

"Your Goodyear Cord Tires on our truck go right through the plowed ground of our citrus groves, permitting loading at the trees, and they protect the fruit, particularly the lemons, which are very delicate, by smoothing the haul to the packing house. They save labor, fruit, time."—H. J. Kelly, Packing House Manager, Charles C. Chapman Ranch, Fullerton, California

IN rural hauling like this and in farm duty radically different, the use of Goodyear Cord Tires on trucks has been found productive of a variety of important advantages.

Their traction has increased truck utility for farmers, ranchmen, fruit growers, dairymen and others, particularly owners of motorized farms, by enabling easy hauling through soft fields.

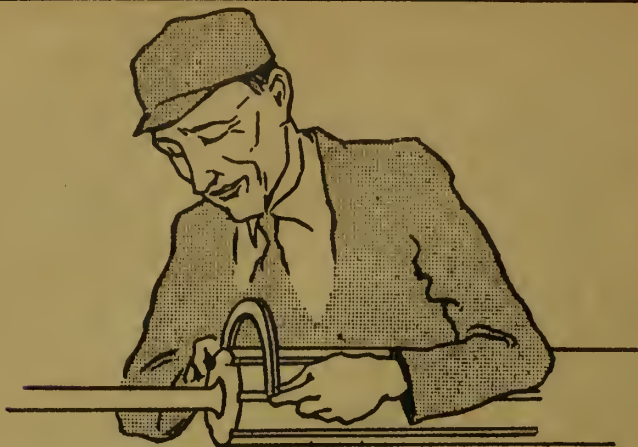
Their cushioning has effected continuous savings in the marketing of delicate vegetables, fruit, dairy products and of eggs and livestock, all of which suffer on slow, jarring solid tires.

Their nimbleness often has accomplished more hauling with less driving and resulted in a quicker feeding of power machinery while releasing hands and saving time for farm work.

Throughout extended terms of service these virtues have been delivered with the stout reliability developed in Goodyear Cord construction by manufacturing methods that protect our good name.

Farmers' various accounts of their successful use of Goodyear Cord Tires on trucks can be obtained by writing to The Goodyear Tire & Rubber Company, Akron, Ohio.

GOODYEAR
CORD TIRES



Can you measure $\frac{1}{1000}$ of an inch?

Think of a hair split into 10 strands! This conveys some idea of the degree of accuracy to which parts for the Best Tracklayer are dimensioned and fitted.

Accuracy in the dimensions of the various working parts is so vital to long life and satisfactory service of a tractor, that in the Best factory highly scientific precision instruments in the hands of master machinists are used constantly in gauging dimensions. Parts are painstakingly "machined" by special tools and jigs, all in charge of the same skilled mechanics.

Much also depends upon selection of the correct materials. Long tractor-building experience has enabled us to determine just what sort of metals gives best and longest service for each working part.

So then, "workmanship and materials" have a very definite bearing on the service your tractor gives. No greater care is used in building the highest grade automobiles than is used in making the working parts of the Best Tracklayer Sixty. The result is a tractor that has become famous for power, durability, dependability and low operating cost.

Beside workmanship and material, the features that have made the Best so successful are: Simple valve-in-the-head, slow speed motor, built in our own factory—three-point suspension and full oscillating tracks which take strain and jolts off frame and mechanism—36 anti-friction bearings—manganese steel tracks—non-friction greaseless rocker joint for track links which doubles life of tracks—complete housing of working parts—ease of handling—60 horsepower at the pulley, 35 at the drawbar.

If interested in tractors, write for our catalog.

C. L. Best Gas Traction Co.

SAN LEANDRO

CALIFORNIA

BEST TRACKLAYER SIXTY



60 H. P.
at Pulley
35 H. P.
at Drawbar

Are Raisin Prices Too High?

By Cultivator Staff Writer



TWO years ago when the California Associated Raisin Company entered into an agreement with the food administration for a five and a half cent price for raisins they were severely criticized by the independent packers because they did not secure all the traffic would bear. Last season when a ten cent price was named by the association they were accused before the United States department of justice of profiteering. Today these critics and accusers are working hard for an 18 cent sweatbox price to the grower, so it seems that it is getting more and more difficult for the raisin company to please its members, the consumer and the independent packer all at the same time.

President Wylie M. Giffen of the association has just announced that a plan, which he admits is an experiment, will be tried out this year, which may serve to place raisins on the market at a price which will be satisfactory to all and particularly to the consumer; in fact, the consumer is to be allowed to fix the price at which he shall buy raisins from the association.

The president's assistant, F. A. Seymour, and Sales Manager Thomas are now in New York making final arrangements for a public auction at which from 200 to 500 cars of loose Muscats will be offered to the highest bidder. The effect of such an auction sale can be readily imagined. If the public in open market bids less than the price named last year, then the contention of the independent packers before the federal trade commission regarding arbitrary price fixing will be materially strengthened, while if, on the other hand, the public is willing to pay more than last season's price it would seem that the raisin company is justified in its position.

The goods to be offered at the auction, which will be held in New York in a very short time, will all be loose Muscats, and the seeded and seedless goods will be sold as heretofore, at a price to be named not later than August 8. Goods will be sold for October shipment on the regular dried fruit contract. Bidding will be open to buyers from all parts of the world. Goods will be sold f. o. b. Fresno, but will be shipped to any point designated by the buyer.

In his letter to the growers explaining the methods to be employed in fixing prices this year, Mr. Giffen stated:

"It is our purpose as a board of directors to sell this crop as nearly as possible at its market value as indicated by the law of supply and demand, but we must remind you that the market value of the whole crop is often a different value from the value of a single crop, and the one thing that seems to us absolutely vital to our existence is that the price named should not retard the flow of raisins into the hands of the final arbiters of our success, the consumers. Admitting freely that the present market on raisins is exceedingly strong, we must not overlook the fact that a crop cannot be sold, delivered and eaten in a day, a week or a month, but is the problem of a year, and in these days of inflation, discontent and uncertainty, who is there among us who can determine now, a year in advance, the difficulties that may come to prevent the marketing of 200,000 tons of raisins before another crop is grown? Who can tell how many thousand tons of Smyrna and Spanish raisins and how many thousand tons of Grecian currants may be dumped into the United States this year in competition with our California crop as a result of the high prices now prevailing; and who among you as growers, in view of the fact that practically every student of financial conditions will tell you that there is at least impending danger ahead, will say without hesitation that there will not be financial difficulties in the next 12 months that may seriously affect the consuming power of the country?"

"Your board of directors are only ordinary men who do not pretend to know the answer to either one of these questions, but we are not 'asleep at the switch,' and though realizing the difficulties of the task committed to us, we are imbued with an ambition and purpose amounting almost to a

passion to solve this problem with credit and honor to ourselves and profit to you.

"This plan may appear to you on first thought to be revolutionary and impracticable, but we have given it a great deal of thought and believe it has many advantages. There are three parties vitally interested in this question—the buyer, our competitors, and the growers. Under this plan the buyer should be pleased because he makes his own price, and certainly will not make it any higher than he believes the goods will be worth. Our competitors will be pleased because their contention that they be allowed to buy goods on the same terms as other people is recognized. They are now absolutely unfettered so far as we are concerned and can buy raisins from us on exactly the same terms as other buyers. On the other hand, if they do not care to buy there will be no displeasure on our part, as we feel sure there will be plenty of buyers; but what is more important to us is that we believe the growers will be pleased because, in our judgment, raisins sold this year at auction will bring a higher price than if we were to pursue the methods heretofore employed in naming an arbitrary price."

Undoubtedly the raisin company officials will name the average price received from the sales at auction as the price at which it will sell the remainder of its crop, although it is possible that other auctions will be held later in the season. This new plan will be watched by all growers cooperative organizations throughout the nation, and if successful will be another milestone on the great highway of successful cooperative marketing.

JAPANESE PLUMS

As the Japanese plum was introduced to the Western world by way of California, the first named variety being the Kelsey, the history of its coming to California is interesting to Cultivator readers. In the June number of the Garden Magazine, E. H. Wilson, the noted plant collector, informs us as follows:

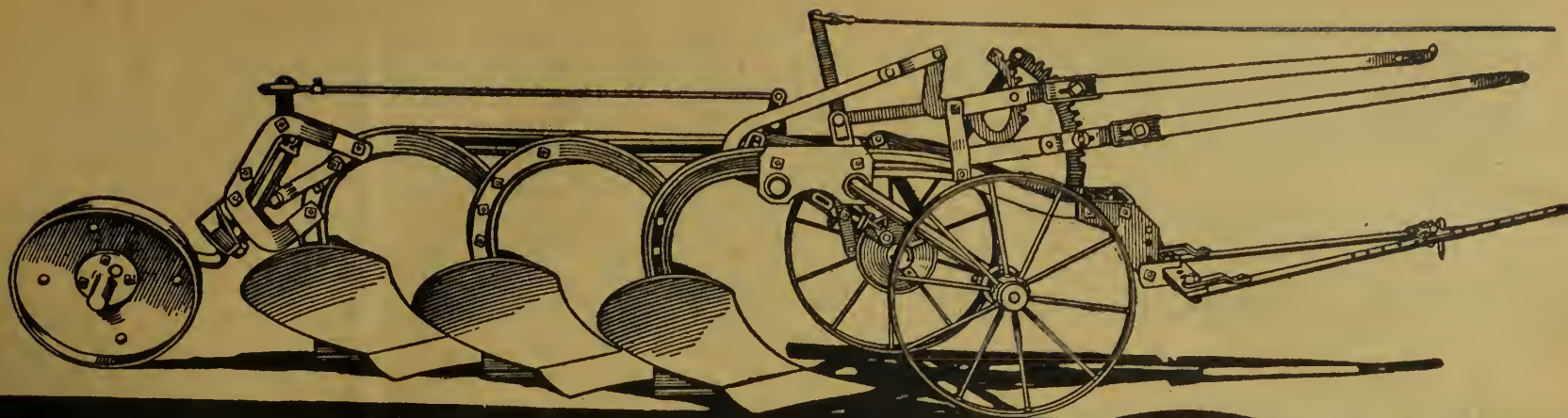
"The plum cultivated in the temperate parts of eastern Asia is *Prunus salicina*, better known as *P. triflora*, or in the vernacular, the Japanese plum. It is indigenous in central China, where I have found it to be fairly common, but is unknown in a wild state from any other region. Curiously enough it is the only true plum known from all that vast region. In China it has been cultivated from time immemorial and there are varieties in quantity, some with greenish, others with yellow, red or bloomy black fruits. From China it has been taken to South Manchuria, Korea and Japan, where today it is extensively cultivated.

"It was introduced to this country from Japan about 1870 by a Mr. Hough of Vacaville, California, through the United States consul to Japan at that time, Mr. Bridges. The first ripe fruit of these East Asiatic plums was produced in the grounds of John Kelsey, Berkeley, California, in 1876. So impressed with their value was Mr. Kelsey that he urged others to take them up, and this resulted in their propagation being undertaken on a large scale by W. P. Hammon & Company, Oakland, about 1883. Today about 100 varieties of this Japanese plum are grown in this country.

"The cherries of China are the product of *Prunus pseudocerasus*, a small tree, wild in the woods of the province of Hupeh, central China. It is not very hardy but is cultivated over a considerable area in China and also in the warmer parts of Korea and South Manchuria. Formerly it was much grown in Japan, but its place has been taken by European cherries. It has not proved hardy in Massachusetts, but has fruited in Chico, California."

STATE FRUIT GROWERS

Dates are not chosen, and we believe it is not formally announced, but it is understood that the next or fifty-third state fruit growers convention will be held at Fresno, probably in late October or early November.



California Fruit Growers Wanted it—John Deere Built it

The John Deere No. 8 Orchard Tractor Plow is the result of a close study of the requirements of California fruit growers. The suggestions of a number of experienced fruit growers helped design it. It is an easily-handled, low-down, power-lift plow for use with small tractors in either orchard plowing or general field work. Its special hitch and lever construction and wheel base design permit work up close to the trees in throwing either to or from the row.



JOHN DEERE NO. 8 ORCHARD TRACTOR PLOW

has a reversible hitch and can be set out to either side so that the plow can run close to the trees when throwing either to or from the row. Note this feature in the illustration to the right.

Levers Have Side Adjustment—a feature you will greatly appreciate. See it illustrated at the right. When the plow is set to the right to get close to the row, the levers can be angled to the left. When the plow is set to the left, the levers can be angled to the right. In either case, with the plow working up close to the row, the low-set, angled levers, are conveniently back of the tractor operator, out of the way of the tree limbs and free of the tractor wheels when turning short.

Reversing the hitch and angling the levers is a simple matter—only one bolt to loosen in each operation.

Doesn't Scar the Trees.—Note also in the illustration to the right the wheel base design that permits close work in throwing either to or from the row, without scarring the trees. The furrow wheel doesn't project beyond the inner moldboard's wing. The land wheel is set inside the third beam.

Simple, Positive Power Lift raises the bottoms high and level at a pull on the trip rope by the operator. The lifting mechanism consists of a single, durable clutch on the land axle. It moves only when the plow is being raised or lowered—practically no wear.

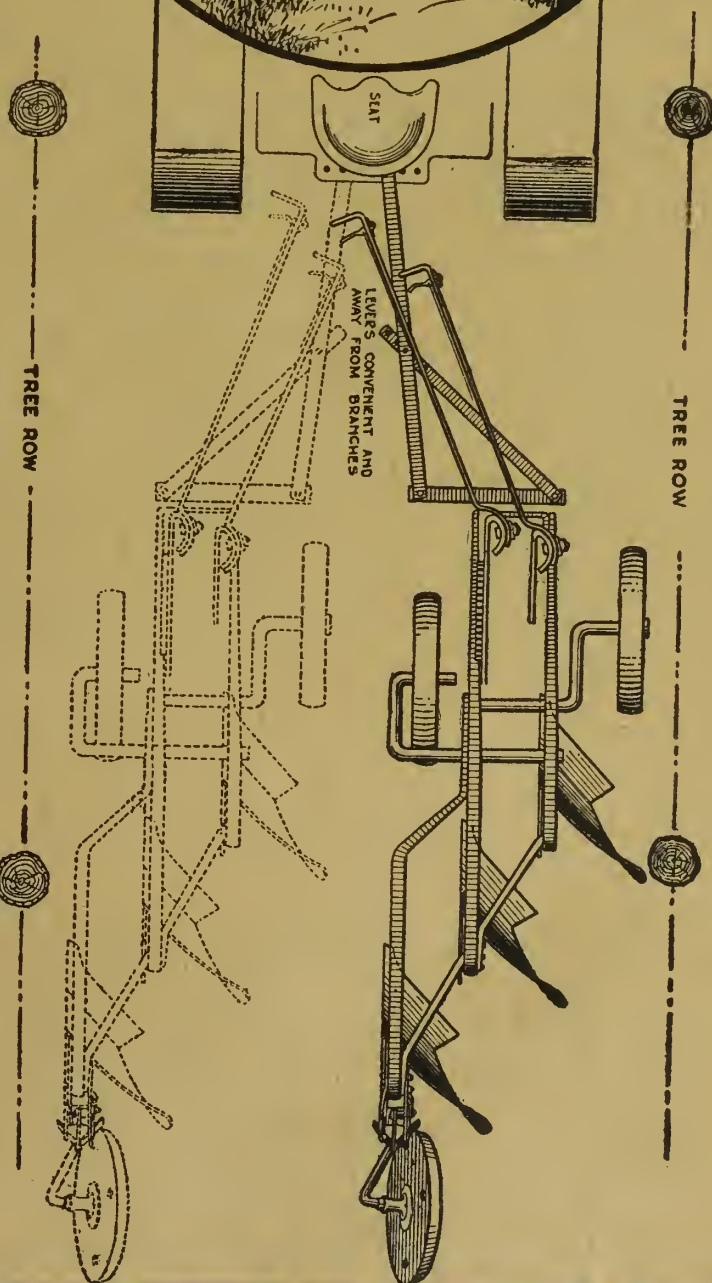
And these other features.—The hitch has a break-pin for protecting the plow when striking a stone or root, and a simple slide and pin-lock for quick landing adjustment. Land and furrow wheels have a great range of adjustment for either deep or shallow plowing. There is a great clearance in throat of beams and back of bottoms to prevent clogging in trashy conditions or deep plowing.

The construction is strong and durable throughout.

The John Deere No. 8 Orchard Tractor Plow is equipped with three 10-inch bottoms that scour and pulverize to best advantage.

If you have a small tractor, don't fail to see the John Deere No. 8 at your John Deere dealer's.

And don't forget that no matter what the size of your tractor, you can get a John Deere Tractor Plow in either moldboard or disc type that will give you especially good plowing service.



Write today for a free folder describing the John Deere No. 8.
Address JOHN DEERE, Moline, Illinois. Ask for booklet O-27.

JOHN DEERE

THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

We Insure Pear Orchards Against Blight

in the MAIN-LIMB CROTCHES, in the TRUNK, and in the ROOTS—the most vital and vulnerable parts of the tree—provided you plant our blight-resistant Chinese seedlings, the genuine CULTIVATED type of

Pyrus U-Su-Ri-En-Sis

and (after properly branching them) bud or graft the branches to the commercial varieties of your choice.

Below the point of union, THERE WILL BE NO BLIGHT.

Such trees will never die from this (the worst) disease of the pear, nor will your orchard investment be wiped out by blight—at present the outstanding menace to security and profit in this most profitable branch of horticulture.

Should any tree or trees covered by this invoice die within TEN YEARS from the date hereof from pear blight (*Bacillus Amylovorus*), we will refund to the purchaser or his heirs the purchase price thereof as shown by this invoice.

LOMA RICA NURSERY.

That is the agreement we incorporate in every invoice covering sales of Usuriensis seedlings (the genuine, CULTIVATED type) made on this basis. It shows our confidence in these stocks, but a more convincing proof of that confidence is shown by the fact that we have already planted more than 5000 in orchard rows

In Our Own Orchard

and that we will next spring plant 10,000 more in Loma Rica orchard, later budding to Bartlett and other commercial varieties. These sturdy seedlings may be planted DIRECTLY IN ORCHARD ROWS, and we advise that practice, or they may be planted two feet apart in nursery until ready to transfer to orchard, budding them before transferring.

DON'T MAKE THE MISTAKE SOME HAVE MADE: don't assume that working a Bartlett top on a seedling which has blight-proof roots, trunk, and main-limb crotches will—by some magic—make the Bartlett part blight-proof also, because THAT "CAN'T BE DID"!

Susceptible varieties will ALWAYS be subject to blight—and we want every prospective customer of ours to get this fact ABSOLUTELY RIGHT—but our method confines the disease to the UPPER part of the tree—ABOVE THE UNION—where inspection is not difficult nor eradication expensive.

Scientific Experiment Proves

that so long as we grow the Bartlett pear, the best that we can hope for is to provide our trees with crotches, trunk, and roots of a species that is BLIGHT-PROOF.

With such trees, fighting blight three or four feet under ground—always at heavy cost and frequently with loss of the tree—will be ABSOLUTELY ELIMINATED. If blight takes a part of the Bartlett top, grafting will replace it; and a few years' growth will restore the tree to full bearing.

OUR METHOD—budding or grafting the commercial varieties upon the branches of blight-resistant seedlings—OFFERS THE GREATEST PROTECTION from pear blight that Science has been able to devise AFTER ONE HUNDRED AND FORTY YEARS' STUDY of the disease.

SCIENTIFIC EXPERIMENTS have convinced us that Usuriensis seedlings (cultivated type) are the best available for such use. They UNITE WELL with our commercial varieties; are VIGOROUS AND THRIFTY in growth; and are adapted to a WIDE RANGE of soil conditions.

Space will not permit telling the WHOLE story here, but this fall we will publish a bulletin giving further details. Any person interested who will send his address NOW will receive a free copy as soon as printed. In the meantime,

Order Your Seedlings Now

We can only spare about 50,000—a mere drop in the bucket of demand—and when these are sold we shall have no more for AT LEAST TWO YEARS, due to the failure of the Oriental collectors to secure seed last fall through crop shortage.

Our trees are thrifty, sturdy, well-rooted; none less than 3/8 of an inch in diameter, and from two to five feet in height. The price is \$40.00 per 100; less than 100, 50c per tree. Free packing on all August orders.

CAUTION: Dr. B. T. Galloway, of the U. S. Bureau of Plant Industry, warns against the use of Usuriensis seedlings of the WILD type in an article in Journal of Heredity, while highly recommending seedlings of the vigorous CULTIVATED type. Ours are EXCLUSIVELY of the cultivated type, and we offer them in the belief that nothing ever before available to horticulture will prove so valuable as a factor in blight control.

Loma Rica Nursery

Pear Specialists

A. L. Wisker, Manager

Grass Valley, California

NOTE: We shall have a small supply of Bartletts (a few thousand only) branch-budded this fall in nursery to Usuriensis, for delivery fall of 1921 at \$1.50 per tree, straight. Orders for this stock will be accepted now for delivery in the order received, so far as our stock will go. We can supply skillful workmen to bud seedlings furnished by us, where customers are unable to secure such help or do their own budding.

SACRAMENTO LEMON HOUSE

(Continued from Cover.)

From his records: In work room humidity was on June 3: low 22, high 84. In storeroom No. 9: low 69, high 85. Temperature at same time in work room: low 47, high 105. Inside storeroom No. 9: low 54, high 73.

FACTORS INFLUENCING FUMIGATION RESULTS

(Continued from Page 147.)

ages and folly to use a very light one. At the present time we do not know exactly how high a dosage should be used, but apparently fully a 100 per cent schedule is required. The subject needs careful investigation and this we are intending to take up the present season.

There is another type of resistant scale that must be considered, at least in some communities and orchards. And this is a scale that is made dormant during the winter season by cold weather. It has been observed that the black scale in many orchards fumigated about Alhambra, and also the purple scale in the low country toward the coast is sometimes more difficult to destroy in the winter than in the early season. Dosages which have given effective control early in the season have failed to control the insects at the average temperatures of fumigation, and particularly the lower temperatures, where a very cold spell of weather had preceded the actual fumigation. This dormancy appears to affect particularly the black scale and purple scale. In many localities this influence is little felt and late fumigation is very effective, and particularly is this true of the foothill section. However, in other districts, for the most part the cooler ones, the insects are sometimes decidedly more resistant to the cyanide gas during the winter and consequently in such cases greater dosages are needed than in warm weather to produce effective results.

Dosage

Dosage is at all times important. The tendency to use weak dosages, primarily to avoid tree injury even though many scale may escape, should be discouraged. In some districts, at least, too low dosage is the main cause of poor results. In this district I am favorable to the use of an 88 per cent at least or a 100 per cent schedule as soon as the trees will stand it.

Large trees have not been receiving adequate dosage. Although these dosages on the present schedule are equal to those used with the pot and cyanofumer for large trees when good results were secured, it appears that the proportionate dosage for large trees with liquid gas must be raised above that limit formerly followed. The gas distribution in such large trees is not as good with the liquid hydrocyanic acid. A new dosage schedule is being prepared in which the big trees will be scaled to receive the heavy dosage necessary. It will be distributed in time for the present season's work.

Liquid vs. Pot

At the present time many are saying that liquid hydrocyanic acid is a failure; back to the pots. Now, liquid hydrocyanic acid is not a failure. Some districts have had as good work done this past year with liquid gas as ever before in their history. The problem which confronts the Covina district cannot be explained as one of poor results due primarily to the liquid process, but appears to be due to other factors, at least some of which I have touched upon. In our own experience during the past three years we have in every case observed at warm temperatures exactly as good results with the liquid as with the pots. Series of trees side by side have been fumigated at normal temperatures under both systems and in such cases if either way was to be favored it was the liquid method.

SCHOOL OF POWER OPERATION

Prof. L. J. Fletcher of the college of agriculture, who is also chairman of the California Tractor and Implement Association's committee on demonstration, will conduct a "School of Operation" at the California state fair in September. The demonstrations in practical farm mechanics to be given by Prof. Fletcher and his five assistants will be held in the tent with the

"Power on the Farm" exhibit of the California Tractor and Implement Association. From September 4 to 12 interested power farmers visiting the Sacramento attraction will have the opportunity to learn the care and operation of labor saving implements, of which there is a display covering eight acres.

CONTROL OF LEAF HOPPER

A cheaper and better method of controlling the leaf hopper is indicated by a demonstration of the effectiveness of nicotine dust against this grape vine pest, held recently under the auspices of the Fresno County farm bureau at the Leffel vineyard north of Sanger recently. Ralph E. Smith, formerly of the university experiment station staff, conducted the demonstration.

It is thought that sublimed sulphur can be used as a carrier for the nicotine, thus making a preparation which will be effective against both the hopper and mildew.

CANTALOUPE STANDARDIZATION MEETING IN TURLOCK

A very interesting meeting was held in Turlock on July 23 under the direction of County Horticultural Commissioner A. L. Rutherford. The matter of standardization and inspection of cantaloupes was discussed. After the meeting a practical demonstration of the proper method of inspecting cantaloupes was presented on the "street" and at some of the principal packing sheds by Mr. Starr. Mr. Rutherford's chief inspector.

Thousands of Happy Housewives in Western Canada

are helping their husbands to prosper—are glad they encouraged them to go where they could make a home of their own—save paying rent and reduce cost of living—where they could reach prosperity and independence by buying on easy terms

Fertile Land at \$15 to \$30 an Acre

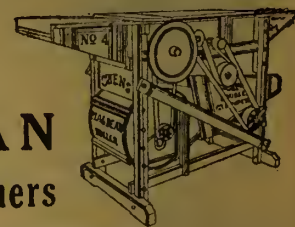
—land similar to that which through many years has yielded from 20 to 45 bushels of wheat to the acre. Hundreds of farmers in Western Canada have raised crops in a single season worth more than the whole cost of their land. With such crops come prosperity, independence, good homes, and all the comforts and conveniences which make for happy living.

Farm Gardens—Poultry—Dairying

are sources of income second only to grain growing and stock raising. Good climate, good neighbors, churches, schools, rural telephone, etc., give you the opportunities of a new land with the conveniences of old settled districts.

For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan, and Alberta, reduced railway rates, etc., write Department of Immigration, Ottawa, Can., or

Gilbert Roche,
3-5 First St., Sheldon Block
San Francisco, Cal.
Canadian Government Agent



BEAN Threshers

Largest cleaning capacity of any thresher made and requires less help and power to operate. Pays for itself in one season. Hardwood construction throughout. Won't split the seed. Double cylinder. Made in six sizes—largest to smallest. WRITE FOR CATALOG.

California Implement Co.

122-124 N. Los Angeles St. Los Angeles

WANTED—A competent foreman for 800 acres citrus orchard, lemons, oranges; also capable packing house manager for orange packing house. Apply with references to James Mills Orchards Corporation, Hamilton City, California.

MACHINERY

OF EVERY DESCRIPTION
Bought, Sold and Rented

BUTTRICK & McCLELLAN

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MOLINE

The Universal Tractor



The correct way. One man handles the entire outfit and sees his work.



You wouldn't think of riding your horses. Of course this method is wrong whether horses or tractors are used to pull your implements.

The Moline Tractor follows the proven principle. One man operates the entire outfit from the seat of the implement, where he is in the best position to observe his work.



In a 10-hour day one man and a Moline Tractor can plow from 7 to 9 acres; disc from 25 to 35 acres; seed from 25 to 35 acres; mow from 25 to 40 acres; cultivate from 12 to 20 acres; and harvest from 25 to 40 acres. In addition the machine will do a great variety of other work and all ordinary belt jobs.

Compare these results with those of ordinary methods. In many cases the Moline enables one man to do at least twice as much work. These facts are borne out by the results obtained by Moline owners.

Moline owners in 37 states say that the Moline Tractor saves an average of one man per farm, as well as five horses, because it does all field work, including cultivating.

The Moline Tractor increases production by enabling one man to do more work, and decreases the cost of production by saving help and horses.

Profits of from \$500 to \$2200 a year, from the Moline Tractor alone, are being reported by Moline owners from all sections of the country.

MOLINE PLOW COMPANY, MOLINE, ILLINOIS

Sandstrom Tractor Scraper

An Ideal Scraper to Do Your Leveling

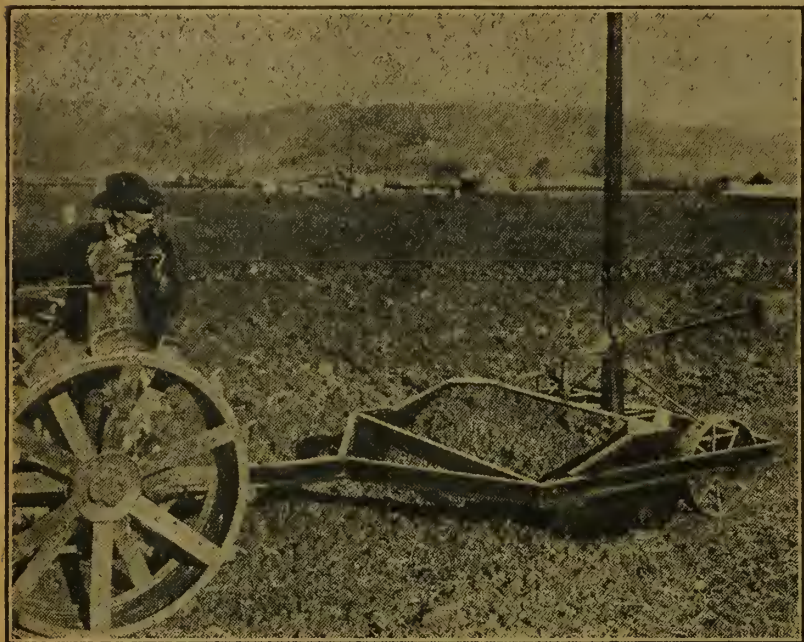
It is light draft and operated by driver from the tractor seat

Made in 3 Sizes for Small or Medium-Sized Tractors

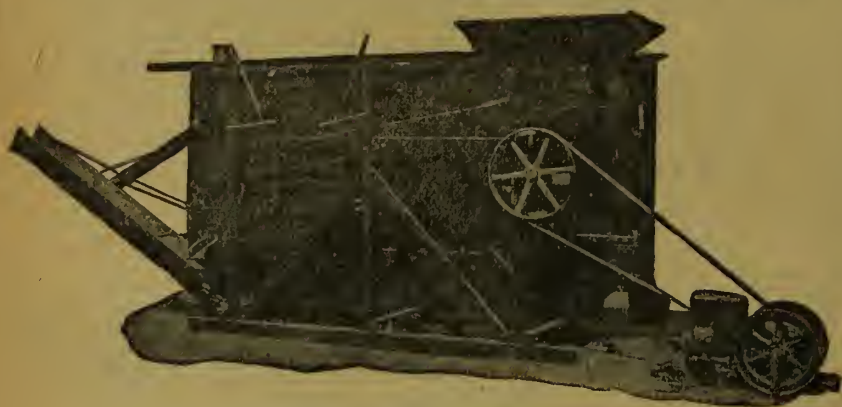
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Dealers wanted everywhere



Almond Huller, \$415.00



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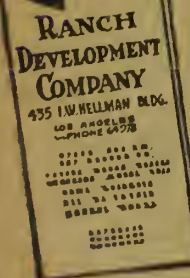
L. K. VAUGHAN, 172 Elm St., Woodland, Cal.

Some Smiles For The Farmer

Have you seen the Almond Huller that don't wear out the fingers and you don't have to stand at the stacker and see the meats going into the hulls as loss? With this machine you can hull or crack all the nuts and no waste at all and have time to go to all the fairs and no worry. Write for any information. 1 1-3 tons in 10 hours guaranteed.

This Folder Tells You How To Make Your Idle Land Earn Money

This is the day and age when you should make every foot of land produce profits for you. If you have any size tract ranging from 80 to 5,000 acres in the Western States that need development you should send for this book at once. It tells you the way to develop your property through the use of Hydro-Electric plants, gravity irrigation systems, pumping plants, grading, and buildings; in fact, it points out the various essentials that are necessary to make your ranch a producing property. Now is the time to act, so that you can get a crop from your land next year. It is a certainty that crops will bring good prices next year, so take advantage of this condition and get your land under cultivation now. Write today, stating location of land and number of acres.



Send for Your
Copy Today
FREE

Ranch Development Co.
Engineers and Contractors

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LOS ANGELES

August in the Vegetable Garden

Southern California

By D. F. Reichard



HE fall planting time is here. August is the month in which much of the winter vegetables should be planted. There is also time to plant some of the early maturing summer vegetables, too.

Soak your ground thoroughly, make basins and fill them with water. This is one of the best ways of getting the ground wet. When fit, work the soil to a depth of ten or 12 inches, getting it in nice fine condition for planting. It is a good plan, and it will pay too, to soak and work up the ground twice before planting during the summer months.

The main planting of fall potatoes is put in during the first ten days of August, although plantings may be made any time during the month. It is always advisable to treat the seed, dipping them in either a solution of formaldehyde or corrosive sublimate for the prevention of scab and rhizoctonia, diseases that greatly reduce production. Dwarf or bush beans may be planted. During the early part of the month put in Stringless Green Pod or Refugee beans, while the latter part of the month Canadian Wonder and Ventura Wonder should be used. Pole beans planted this late are almost sure to mildew and rust.

Sweet corn planted during August will make roasting ears in ten or 12 weeks. Use Golden Bantam and Coun-

try Gentleman for sweet corn and Early Adams for something quick and hardy. Cucumbers and summer squash will still make and will be greatly appreciated during the hot weather of the fall. It is too late now to plant winter squashes and melons, as the frost would get them before ripening.

For planting the hardier vegetables—most of them have small seed—the ground should be in especially fine condition and well supplied with moisture. The seeds of these should be planted deeper at this time than in the spring, because the ground dries out so fast that unless they are covered a couple of inches the seed are in dry soil before they germinate, or, what is worse, they germinate and then dry out and die and the seedsman is accused of selling poor seeds.

Make plantings for winter use of Egyptian beet, Half Long carrot, Swiss chard, Curled endive, New York lettuce, kohlrabi, Bermuda onions, either sets or seed, parsley, parsnips, radishes, spinach, White Globe turnips and Stratagem or Admiral peas. Sow in beds cabbage, cauliflower and kale seed for transplanting. Tomato and pepper plants may be set out in frostless sections for winter use.

Dust the corn that is coming into silk with dry arsenate of lead powder; dust beans with sulphur to check mildew and to kill red spider.

Northern California

By A. R. Gould



ANY of the main crops will be ready to harvest this month, and it is a wise plan to clear the ground for future action, which means preparing plots for winter crops. The crops ready this month for storing will be onions, turnips, beets, carrots and potatoes, and all these may be stored in a dry cellar for winter use. Some soil preparation is needed and immediately the plots are cleared lime should be dug into the soil. We have often advised the liberal use of farmyard manure where it can be obtained but it is not always available and it is then often necessary to secure commercial fertilizers.

Beans

Runner, or climbing, types may be staked and seeds of dwarf varieties might still be sown for a late crop the last of the season. Sow Stringless Green Pod, Red Valentine or Canadian Wonder at once. Sow these in rows two feet apart.

Cabbage and Cauliflower

These useful fall crops will need a good irrigating this month and thorough cultivation between the rows.

Brussels Sprouts

Plants may be put out this month 18 inches apart in the rows. They require a rich soil and will repay attention.

Lettuce

To keep up the supply it will be necessary to sow Los Angeles or May King, a variety which quickly matures. The first named, however, is also very excellent. Have these plots well manured and sow the seed thinly in rows and eventually thin out the seedlings to six or eight inches apart.

Tomatoes

The early varieties should be ripe this month, and attention must also be given to tying up those grown on the three stem system. Keep all the axil shoots removed. If aphid is giving

trouble and the black fly is usually busy this month, spray with liquid nicotine.

Parsley

For the winter supply sow in rows Moss Curled and thin or transplant six inches apart.

Turnips

For winter use sow during the latter end of the month Purple Top, White Globe or Yellow Globe. This crop thrives in a rich soil and should not be allowed to dry out during active growth. Sow very thinly and thin out to nine inches apart in the rows.

Leeks and Celery

An application of liquid manure will be very helpful to both crops, as they will be making strong growth this month. Cow manure is best to use. Apply once or twice weekly and prepare it by placing a sackful in a barrel of water.

Potatoes

This crop should be dug as it ripens. The tops will indicate when ready, as they turn yellow. Every care should be exercised, as the tubers will not keep if bruised.

Kale

Plants of these should be ready from the seed bed for transplanting by the middle of the month if sown as advised for July. However, seed may yet be sown of the Tall Green variety. It is valuable also for poultry. When planting out place two feet apart in well manured soil.

Radish

Sow Crimson Giant and Half Long on a well prepared border. Seed may be sown in rows or broadcast.

Carrots

Sow Danvers Half Long and French Forcing, both very popular varieties. The last named matures very quickly. Sow in rows 18 inches apart.

Parsnips

Keep well irrigated and the soil well worked between the rows.

Onions

Some of the main crop varieties will be ready to harvest. As the tops turn yellow they may be pulled up and hung up for winter.

AUGUST IN THE ARIZONA GARDEN

By M. E. Bemis



UGUST might be appropriately called the "get ready month," for active preparation for fall garden work should be well along before the last of August, if indeed it has not been under way all summer. Manure should be spread on the land and plowed under, weeds kept down and all possible preparation made for the planting of seeds in September.

This does not mean that there are not many things which may be planted in August, only that there are many more which may be put in in the month following.

August is the time for planting the fall crop of beans. String beans will do perhaps better in the fall than in the spring; at any rate it is well worth while to plant beans for the fall garden. Of pole beans the Kentucky Wonder, Kentucky Wonder Wax, Broad Windsor and White Seeded Kentucky Wonder are recommended. The bush varieties best adapted are Stringless Green Pod, Black Wax and Improved Golden Wax. Lima beans are the well known Burpee's Bush and the Large Lima. Beans frequently are ready for picking in six to eight weeks when planted in good soil with moisture conditions right.

Cabbage seed should be planted in beds or cold frames the latter part of August. If planted in a bed it should be shaded, as one of the chief difficulties in planting the small seeds at this season of the year is to secure germination. In order to do this it is absolutely necessary that the ground be kept as cool as possible. In cabbages the Early Winningstadt is one of the best. The Copenhagen Market has proved excellent also, and a special brand of this variety known as the "Cactus" has seemed to have some superiority over the parent variety for this section. This is said to be one of the earliest of the round headed varieties.

Cauliflower is grown to some extent and might probably be grown in a larger commercial way. It is rather easily grown if the soil is rich and porous. Henderson's Early Snowball and Large Pear are good varieties for Arizona. The cultural methods usually employed for cabbage will answer for cauliflower.

Beets may be planted any time in August, although the first part of the month may be a little too warm. If some method of shading is devised these small seeded plants may be made to germinate and thus earlier vegetables raised than would otherwise be possible. Eclipse and Crosby's Egyptian are splendid. Extra Early Egyptian, Early Blood Turnip and several other varieties do well.

August is a little early for carrots, unless the nights are cool along towards the latter part of the month.

Brussels sprouts and collards have their favorites and may be planted in the latter part of the month. There is still time to plant the Papago or Pima Indian corn for roasting ears and even the Mexican June corn should make roasting ears when planted the early part of the month.

Probably the most important winter truck crop in the Salt River Valley is lettuce, and while it is of little use to plant this before September, the best chances of success are had when the preparations are made early in September. Preparation in this case means plowing under at least three tons of manure to the acre, and this should be well rotted. Fertilizing in this way insures the early maturity of the crop, and this is one of the little secrets which spells the difference between success and failure. Lettuce growers have made splendid profits here, and each year there are some that clean up nicely and others that lose money. "Getting ready" is a great and important factor in success in growing lettuce or other vegetables as well.

Potatoes are not an unqualified success as a crop in southern Arizona, although some good yields have been obtained. The fall crop does not as a rule yield sufficiently well to justify planting on a commercial scale, but for the home garden a few add to the variety of things which may be planted and help out on the table menu.

Beware of the chap who doesn't know anything and doesn't know it.

August in the Ornamental Garden

Northern California

By A. R. Gould



HIS is a very trying month for many garden subjects, as the continued dry, hot spells make it necessary to keep the sprinklers going, and, unfortunately, in many districts there is a water shortage. However, it is surprising how many shrubs stand it and how many perennial plants are able to survive. Many of our native shrubs are able to stand drouth very well, and among these are Ceanothus, Rhus, Rhamnus, Prunus ilicifolia, wild cherry, and Ribes, of which there are several species, also the California holly, Heteromeles. To those who have a dry situation and are in search of something to solve the problem, the above named will help out. There will be some cleaning out to do in the perennial borders. This month some of the earlier subjects, having finished flowering, will need to be cut down. Some subjects,

like the tall growing Campanula pyramidalis, Boltonia, Bocconia, etc., will also need stakes for support and certain shrubs such as spirea, fabiana, veronicas, may be cut back. After flowering simply remove the dried up flowering branch. Roses may also be pruned back this month and a fine fall show of flowers will be the result. After pruning they will not need quite so much water for a few weeks, and a good mulching with farmyard manure will be helpful at the roots.

Aquatic Plants

These are now at their best. Water lilies in all colors are now flowering and making rapid growth. A pool of these adds considerably to any garden of large size and, given the necessary start, they are not hard to grow. Water iris are very pretty as an addition.

A Beautiful Native Tree

Lyonothamnus floribundus, Catalina ironwood, is somewhat rarely seen, but should certainly be more widely planted. It grows 15 to 20 feet high and has fern like foliage and white blossoms in trusses. Make a note of this for next season's planting list.

Some Subjects to Sow Now

Pansies, primroses, violets, dianthus, schizanthus, myosotis and snapdragon should be sown on a well prepared border, semi shaded or in boxes. Sow thinly, as, if the seedlings come up thickly, they have a tendency to become drawn and many "damp off." Sweet alyssum, candytuft and mignonette may still be sown where it is to flower. These will all provide bloom for the winter season.

Pentstemon Spectabilis—This is a most useful flower, being a native growing four to six feet high and is in flower several months, having blue flowers.

Sweet Peas for Winter Flowering—Seed of those varieties, such as Early Warbler, Early Liberty, Early Morning Star, etc., as advised last month, may still be sown in trenches of ma-

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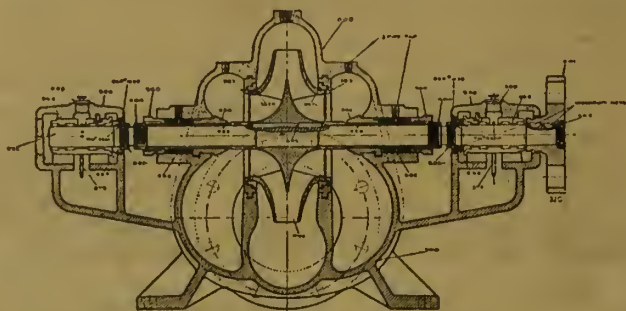
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nure deeply dug and prepared. They will need plenty of watering.

Cinerarias and Mimulus—Both these are useful for a shady situation and seed may be sown now. Of the former the star shaped are pretty as also are the larger flowered grandiflora types. Of mimulus the large hybrids are the best to grow.

Chrysanthemums

Keep those intended for specimen bush plants pinched back to encourage a bushy habit. Feed with liquid manure every week.

Violets

These very fragrant flowers may be divided up, the clumps and new beds planted in a semi-shaded position. They repay for liberal treatment with manure and a good watering.

Dahlias

These will require liberal feeding with liquid manure at least once every week, and disbudding should be car-

ried out to secure large flowers, removing the two side buds and leaving the terminal.

Climbers

All such as bignonia, cobeia scandens, jasmine, etc., should be tied in to the trellis. Spray climbing roses for mildew with liquid sulphur. Nasturtiums in various colors, climbing types, may still be sown and will make a good cover for a bank or slope temporarily, or if a permanent cover is required, vinca, ivy or honeysuckle may be planted. Ficus repens will cling closely to a wall and is effective as a cover, while for a delicate tracery use Ficus minima for creeping on rocks, etc.

Lawns

Constant attention will be required to keep them well watered and weeded. Re-sow any bare spots. If contemplating making a new one, have the ground well prepared this month and next and encourage all weed growth before sowing the seed.

Southern California

By Ernest Braunton

SO much profit comes from observing the practices and accomplishments of others that one may be pardoned for calling in the flower show as an introduction to an early autumn garden calendar. The Dahlia Club of Los Angeles holds its first public exhibition, September 23-24, at the Alexandria Hotel, the Pasadena Flower Show comes late in October, and in November a floral, plant and fruit exhibit will be staged at Redlands. Other cities will have shows of like kind and much may be learned of sound garden practice by attendance and chats with exhibitors.

August, like the preceding month, is not one of sowing, but rather of harvesting. It is, however, a month of much guard duty. The orchardist, nurseryman and gardener are alert in their relentless war against insect pests. There are many of these in the garden, and it is not our purpose to list them, much less to prescribe remedies. Many plants will be troubled with aphids and red spider, however, and health of plants has much to do with their control. Such insects do not long or seriously infest vigorous plants that are well and forcibly "hosed off" daily. Force of water is alone relied upon by the better gardeners to rid plants of these pests. Chrysanthemums will be most attacked by aphids and violets are the favorite hosts of red spider.

Sowing Seeds

Professional plantmen are sowing seeds of eucalypts and acacias from Australia, plant seeds of all kinds from there, South Africa, or seeds of California native trees and shrubs. So take your cue from these trained and experienced propagators and sow seeds from climates similar to our own. If Monterey cypress is needed

for hedge or windbreak, now is the time to sow in beds or boxes. Hardy perennials for the garden are best started now, for the young plants will then bloom next year and as early as though the seeds were sown in the spring. While the annual cineraria is a cool weather plant, to have at best time for bloom development the seed should be sown in August. Sow in a rich loose soil in a shady spot, in boxes rather than in beds, unless the latter are neat and confined by border enclosures. Plants should be potted, shifted again to larger pots and given an occasional feed of liquid manure until time to plant in permanent position. Such time is when plants are large and vigorous, yet before any buds appear.

Roses for fall bloom should not be watered during August or early September, but have a summer rest for recuperating vigor to meet the demands of a November flower crop. This is a trying month on all plants that should be kept growing and one should watch closely that no wilting takes place through lack of soil moisture. Dust is everywhere and seriously clogs leaf pores of all plants. In cool of evening hose foliage vigorously but do not presume to substitute such watering for proper irrigation. No crop suffers more from lack of water than chrysanthemums, and they can hardly have too much or too frequent applications. Dahlias that bloomed early may have their tops cut off, be well watered and fertilized and be made to produce a fine flower crop during November. Do not forget planting altogether, for there are both seeds and plants that should go in the soil this month, and the list of possibilities is long. Ask your local plant dealer or seedsman what is best to plant; their business success hangs upon having such material for sale.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Squash Bugs

Is there a spray or anything which will exterminate squash bugs? Have a fine pumpkin and squash patch, but the bugs are killing every one.—Subscriber, Bishop.

The squash bug seems to be so resistant to the ordinary dosage of poison that if squash or cucumber plants are sprayed with a solution sufficiently strong to poison the pest it is liable to prove injurious to the plant. The best remedy of all is to get out early in the morning early in the spring and do a thorough job of hand picking. If taken before the egg laying is commenced the garden may be fairly free from them during the summer. The bugs may be trapped by placing boards under which they may find shelter. Then by lifting the boards they are easily destroyed. If the ground around the plants is ridded

of them, then the plants may be covered to protect from further infestation. A little relief may be had by using repellents such as gypsum or ashes saturated with turpentine or coal oil, and this scattered around on the ground.

Cheap Paint and Stain

In your Questions and Answers of July 17 I read an article on cheap paint. For the last three years I have been using the following mixture on shingle roofs and all rough lumber: 1 gallon crude oil at about 10 cents per gallon, one gallon No. 2 stove distillate at 10 cents per gallon. To every gallon of this mixture add 4 pounds of Venetian red or the same amount of Prince's metallic. The latter will make a very dark brown stain, the other one quite red. I generally use two pounds of each. They cost about five cents per pound. I use a spray pump instead of a brush. Mix this stain a day or so beforehand and stir several times. By using a spray pump a much better and quicker job can be done, but it takes two or three

times as much stain. But with stain at 30 cents a gallon it pays to use plenty. Keep this well stirred while using and the color will last several years. I use a small hand pump in a bucket, but had to buy a finer nozzle. A cheap stain for inside finish on Oregon pine is the black-dope that comes with rubber roofing, thinned with coal oil. Apply with brush and wipe with a cloth in a few minutes. One of the nicest houses in Glendale is finished inside with this, but the owner doesn't know it. We called it fumed oak.—E. K. Grant, Wasco.

Another cheap stain for inside finish is to simply take a bottle of ink, or, better still, a bottle of the blue black writing fluid, mix with water and brush over surfaced Oregon pine or similar finish of beautiful grain and one may get a pale gray stain. Test on sample board so as to secure right consistency. A very light shade may be secured by brushing on the board and then wiping off. If a silver gray is desired add whiting or calcimine.

Wells in the Yucca Belt

Can you or any of your readers give me any idea how deep I will have to drill a well to get water on land where the giant yucca grows? Our wells here at Agulla, Arizona, and vicinity are about 350 feet on an average. Just northeast of here about ten miles is the southeast end of the great yucca belt reaching from Mojave, California, into Arizona. I do not know of any well having been drilled in this belt and would like to hear from someone having had experience. Some of the best land in Arizona is in this yucca belt, but everybody is afraid to tackle it for water.—Subscriber, Agulla, Arizona.

Have any of our readers had experience which would help out this inquirer?

Grapes for Wine

Where can dried wine grapes for making wine for private use be bought and what is the price? Is it against the law to ship these grapes?—Subscriber, Exeter.

We believe it is unlawful to ship grapes for wine making purposes. However, best information in this particular may be had by writing California Grape Growers Protective Association, E. M. Sheehan, president, American National Bank Building, San Francisco.

Poisoning Squirrels

What is the best way of placing poison for squirrels? Have tried poisoned barley, which was not very effective. What is the best time of year to place poison?

The poison grain as prepared by horticultural commissioners or farm advisers has usually been especially successful in reducing the squirrel pest. At this time of the year, however, if the pest is infesting a grain field or a place where they get plenty of good grain and where they have a dearth of fruit, watermelons, apples, or almost any fruit are most attractive to them and may be poisoned with strychnine.

Cabbage Aphis

I will be most grateful for an antidote for cabbage bugs. They are pink in color, gather in bunches, the leaves curling up and finally dying.—Subscriber, Banning.

These insects must be aphids, though cabbage aphis has a white, powdery cover and pink "flesh" beneath. Prepare a spray of one ounce of 40 per cent nicotine sulphate, five ounces of common soap and five gallons of water. Boil the soap in a lesser quantity of water until dissolved, add water to make five gallons and stir the nicotine sulphate until thoroughly mixed and spray affected plants with this material.

Skin Disease of Rabbit

Doe has some skin trouble which leaves bare spots where fur all comes off.—Subscriber, Downey.

The statement of trouble is not complete enough to enable one to diagnose the case. If it is mange, which is often found, would wash scabs or skin with warm soap and water and apply an ointment of one part sulphur and three parts pure lard. Again, doe

may be inbred and system not able at times to properly supply skin with nourishment for roots of hair. If subscriber will describe conditions of subject more fully, will reply at more length, if possible.—W. D. W.

Ground Burnut

I am sending herewith a bad weed that spreads rapidly. Should like to know what it is.—Subscriber, Fairmead.

This is the ground burnut described on page 101 of the Cultivator of July 24. Every means possible should be taken to eradicate this rapidly spreading pest.

Cory Thornless

Will the Cory Thornless blackberry revert and become thorny?—Subscriber.

All life reverts, occasionally, to original form, whether animal or vegetable. Any thorny plant occasionally has thornless parts. Such are common in many species of cactus, in fact in all cactus and other plants. It is not strange, then, that plants propagated from these parts occasionally or even constantly revert. In fact, such characters are often hard to "fix" in these aberrant sports.

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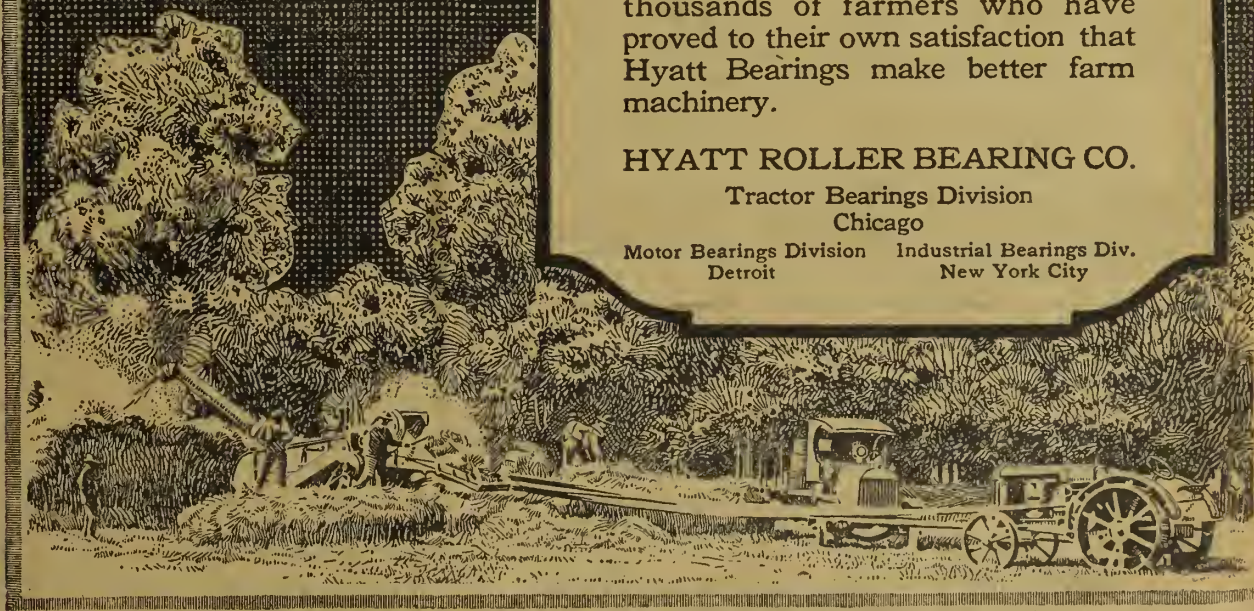
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Colony Zarilda Newman

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Why Stockyards?



CALIFORNIA livestock people repeatedly bring up the matter of stockyards. Los Angeles at one time reached the stage of making subscriptions to a great stockyards scheme, but it was a scheme without reliable foundation. Sacramento has also had hopes. For some reason even government support, which was promised and given to a limited extent for a time, has not been sufficient to secure the establishment of the yards.

At the recent Cattlemen's Convention held in Los Angeles the matter was presented in such a way that it simply called for endorsement of the livestock men present at that time to put through the yards for Los Angeles. A strong campaign was made against this endorsement, and so far as audible voting went, the vote was practically unanimous against such endorsement. At that time Fred H. Bixby, president of the association, led the fight against the yards. He said:

"The cattlemen of this state—and I have traveled all over it—95 per cent of them, are against it. The idea of the cattlemen owning the stockyards, when they don't want them, is nonsense. It is a sure thing that the centralization of this business is wrong. The farm bureau sales will be in the communities closest to where the cattle are. They may be only 20 miles apart or they may be up to 50 miles apart. You bring your cattle in from your ranch and you put them up at auction and if the members of the association will come through and bring their cattle to these sales I will promise to get the buyers there.

"Now with all of the stockyards that I have ever seen—I have been to four or five of them—I never have known of a single case where the producer got a square deal. Not a case! He can't get a square deal when he has nothing to say about his business. It can't be done. Here is the only remark of Mr. Morrison's that has 'stuck in my craw,' and that is—I will pass by all the other remarks—that Jastro and I don't need the stockyards. That has been the greatest handicap I have had in trying to run this association. I have had the handicap of being a big cattleman. We need a stabilization of the market—we certainly do—you are right about that; but you insinuated that because we were big men that we could get out and ship our cattle East and we could do a lot of things that the little man can't do. I will tell you if there is anybody in the world that is fighting the battles of the little cowpuncher (the fellow who punches the cow), it is 'yours truly.' And of all the men in the state or in the United States who is battling for the rights of the little cowman and the man who is unable to fight his own battles, it is Mr. Jastro.

"Now there is one more thing to prove the fact that the producer when he ships to the stockyards gets stung. In talking to Harry Jones I found out that he bought in a stockyard this year—he bought about 6,000 steers, I understand. Why did he buy them from the stockyards? He went to Ogden and bought 6,000 feeder steers from the stockyards because he could get them there cheaper than he could get them in the country. If he bought out in the country, the man in the country would have gotten more money for the steers than he got for them at the stockyards and he had to pay the freight and the yardage and the commission and everything else and in the final windup get less and less all the time—less than he could have sold for right at home.

"Now I want this association—I will tell you I am speaking not only personally but I am speaking for 95 per cent of the cattlemen in the state of California—I want you to back me up in my position, and my position is this: That if I never do anything in the world but this, I am going to see to it that nobody hangs a millstone around the neck of the producer like the Union Stockyards."

We cannot feel that the sentiments expressed by Mr. Bixby are held by the great majority of cattlemen and we hope Mr. Bixby today has different ideas regarding the advisability of the yards. In any case, he has since found it necessary to send some of his stock to the yards located at Portland. This

was touched upon in a copy of the California Cattleman by David J. Stollery, secretary of the association, as follows:

"To the Members of the California Cattlemen's Association: By reason of the prevailing market condition, it would appear that outside markets afford the best opportunity for disposal of cattle in the present situation. You will find enclosed a detailed report presented by President Bixby covering a shipment of cows and steers to the Portland market on May 25 and sold there on May 31. Should you contemplate shipment out of the state and will advise us a few days ahead, we shall be pleased to assist in securing cars and in facilitating shipments."

This letter from Mr. Stollery was followed by a statement regarding the transaction which was made by President Bixby. It is as follows:

"In submitting the following report (in detail) of sale of nine cars cattle May 31, I call to your attention the following points:

"First—The four cars cows which brought 10.25 at Portland stockyards right straight through were dehorned. They netted me 9.40 at San Miguel. I could not sell these cows to anyone in the state even at eight cents.

"Second—The No. 1 Class A steers brought 11.50 at Portland and one exceptionally good steer 12.50. The rest of the steers which were not so good and among which were six or eight Holsteins, brought 9.65, 10.90 and 11.00. They were all dehorned.

"Third—These cattle were shipped approximately 1,000 miles. They were given an exceptionally good run—were sold on the Monday morning market at Portland, May 31, and netted me 9.40 for the good cows and over 10.40 for the good steers.

Fourth—The cost, including freight, feed expense, etc., was 1.03 per 100.

"Fifth—The day these were shipped and the day they were sold eight cents for cows and nine for steers were the very best prices offered by the California buyers.

"Sixth—My advice, backed up by experience, is to ship out if you are forced to sell now, and if not, hold cattle until August."

CONEJO RANCH DUROC SALE

The second day of Duroc bred sow offerings, that at Conejo Ranch, Newbury Park, seemed to afford cumulative evidence that midsummer sales of this character are not a thing to be made popular at the present stage of swine breeding operations in California. It is only the top animals of these midsummer sales that attract the attention of visiting breeders, and the local support for such offerings is sure to lag following the display of fireworks when the big breeders clash over the ownership of animals whose array of pedigree lines or other marks of high character make them much sought after.

A case much to the point is the sale of the noted show and brood sow, Great Wonder's Lady 5th, at the snug price of \$1,350. She was shown to have produced a truly sensational litter of pigs the present year, a litter whose selling value will no doubt double or treble that of the dam herself. She went to the bid of R. F. Talbot, Nogales, Arizona.

W. H. Dupee, owner of Edgemoor Farm, Santee, got his fine two year old sow, Inspector's Golden Beauty, bred to Giant Wonder, at \$300.

The detailed list of selling prices shows a sacrifice of values. It was for this reason, and from sheer lack of competition among buyers, that the sale management concluded best to stop the sale after a fair and square effort had been made to continue to the end. Following this a satisfactory deal was made for the sale of seven head of bred sows to one party.

0, Great Wonder's Lady 5th, R. F. Talbot, Nogales, Arizona, \$1,350.

1, Inspector's Golden Beauty, W. H. Dupee, Santee, \$300.

2, Belle Wonder 2d, Winsor Ranch, Bonita, \$175.

5, Mae Belle, Cy N. Clark, Modesto, \$65.

8, Lady Critic 4th, R. A. Scott, Fullerton, \$75.

10, Lady Model, Montana Land Co., Hynes, \$65.

11, Miss Carmen 3d, Montana Land Co., \$85.

15, King Orion's Mary Ann 3d, Montana Land Co., \$65.

19, Red Wing 1st, W. H. Dupee, \$160.
20, Red Wing 2d, Diamond Bar Ranch, Spadra, \$175.
29, Ellen 2d, Russell Bros., Triunfo, \$50.
33, Miss Model King 2d, Witt & Huey, Lankershim, \$150.

THE WINSOR RANCH SALE

The sale of Duroc-Jersey sows held by the Winsor Ranch, Bonita, at Los Angeles, Wednesday, July 28, was very well attended by breeders and hogmen from various parts of the state. The offering was first class as to type, individually and breeding, and was presented in ideal condition. However, the bidding was not very brisk and the buyers secured many bargains. The entire range of prices paid was very conservative.

The top of the sale was Miss Pathfinder 12th, the first prize senior yearling at the 1919 state fair. She was purchased by W. H. Dupee, Santee, at the record price on the coast of \$2,375. Mr. Dupee was the heaviest buyer in the sale and secured No. 2, the fine yearling Princess Pat, at the next highest figure, \$550, and in addition made several very good selections from the better part of the offering.

J. P. Walker, Visalia, was the next heaviest buyer, securing five choice young sows that will do much to improve his herd.

Col. Geo. Bell, Tulare, was on the block and was assisted in the ring by Col. Fred Gatewood, Fresno. These gentlemen handled the sale in a very efficient manner. Following is a list of animals sold:

- 1, Miss Pathfinder 12th, W. H. Dupee, Santee, \$2,375.
- 2, Princess Pat, W. H. Dupee, \$550.
- 3, Great Miss, C. C. Ellis, Exeter, \$150.
- 4, Model Rose, J. P. Walker, Visalia, \$350.
- 5, Anna, J. P. Walker, \$185.
- 6, Miss Minnie 2d, George Jr., Republic, Chino, \$100.
- 7, Winsor Lady Beauty, W. H. Dupee, \$95.
- 9, Model Fern 3d, Conejo Ranch, Newbury Park, \$105.
- 10, Vera, Witt & Huey, Lankershim, \$240.
- 11, Miss Minnie 3d, C. C. Ellis, \$240.
- 12, Bonita Girl, Conejo Ranch, \$175.
- 13, Belle Ardella, Diamond Bar Ranch, Spadra, \$100.
- 14, Model Hattie 2d, J. P. Walker, \$185.
- 15, Model Fern, J. P. Walker, \$200.
- 16, Proud Chief's 2d, Way & Son, Modesto, \$130.
- 17, Model Defender Lady 21st, J. P. Walker, \$190.
- 18, Model Defender Lady 23d, W. H. Dupee, \$225.
- 19, Orion Belle, W. H. Dupee, \$150.
- 21, Great Princess 1st, W. H. Dupee, \$100.
- 22, Cherry Blossom, \$300.
- 23, Model Jessie, W. H. Dupee, \$160.

CONEJO RANCH HAMPSHIRE SALE

The Conejo Ranch Hampshire sale, held at the ranch on July 30, was fairly well attended and a fine degree of popular interest manifested, notwithstanding the extreme heat of the day.

An element of interest attached to the presence of E. M. Harsch of Peoria, Illinois, representing the American Hampshire Swine Record Association.

With Col. Geo. W. Bell on the block, Fred Gatewood in the ring and Mr. Harsch as an all around booster, there was some quite effective team work done toward getting a fair appreciation of values as the sale progressed.

There was not a single outstanding high price paid for the day's offerings, \$200 registering the top, that being the price paid by A. V. Buell for the junior yearling sow Florein 4th, bred to Conejo Prince. C. J. Gilbert of the Tarzana Ranch, Van Nuys, was the successful contender for many of the more valuable offerings.

Josh L. Wilson Jr., an aggressive young lad of 14 years, was present to try his hand again at taking home with him to Lamanda Park some of his favorites.

Notwithstanding that low prices ruled for the most part in the two days sales conducted by the Conejo Ranch management, it was looked upon as effective pioneer work toward the popularization of the business of breeding the improved types of swine. Below is full list of all sale transactions:

- 1, Senator Maid 3d, Tarzana Ranch, Van Nuys, \$125.
- 2, Queen Allen, A. V. Buell, Carpinteria, \$175.
- 3, Senator Maid 2d, Tarzana Ranch, \$150.
- 6, Betty 2d, \$100.
- 9, Maud, Tarzana Ranch, \$125.
- 12, Jean, T. W. Middleton, Camarillo, \$85.
- 16, Anita Stewart, Fairbanks Ranch, Redlands, \$110.
- 19, Favorite 2d, Tarzana Ranch, \$175.
- 20, Susan, Tarzana Ranch, \$80.
- 22, Marguerita, Dream Wood Farm, Peoria, Illinois, \$100.

- 23, Florein 4th, A. V. Buell, \$200.
- 24, Florein 5th, Tarzana Ranch, \$160.
- 26, Senator's Beauty, F. A. Smith, Zelzah, \$100.
- 28, Bessie's Best, Russell P. Hall, Niantic, Illinois, \$100.
- 33, Jennie Messenger 3d, Tarzana Ranch, \$100.
- 34, Jennie Messenger 4th, A. V. Buell, \$80.
- 36, Miss Liberty 1st, Josh L. Wilson Jr., Lamanda Park, \$35.
- 37, Miss Liberty 2d, \$65.
- 38, Miss Liberty 3d, P. W. Penland, Moorpark, \$55.
- 40, Lillie 1st, Tarzana Ranch, \$75.
- 45, Beatrice 1st, \$50.
- 46, Beatrice 2d, Tarzana Ranch, \$60.
- 47, Beatrice 3d, \$65.
- 48, Beatrice 4th, \$40.
- 49, Helen 1st, C. G. Melners, Ojai, \$75.
- 50, Helen 2d, John Marwick, Santa Barbara, \$30.
- 51, Helen 3d, John Marwick, \$50.
- 62, Liberty Queen, Tarzana Ranch, \$70.

SCRUB COWS IN SOCIETY

The United States department of agriculture expects to exhibit a grade family consisting of a pure bred sire, a scrub cow and the grade offspring of this mating at the National Dairy Show to be held at Chicago in October, 1920. Some of the cattle clubs will also have similar exhibits.

The purpose of this feature is to interest the owners of scrub and low grade herds and to show in a practical way the manner in which such a herd may be improved by the use of a pure bred sire. This will do much to combat the prevailing idea that the National Dairy Show is of interest only to the owners of pure bred herds. It will help also to advertise the fact that the United States department of agriculture, through its "better sires" campaign, is offering cooperation and aid to the owner of poorest herd as well as to the owner of improved stock.

After all, Mrs. Scrub doesn't get into society on the strength of her own qualities; she is accepted purely on account of the merits of her mate and her progeny.

RAISING CALVES ON MILK SUBSTITUTES

The need for home raised calves has led to a search for a "milk substitute." While the feeds which have been tried have given some degree of success, there has not yet been found a complete or entirely satisfactory substitute for milk, says W. W. Swet of the Missouri college of agriculture. It is doubtful if any article or combination of articles that will completely take the place of milk in the diet during the first two months of the calf's life can be found.

There are a number of so-called milk substitutes on the market. Most of them are sold in the form of calf meal, and with proper care many of them will give good results. It should be clearly understood at the outset that calves raised on calf meal will not be as fat and sleek as those raised on milk. They will be growthy and healthy, however, provided they are given proper attention. Calf meals can be bought from local dealers at varying prices or they may be mixed at home if the proper ingredients can be secured.

A calf meal, in order to give success, should be made up of ingredients that are easily and readily digested and that are not too expensive. A few of the most commonly used materials are: fine corn meal, flour midlings, wheat flour (poor grade), ground rice, oat flakes, barley malt, cocoanut meal, linseed meal, flaxseed meal, cottonseed meal, blood flour, blood meal, and dried skimmilk or skimmilk powder. Skimmilk powder is not absolutely essential and it is rather expensive, but many of the calf meals that have given the best results have contained considerable amounts of it.

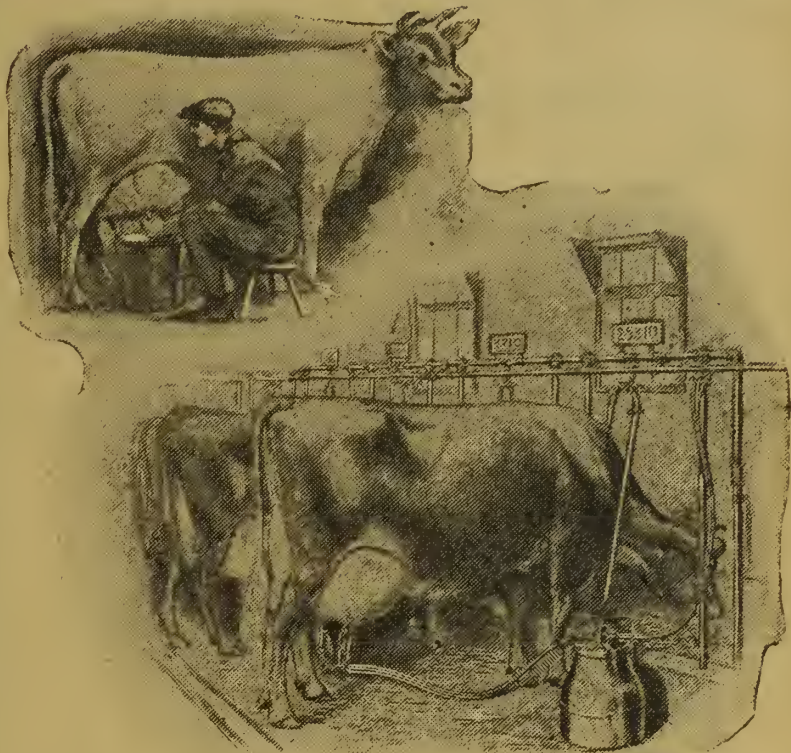
FIVE ANIMALS NOW COMPOSE AGED HERD

The Shorthorn aged herds at this year's state fair will consist of five animals instead of four, as in former years. The additional requirement is for a cow three years old or over which makes the Shorthorn herd identical with that of other breeds of cattle. Secretary Paine is sending notices to the breeders of the change, as a number of them have confused the conditions of entry in this class with the competition for single cows three years old or over. In the latter competition these cows must be shown with a calf dropped since January 1, while in the herd competition the cow may be shown whether or not she has a calf at foot, if she is otherwise eligible.

Hand Milking

versus

The De Laval Milker



Hand milking is not a natural process. Neither is it uniform nor regular.

Even the best hand milker does not milk the same every day—nor at every milking. It is a well-known fact that even the best hand milkers milk more rapidly and energetically at some times than at others, as the time of year and a man's physical condition vary his methods of milking. Matters of temperament and disposition quickly affect the cow and interfere with the secretion of milk.

The De Laval Milker, on the other hand, is regular, uniform, and positive in action at every milking. It milks the same at any hour of the day and every day in the year. This regularity and the alternating action at fixed speed, are agreeable to the cow and promote secretion and regular flow of milk.

The De Laval Milker also saves time and labor. In fact, one man with a De Laval Milker can milk three times as many cows in a given time as he can milk by hand.

The perfect sanitary features of the De Laval Milker are important. All parts that come in contact with the milk can be quickly and easily cleaned and sterilized. This is especially necessary in marketing certified milk.

Write to nearest De Laval office for Milker Catalog, mentioning number of cows milked

DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST
61 Beale Street

San Francisco, Cal.

The Stanislaus County Holstein Breeders Association

Announce the sale of 45 head of Holstein Cattle at the Patterson Fair Grounds, Patterson, Cal., on the last day of the fair, Saturday, August 21st, 1920, consisting of 45 head, including 25 cows and heifers bred to some of the best bulls in the county, 12 open heifers and 8 bulls. These cattle were selected for utility, quality and breeding by Messrs. A. M. Bibens, H. E. Cornwell and R. L. Holmes. An especially good lot of cattle, all tuberculin tested and backed by the strongest possible guarantee. For catalog and information address

E. M. Morrow

Modesto, Cal.

Secretary Stanislaus County Holstein Breeders Association

AUCTION

500 Holstein Cows & Heifers 500

2 Registered Holstein Bulls. Steers
Dairy Equipment

On the Los Posos Land Co.'s Ranch

2 1/4 miles west and 1/4 mile south of

CORCORAN

Wednesday and Thursday, August 18th and 19th

The big grade dairy sale of the year. See next issue of the Cultivator for descriptive ad. Los Posos Land Co., Owners

Col. Ben A. Rhoades

Harold B. Rhoades

Auctioneers

1501-3-5 South Main St.

Los Angeles, Cal.

Home of King Korndyke Pontiac Mead

Bargains in Bull Calves from Tested Dams.
Top Herd in U. S. for Fat Production of 100 cows.
LOS ANGELES COUNTY FARM HOLSTEINS

HONDO, CALIF.
3 Miles South of Downey on Downey-Long Beach Blvd.

On to Butte City!

Wednesday, August 11, 1920

Butte City Ranch, Butte City, Cal.

Third Annual Public Sale

60 Registered Shorthorns
105 Registered Shropshires
20 Registered Berkshires
10 Shetland Ponies

An opportunity to purchase foundation breeding animals from a breeding establishment that has grown famous through its sales of dependable purebreds at moderate prices.

This offering is without question the most desirable ever made from this ranch, and comes at a time when there is an especially keen need for better and more profitable purebreds on California farms.

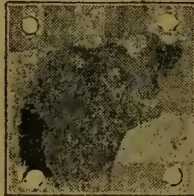
Come to the sale whether you are a buyer or not. Last year a gathering of over 600 was made comfortable and preparations are being made for the crowd of 1000 that promises to be present this year.

Management

California Breeders Sales and Pedigree Co.

J. M. Henderson, Pres. C. L. Hughes, Sales Manager,
Sacramento, California.

Auctioneers—Col. Ben A. Rhoades, Los Angeles; Col. Geo. W. Bell, Tulare.



ARE YOU GETTING READY?

Remember that this Association offers \$150,000.00 in cash prizes for Shorthorns in 1920. Add to this the amount offered by the various fairs and shows and the aggregate is around \$300,000.00. Now is the time to be fitting your entries. It pays to show, aside from the prize winnings.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION

13 Dexter Park Ave.

Chicago, Ill.

CARRUTHERS SHORTHORNS Bulls For Sale

Just now this herd can supply a number of exceptionally high class young bulls that are just the sort for range improvement. They are well bred, thick fleshed, heavy boned, and good colors—and they are priced to sell.

Carruthers' bulls will be found on many of the best ranges in the West—there is a reason.

We also have Berkshires.

Visit the farm or write for prices.

W. M. CARRUTHERS

Live Oak

California

Ormondale Ranch Shorthorns

Redwood City, Cal.

HERD SIRES

Boquhan Guinea Stamp, the great Imported Young Broadhooks bull, Golden Goods Jr, sire of LITTLE SWEETHEART, Grand Champion International Show, Chicago, 1919.

Bulls and heifers for sale.

Duroc-Jersey hogs for sale.

James McDonnell, Supt.

CALEDONIA SHORTHORNS



Imp. Caledonia

Caledonia Shorthorns constitute one of the choicest collections of the breed owned in America. Our herd bulls, Imp. Caledonia, Gainford Matchless, grand champion at the 1919 San Francisco show and Pine Grove King stand out prominently in the West. Our females represent choice Scotch and American families, and are noted for their type and quality. We can at all times furnish foundation material and bulls suitable for any herd or for the range. Our prices are moderate and every animal is guaranteed. Visit our farm and herd. Send for special bull list.

CALEDONIA FARMS
WEST SACRAMENTO, CALIF.
OFFICE—57 POST ST. SAN FRANCISCO.

Golden Glen Jerseys

With Our Herd of 60 Select Jersey Females

to be maintained under sound practical conditions of farm management, we feel that we have the nucleus for one of California's uniformly high testing herds.

Every cow goes on official test at freshening time.

Herd to be represented at the Southern California Fair, Riverside, Oct. 13-19.

Geo. W. Thomas & Sons

Arlington, Cal.

"CALIFORNIA THE HAPPY BREEDING GROUNDS"

California livestock men are smiling over an unusual piece of news. It's a most decided "scoop" for a contemporary. Here it is:

"While the judging of Holstein cows in the arena of the California International Stock Show at San Francisco last fall was being delayed for the lack of one entry, few realized that the royal lady, Tilly Alcartra, for whom they were waiting, was just bringing into the world a son, who would bring buyers from four continents to bid for him, or that the price paid would mark the highest price ever paid for a youngster under six months of age at a public sale.

"Stepping proudly into the arena from which she was led with the blue ribbon, Tilly Alcartra returned to her young hopeful, who promptly scrambled to his feet, and, with waving brush, started to fulfill his mission on earth. Less than six months later he is knocked down to a bid of \$50,000 made by two buyers from Canada."

Interesting? Yes, and surprising.

But in order to keep the records straight we feel constrained to add that March 31 appears as the date of birth in the official records of the Holstein-Friesian Association. Further, in the interest of the aforementioned records, we might add that Tilly did not leave the show ring (in November, 1919, which was the date of the California International) amid a fanfare of trumpets and sporting the coveted blue ribbon. You see, Tilly wasn't shown in any class at the San Francisco show.

Tilly's "young hopeful" could not have been so stunned when he was knocked down for \$50,000, as when he read this chronicle of that event in his life when he "scrambled to his feet, and, with waving brush started to fulfill his mission"—and that five months before he was.

LOOKINGBILL MAKES BIG SALE

One of the big general livestock sales to be pulled off in the Pomona Valley section is booked by Col. W. C. Lookingbill at his Union Stock and Sales Yards on Tuesday, August 17, at 9:30. Col. Lookingbill has the facilities for handling a big diversified livestock sale. Two hundred and forty-five head will be offered. In the offerings are a fair sprinkling of pure bred and registered Holsteins and Poland Chinas. It is worth while to remember that this class of stock is not likely to sell at anything like its true value in a big general sale ring. The Holsteins are of high character in performance and show yard type. The Polands are of the big type, representing Superba and Long Smooth Jumbo blood lines. This sale event should witness one of the big turnouts of the season.

Veterinary**Caked Udder**

What is best treatment for caked udder?—Subscriber, Los Angeles.

Would recommend the application of hot and cold cloths intermittently. These cloths should be applied morning and night, the hot cloth remaining on two or three minutes and then the cold. The cloths should be put on for 15 or 20 minutes, or, better, a half hour at each application. Care should be taken not to burn the udder with the hot cloths. Immediately following the application of the hot and cold cloths the udder should be carefully massaged with some lubricant. Sweet oil with a small amount of turpentine added usually gives excellent results. This treatment should be continued for several days, or until the inflamed condition disappears. —G. E. G.

Stringy Milk

Have a cow whose milk develops into stringy milk after standing 24 hours or even less sometimes. The cream does not separate from milk readily but clings to it in a thick bluish mash. Cow is on green alfalfa and dry hay.—Subscriber.

Stringy milk has caused a great deal of discussion from time to time and has resulted in some investigation.

The Illinois experiment station has done some very good investigational work on this particular subject. Stringy, or ropy, milk as it is more often called, must not be confused with the results of garget. In most cases ropy milk is found to be normal when it is taken from the cow. The ropy condition is found to develop any time after about 12 hours. It seldom develops before that time, but may in 24 or 36 hours. So far as known, there is nothing in the ropy milk organism to make it harmful to the consumer. It is not desired, of course, and is not salable. The ropy milk organisms do not develop where there is a high percentage of acidity; that is, if the acid forming bacteria develop rapidly it will prohibit the development of ropy milk organisms, in fact, the practice of rinsing the utensils with sour milk has been used. This practice, however, is one in which the cure is worse than the ropy condition as it will cause the milk to sour very rapidly. The infection evidently comes from the utensils in which the milk is handled. The organism has been found in many cases in the water in which the utensils are washed. No other source of infection has been found in many cases although the washing of the cans in the creamery may infect milk cans of many dairies. To clear up this trouble, therefore, one should wash and carefully disinfect all utensils which come in contact with the milk. One of the best disinfectants found for this purpose is chlorinated lime; a 12 ounce can of good strength added to 200 gallons of water will make a very strong disinfectant solution. All pails, strainers, cloths, etc., which come in contact with the milk should be put in this solution and allowed to remain 15 or 20 minutes. The milk house should also be scrubbed with a disinfectant solution and a desirable practice is to whitewash the interior of the milk house. Live steam will also successfully control the ropy milk organisms. It is essential to disinfect all utensils, as the omission of one small dipper may reinfect all the utensils again. If the above treatment is carefully followed the outbreak should be checked.

PROTECT THE WOODS FROM FIRE

A tree will make a million matches — a match may destroy a million trees.

Take no chances with lighted matches, tobacco, brush, or camp fires.

Forest destruction is quick—forest growth slow.

Burned timber pays no wages.

When fire is discovered, put it out if you can. Get help if you need it.

Are you practicing fire prevention and forest protection?

O.U.R. Hampshire Swine Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

F. C. Fairbanks Ranch Hampshires

The Grand Champion Boar HARVEY'S CHOICE 53147
at head of our great herd of brood sows.

HARVEY'S CHOICE
Grand Champion Boar
at Los Angeles 1919

LOOKOUT CHEROKEE
Grand Champion at Liberty Fair
SIoux QUEEN
Grand Champion at P.P.I.E.

18 High Class Brood Sows in herd—young stock for sale.

A. E. Harvey, Manager

Redlands, Cal.

Castleview Ranch Berkshires

The Home of **ACHIEVER** the Boar
and Enhancer, the Other Boar

A few choice boar pigs for sale sired by the above boars. A few choice bred sows for sale at reasonable prices.

Castleview Ranch, Santa Rosa, Cal.

Italian Vineyard Company Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

BIG PUBLIC SALE OF BERKSHIRE SOWS AUGUST 14TH

Alex. Wilson, Supt., Guasti, Cal.



The Southwestern Berkshire Congress will hold a consignment sale of about 40 bred gilts and sows on the D. J. Bastanchury Ranch, August 14th, 1920, at La Habra. All animals guaranteed to be in pig. Big barbecue and good time. Pay us a visit and get acquainted before the sale.

Every Farmer, Dairyman and Pork Producer

Should Attend the Big Sale of

America's Greatest Breed of Swine—BERKSHIRES

Saturday, August 14, 1920

at the D. J. Bastanchury Ranch, La Habra, Cal.

30 Bred Berkshire Sows and Gilts Will Be Sold

Consider This:

Berkshire sows are prolific, are kind, careful mothers, heavy milkers and can be purchased at reasonable prices.

Berkshire Sows Raise Their Pigs

Thereby making them the most profitable. Berkshires are ready for the market most any time, make satisfactory gains on most

any kind of feed and under any and all conditions.

Berkshires are market toppers — they topped the market at St. Joseph, Mo., recently on which day 8,000 hogs were sold. Berkshires sold for 15 cents per hundred higher than any other and considerably higher than the average. This is an old story to those who have been raising Berkshires, but to you, who are just starting, it's an important piece of information you should know.

Big Free Dinner at Noon

Sale Is Being Held By the

SOUTHWESTERN BERKSHIRE CONGRESS

Alex. M. Wilson, Guasti, President

Management: Bruce S. Bennett, Field Secretary, Western Berkshire Congress

Auctioneer: Ben S. Rhoades, Los Angeles, Cal.

C. J. Zinn, Inglewood, Secretary

Sale Starts at 1.30 P.M.

Duroc-Jerseys Are Prolific

and Profitable

They raise big families. Hardy, easy-feeding, quick maturing. That is why Duroc-Jerseys today outnumber any other breed in the United States. Out of all the hogs marketed in 1918, 51 percent were Duroc-Jerseys.



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The Largest Jr. Yearling
in the World

The Best Type Boar of the Breed
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Mrs. R. E. Whitley, Owner

VAN NUYS, CAL.

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V. F. Dolcini, Davis, Cal.

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Rancho's King's Col. Orion 286401 is our big-type boar in service. He is sire of all our spring litters. We also have now to offer some extra good fall boars of Great Model, Grand Model, and Ireland's Joe Orion blood lines. Correspondence solicited; also invite inspection at the ranch.

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O pure breds pay?

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That dairyman has passed and his place is taken by the man who makes his cows members of the cow testing association. He knows to the ounce their production of butter fat, and fortunately some of our dairymen are figuring as to cost in each and every one of these ounces. Present day feed prices force closer attention to the relation of cost to production, and that in turn forces closer attention to the particular animal that will make the most out of the high priced feed.

Of course the final question is: "Does it pay?" Here are a number of quotations from experts in animal husbandry:

The whole game of raising livestock depends on the ability to turn low priced feed into high priced meat and to make enough high priced meat when feed is high to still show a profit over cost of feed. The pure bred bull is the farmer's best guarantee that this can be done.—Oklahoma Farmer Stockman.

The trend of breeding and profits is certain to be downward so long as the sire is not superior to the dams.—American Farming.

Economic production is one of the surest and best means of maintaining a healthy volume of domestic trade and of meeting foreign competition. The use of better sires underlies efficiency in production.—"Better Sires; Better Stock" booklet.

There are innumerable examples of farmers whose prosperity has been founded on the production of pure bred stock. How many farmers do you know whose success is due to scrubs?—Edgar County (Illinois) Farm Bureau.

We have reached the period in national development when we should become ashamed of our scrub stock and demand as good as the best.—F. M. White, Alabama.

On the same day that native piney woods steers sold at the St. Louis market for \$12 per 100 pounds (the highest price ever paid for such animals up to that time), fat grade steers showing crosses of pure bred beef blood sold for \$15.25 per 100 pounds.

In Alabama a breeder has been using a pure bred bull for the last 15 years and his herd of 178 grade Herefords now ranges from one-half to fifteen-sixteenths pure bred. Practically one-half of his herd can scarcely be distinguished from pure breds. The yearlings now produced from high grade cows weigh 200 pounds more than native yearlings under the same conditions as to pasture and feed. The increase in weight has been brought about by continued use of a pure bred sire and the proper selection and culling of females.—U. S. Department of Agriculture.

The Georgia state college of agriculture has furnished the U. S. department of agriculture with the following striking example of improved breeding: At 15 months of age a heifer from a native scrub cow, sired by a pure bred Shorthorn bull, weighed 610 pounds. Its nine year old mature dam weighed 605 pounds. Although the heifer was but a half bred Shorthorn it quickly exceeded its dam in weight because of better breeding.

The first cross of a pure bred bull on the average dairy herd increased the income \$32 per cow per year, according to figures secured by the Ontario agricultural college, in comparison with 140 herds using grade bulls and 31 using pure breds. These figures show that if a farmer with 20 cows, using grade bulls, received an income of \$1,680, his neighbor with 20 cows who used pure bred bulls four or five years ago should receive \$2,320, or \$640 more. In other words, the man using a grade bull is paying a

tax of \$640 per year for this privilege. "You have to pay for a pure bred bull whether you use one or not."—F. G. Swoboda, Wisconsin.

There is no healthy cow so poor but that she will raise productive offspring if mated with the right kind of sire, and there is no cow so good but that it is possible to improve upon her greatness by mating her with a properly chosen bull.—Dairy Farmer.

The value of a pure bred dairy sire was well demonstrated on the farm of W. D. Gullledge. Five years ago he bought a good registered bull from a high producing herd and bred this bull to one of the grade cows. . . . They are milking heifers, from this bull, that are producing from 50 to 100 per cent more milk and butter than their mothers gave.—J. W. Cameron, County Agent, North Carolina.

The milk production of heifers out of ordinary cows and sired by Holstein, Jersey and Guernsey bulls increased over that of their dams by 64 per cent. The fat production increased by 52 per cent. The second generation increased in milk production over the original cows 130 per cent; in fat production, 109 per cent.—Agricultural Extension Service, North Carolina.

At the Iredell Test Farm, Statesville, North Carolina, the use of a good pure bred Hampshire ram increased the wool production in the flock of grade ewes from five pounds per animal to 8¼ pounds per animal the first cross. The improvement in mutton form was such as to add five cents a pound to the value of the lambs, which carried 50 per cent more weight than lambs from scrub rams.—Agricultural Extension Service, North Carolina.

In an experiment at the Missouri agricultural college 17 ewes were bred to a pure bred ram and 17 to a scrub ram. Eighteen lambs were produced in each lot. The lambs by the pure bred ram attained greater weights than lambs by the scrub ram in 75 per cent of the time, made these gains on 63 per cent as much grain and brought 75 per cent more money on the open market.—U. S. department of agriculture.

AN EXAMPLE OF PROLIFICACY

In the routine work in the office of the American Hereford Cattle Breeders Association attention is frequently focused upon the prolificacy of the Hereford cow. The 16th calf out of Emys of Lakeview, 153745, was recently admitted for record. Emys of Lakeview was sired by Halberd 117050 and out of Emys 64856, bred by Jno. W. Lenox of Missouri and owned by him until June 16, 1919, when Chas. C. Griffith of Iowa purchased her.

This cow was calved October 11, 1902, and dropped her first calf in March, 1905, when she was 29 months old. She is not yet 18 years old and has had 16 calves recorded as her produce, not having missed a year since her first calf was dropped in 1905. Of the 16 calves nine have been females, seven bulls, and two or three more calves may reasonably be expected from this good producer. If all the female produce of this cow, that is, if no females had been sold by Mr. Lenox, and none other than females tracing back to Emys of Lakeview, kept on the farm, barring accidents he would have had a herd at the present time of 145 females. Supposing the cow was worth \$200 to begin with, and each of her female progeny worth \$200, which is not an unreasonable figure, the herd would today be worth \$29,000, besides having realized returns from the bull calves during the 17 years.

The man who uses hook or line pulls in his single fish. But who join hands and pull a selue Get all that heart can wish. And each man's share is greater far. In size as well as weight. The secret of success is this—Co-op-e-rate.—Associated Grower

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Livestock News Notes**LIVESTOCK SALE CALENDAR****Holsteins**

September 23, Allana Farms, Dixon.

Poland ChinasAugust 21, Merced County Poland China
Breeders' Association, Merced.September 27, Hugh C. Shinn, A. J.
Elliott and Alex D. McCarty, Tulare.October 6, Kings Co. Poland China
Breeders Assoc., Hanford.**Shropshire Sheep**

August 11, Butte City Ranch.

Berkshires

August 11, Butte City Ranch.

August 14, Southwestern Berkshire
Congress, D. J. Bastanchury Ranch, La
Habra.The La Honda Land Company, La
Honda, has recently purchased from
J. F. Lehman, Lodi, ten Poland China
fall gilts sired by Smooth King Kor-
ver.The Stanislaus County Holstein
Breeders Association will hold a sale
of strictly high class breeding and
show cattle at the close of Patterson
fair on Saturday, August 21. These
cattle will be shown in the various
classes during the fair and then be
offered for public appraisal. They
were selected by a committee of three
breeders and in many instances will
include individuals that could not have
been purchased at private treaty.Countess of Heggles 3rd, a Shorthorn
cow owned by Innisfail herd, Davis,
California, gave more than a ton of
milk for the month of May and leads
the cows reported to the Milking
Shorthorn Society, Independence,
Iowa, in milk and butterfat yield for
the month. She gave more than a
ton of milk in April. The leading two
year old heifer is Princess Fallpail,
also of the Innisfail herd.During the quarter just finished, 114
Aprshire cows qualified for the Ad-
vanced Registry with an average pro-
duction of 10,731 pounds milk, 429.92
pounds fat testing 3.98 per cent fat.H. P. Slocum and Son, Willows, have
recently made two important sales
from their herd of Durocs. E. D. Con-
nolly, San Francisco capitalist, who is
developing a large ranch near Wil-
lows, purchased the tops of the Slo-
cum show herd. In the lot were in-
cluded three senior yearling sows that
are half sisters to Uneeda Invincible
Col, junior champion at the 1919 state
fair; Uneeda Invincible Queen, dam
of the above boar; a littermate to
the 1918 junior champion boar; a sis-
ter to the senior and grand champion
sow of 1918, and one of her daughters;
two line bred Defender sows and a
Grand Model sow. It goes without
saying that with such a foundation
the Connolly herd, under the manage-
ment of R. W. French, should come
to take an important place in the af-
fairs of the breed in this state. In
this connection it is of interest to
know that the plans of Mr. Connolly
include a high class herd of Holsteins
and that a start has been made toward
assembling a herd. The Connolly ranch
is located about six miles north of
Willows and is being equipped with
modern buildings.The Meadowbrook Stock and Dairy
Ranch, near Edgewood, Siskiyou Coun-
ty, owned by A. J. Clark and managed
by George Hansen, has recently en-
tered the ranks of the Duroc breeders
and is planning to have one of the
good herds of the North. Since April
they have selected from the Slocum
herd about 50 head of sows, their most
recent purchase including the boar
Uneeda Invincible Col, junior cham-
pion at the last state fair. They also
selected the second prize senior year-
ling sow of 1918 and a part of the
1920 show herd, among which were
three daughters of the good producing
sow, Uneeda's Model Queen 4th, a sis-
ter to the junior champion of 1918 and
a sister to the senior and grand cham-
pion sow of 1918.In a recent letter from Ansel M.
Easton of the Blackhawk Ranch,
Diablo, the following interesting news
is contained: "Mr. and Mrs. Ward
and Manager Lovell are at present in
Scotland looking over the Shorthorn
situation, and they are going over the
ground very carefully before buying.
They write that the cattle at the Scot-
tish shows are very high and no bet-
ter than our own. However, they ex-
pect to be able to assemble a ship-
ment of the kind that we want. The**Ask
Any Cow!****Ask any cow what keeps her in best condition
to give the most to the milk pail.**Pasture—green feed. Every farmer knows the answer. An
Indiana Silo enables you to put your pasture under cover
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frame made up at factory. Compression cam lock doors.
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**"I never saw hogs do so well or grow so fast as on this molasses
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C. H. HARTWIG, Yuba City, Cal.

**"It has enabled me to keep my stock in better condition at less ex-
pense."**

J. M. HENDERSON, JR., Sacramento, Cal.

**"Have one calf that refuses to drink new milk—prefers skim milk
with molasses. What do you know about that?"**

R. HECKLEY, Santa Rosa, Cal.

**"It has been a great advantage in getting the stock to clean up the
roughage."**

H. H. AMES, Chowchilla, Cal.

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it has been 'Molassed'."**

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DE LAVAL DAIRY SUPPLY CO.
61 Beale Street, San Francisco

Wards expect to be home in time for the state fair, but it is doubtful if Teddy arrives with the cattle before late in the year, as it appears that he will be able to ship from Glasgow direct to San Francisco via the canal."

An Associated Press dispatch reports that The Yankee, the Poland China boar recently purchased by W. H. Ellsworth & Sons, Goldfield, Iowa, from Williams Bros., Villisca, at the record price of \$40,000, has died. The Yankee has been rated as one of the greatest Poland boars of the present day. He was the sire of The Rainbow and other high priced and great show and breeding animals. He was also a littermate to The Pilot, grand champion of the last National Swine Show. His death is a hard blow to the Poland China breeding industry, as such boars as The Yankee are all too scarce.

One of the largest sales of grade cattle held this year is that of the Los Posos Land Company at Corcoran. The owners have spent considerable time and money in building up what is considered one of the very best herds of grade cattle in the state. Nothing but the very best that could be obtained in pure bred registered Holstein bulls has been used at the head of the herd, and when one looks over the beautiful dairy type of the females he will appreciate what breeding does in a grade herd. The owners have decided to put their large holdings into cotton and are plowing up their alfalfa. Otherwise this splendid dairy herd of 500 head would never be placed on the market. This sale will offer buyers a rare selection of grade Holsteins. It's a Rhoades sale.

W. H. Rough, Arlington, reports that the four year old Jersey cow Mabel's Raleigh's Figgis, is now completing a test of above 600 pounds of butter in one year. Lady the 1st of Rough Farm, with first calf, is making two pounds fat per day. A beautiful string of 12 registered heifers, bred and reared on the farm, are now bred for first calf to the herd bull, Merry Maiden's Conquest, he by Merry Maiden's 3rd Son.

Jersey cattle and Duroc-Jersey swine are a part of the mixed farming venture of C. J. Daily & Sons at Camarillo, Ventura County.

James Marwick is the owner of Braemer Ranch, Santa Barbara. The ranch is now well stocked with Percheron horses and Aberdeen Angus cattle.

Grant A. Brown of Eastman Farm, El Monte, plans to show again at the big shows this year with a string of young Jersey cattle of his own breeding.

Sixty-two Guernseys from Edgemoor Farm, Santee, were sold at Waukesha, Wisconsin, July 22, for an average of \$962. The famous bull, Imp. Itchen May King, and 29 of his daughters were features of the sale, the former selling to F. E. Fox and Goodhand Kingston & Son of Wisconsin for \$6,100. Twelve of his daughters averaged \$1,012.50 or more. Imp. Donnington Goldie 5th, first prize cow at National Dairy Show in 1917 and 1919 and third cow in Class E with a record of 796.52 pounds fat, was highest priced female. F. J. Reuping of Wisconsin made the last bid of \$5,200. This is the highest valuation yet placed on a Guernsey cow in the Waukesha sale pavilion.

O. M. Plummer, general manager of the Pacific International Livestock Show, to be held at Portland, November 13-20, has announced that over \$53,000 in premium money will be offered in the various classes.

Swine exhibitors at the state fair will be interested to learn that Prof. L. A. Weaver, who is to tie the Poland China and Duroc classes, has been invited to judge Polands and Durocs at the Illinois state fair and to serve as one of two judges for Durocs at the National Swine Show.

R. C. Gruhlke, Berkshire breeder near Dixon, has recently sold a trio of pigs to Chile.

We regret to announce the death of Fresno Boy, the Poland China boar owned by Fred Gatewood, Fresno.

This boar was a son of Orange Boy and a half brother of The Pickett. He had a record in the show ring, being first in class and junior champion at the last state fair. He was being fitted for this year's show.

The Milk Producers Association of Central California has not yet managed to get members together on a collective marketing plan, but will hold another meeting on August 14 at Modesto to try to arrive at some definite decision.

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Guy H. Miller, Modesto, Cal.

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Jersey Bull

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A fine straight one, bred right, priced right.

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For information on Shires write,
W. G. Lynch, Secretary American Shire Horse Association, Tonica, Illinois.

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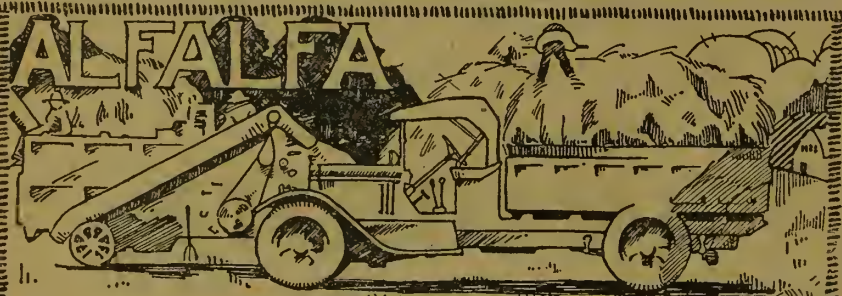
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We have the blood, and we have the alfalfa runs for exercise and variety of feed. We have young stock for sale at all times, and we play no favorites as to breeds.

Come and see sires, brood sows and growing pigs.

E. Avery Newton

Lankershim, Cal.

BERKSHIRE BREEDERS EXPECT-
ING GOOD SALE

By Bruce S. Bennett

The Berkshire breeders are enthusiastic over their prospects for a good sale Saturday, August 14. They have planned this sale for the benefit of those desiring to secure one or more good Berkshire sows, and the animals have been consigned by some of the state's leading breeders. Both the farmer and pork producer of California are showing unusual interest in Berkshires and are fast recognizing the Berkshire sow as a profitable investment. This is due, no doubt, to her ability to farrow large litters and raise them. The one thing that Berkshire breeders recognize is that there is a limit to the price a farmer can afford to pay for sows and they have determined to keep the price of Berkshires within reason, either at public or private sale. The sale will be held at the D. J. Bastanchury ranch, La

FAIR DATES

Napa County Fair, Napa, August 19-21. Harold E. Smith, Manager.
Sonoma County Fair, Santa Rosa, August 25-29. Secretary J. Francis O'Connor.
Patterson Fair, Patterson, August 19-21. Secretary T. J. Moe.
California State Fair, Sacramento, September 4-12. Secretary Chas. W. Palne.
Tulare County Livestock and Agricultural Show, Tulare, September 14-18. Secretary John A. Rollins.
San Fernando Valley Fair and Market, Owensmouth, September 15-18. Secretary Chas. L. Schufeldt.
Kings County Fair, Hanford, September 21-25. Secretary Frank C. Russell.
Ventura County Fair, Ventura, September 22-25. Secretary L. P. Hathaway.
Glenn County Livestock and Agricultural Association, Orland, September 27-October 2. Secretary E. A. Kirk.
Fresno District Fair, Fresno, September 28-October 2. Secretary Walter C. Ficklin.
Shasta County Fair, Redding, October 1-2.
Los Angeles Livestock Show, Los Angeles, October 2-10. Secretary C. R. Thomas.
Siskiyou County Fair, Yreka, October 5-9. Secretary Claude R. Gillis.
Southern California Fair, Riverside, October 13-19. Secretary W. W. Van Pelt.
Northern Arizona Fair, Prescott, October 14-16.
Western Royal Livestock Show, Spokane, Washington, November 1-5. Secretary Bert L. Hilborn.
Pacific International Livestock Show, Portland, Oregon, November 15-19.

Habra, starting promptly at 1:30 with Ben S. Rhoades as the auctioneer.

The sale will be preceded by a big free dinner, and arrangements are being made to care for a large crowd.

DIAMOND BAR IS GROWING

Secretary Hopkins of the Fred Lewis Diamond Bar Ranch at Spadra has just returned from some of the Duroc centers of the Middle West. He has seen some of the greatest specimens of the breed produced on Diamond Bar since its beginnings, but he wished to see the Reds at home. He is now back and more enthusiastic than ever. Arrangements are now made for continuing the work of Diamond Bar along Duroc lines by securing R. K. Walker, president of the State Duroc-Jersey Breeders Association, as manager of the swine department of the ranch. Mr. Walker has been manager at Fontana and at Winsor and has stuck consistently by the Durocs. He starts here with a string of grand champions, some from the National.

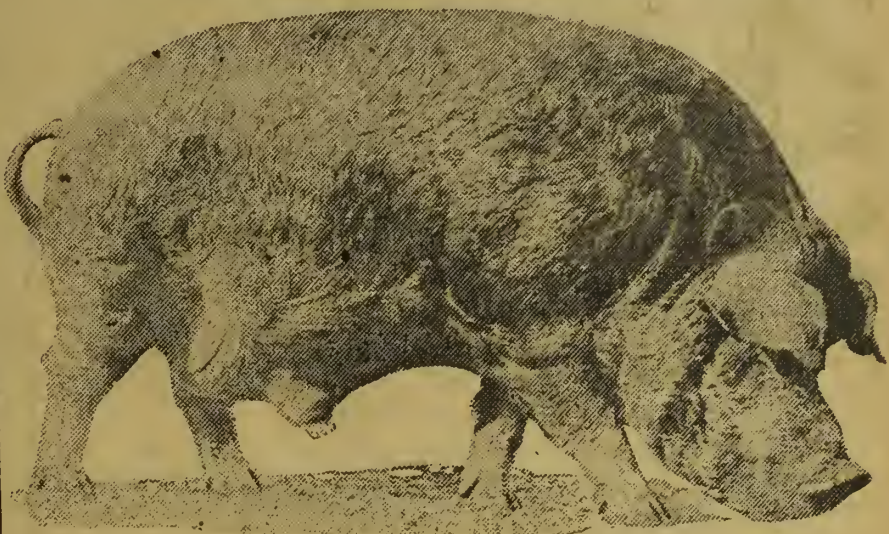
Mr. Lewis will spare no pains in building up a still greater herd than Diamond Bar now possesses.

DISASTROUS FIRE

During the afternoon of July 29 a disastrous fire occurred at the university farm, Davis. The 350 foot bull shed just west of the large dairy barn was completely destroyed. Four valuable dairy bulls perished. One of the bulls was an Ayrshire that had been loaned the university by J. Henry Meyer of San Francisco, and one, a six year old Jersey, You'll Do Oxford Lad, had been loaned by J. E. Wherrell of Riverside. For a time it appeared that the main dairy barn, the judging pavilion and the horse barn would be destroyed, but ample water pressure saved these buildings. The origin of the fire is not known.

Diamond Bar Durocs

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ACE OF PATHFINDERS

This great boar headed the World's Grand Champion Duroc herd at the 1919 National Swine Show; also the first prize get of sire herd. All animals in both herds are owned by us.

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He is by Pathfinder, out of Hiawatha, by Crimson Prince, and, besides his show ring record, he is considered one of the greatest sires of the breed.

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Now that we have decided not to hold a summer sale, we are ready to offer at private sale the greatest array of Duroc breeding and individuality ever put before California buyers. We have culled closer than ever this season, and every animal not fully up to the high Diamond Bar standard has been sent to the fattening pen. And those that remain—say, man, they are real ones!

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Diamond Bar Ranch

Fred Lewis

Owner and Manager

R. K. Walker

Hog Department

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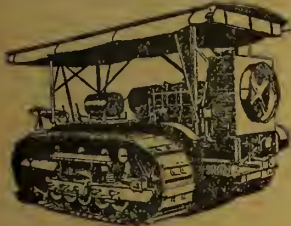
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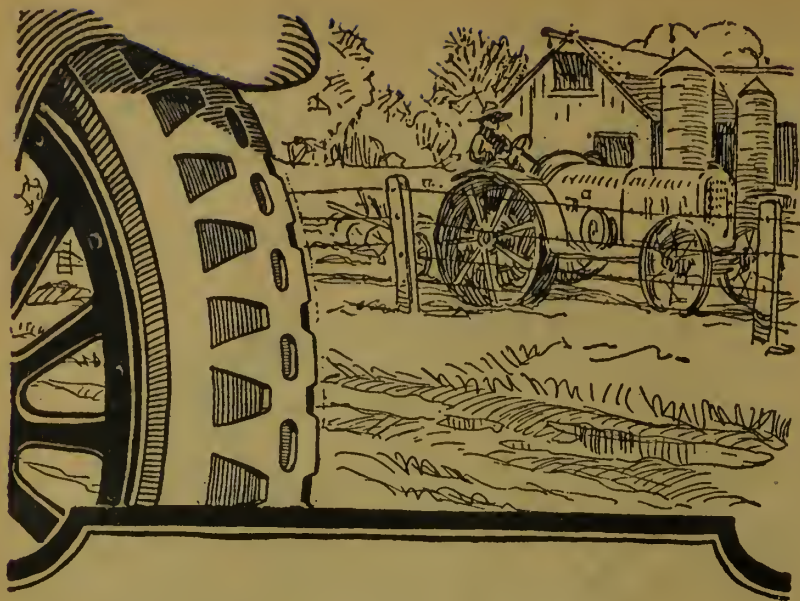
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Fattening the Cockerels

By Jean A. Koethen



THE American farmer comes in for a good deal of criticism because of the condition in which he markets his table poultry. Possibly the criticism does not apply so much to the specialty poultryman as to the farmer, and yet I remember hearing Edward Brown, the English poultry writer and lecturer, say, after some months in the United States, that our lack of good table poultry was conspicuous. For one poultryman who takes time to properly fatten and finish his cockerels there are 20 who let them go to market after either a desultory attempt at fattening or none at all. "The people of the United States," says H. Armstrong Roberts, "are probably the greatest consumers of poultry and eggs in the world, and yet we are said to be satisfied with a very poor quality. The average quality of chicken seen in the retail stores and on hotel tables in this country is far below that found in France, England, Belgium, Denmark and so on. This is largely due to the great consumption of broilers, which, however good they may be in some respects, lack the tenderness and abundance of flesh found on fowls that have been properly fattened before killing. In fact, as a general practice the fattening or finishing of poultry by special processes is virtually an unknown industry in this country."

Fattening Feeds

Oats, corn, barley and wheat middlings are the feeds generally used for fattening. Corn is not considered sufficient, because, while it does add weight quite rapidly, the weight consists mainly of a deposit of oily fat in layers under the skin and in masses in the abdominal cavity. The "corn-fed" chicken is a good seller, but not so good as the "milk-fed," which has been fattened on a combination of corn and other ground grains, the mixture being moistened with sour or skim milk.

The fattening feed, whether the birds are in crates or in small pens, must always be soft. If milk is not available the ground grains are moistened with water, but milk makes a far better table bird. When milk and a combination of grains are used, the fat, instead of being in layers, is distributed in tiny globules throughout the tissues; consequently in cooking it is not wasted, but makes the tissues soft and juicy. Ground barley or oats, with one-third corn meal, thoroughly moistened with sour milk into a pasty mixture, makes a splendid fattening feed. Another good fattening ration consists of 100 pounds corn meal, 100 pounds wheat middlings and 40 pounds animal meal, which takes the place of milk. Still another mixture, which is recommended by the Ontario agricultural college, consists of two parts corn meal, two parts ground buckwheat and one part pearl oat dust, with an equal weight of skim milk.

Crate Feeding

While crate feeding is not practiced to any great extent by poultrymen themselves, it is practiced at a good many big feeding plants east and west, and always with a most gratifying gain in weight and palatability. At one such plant, where 134 Barred Rocks and White Wyandottes were fed three weeks on ground oats and sour milk, the average gain in weight was one pound, 13 ounces. It took 2 pounds 14 ounces of grain and five pounds 12 ounces of milk to produce one pound of flesh. At another plant 12 Buff Orpingtons, fed on a ration of 100 pounds ground oats to 220 pounds milk gained two pounds each in three weeks. Feeding records show that on the average it takes three pounds five ounces of grain and six pounds three ounces of sour milk to make one pound of new flesh. Just what gain there would be in feeding for this additional pound in weight must depend, of course, on the cost of feed and the price received for the pound of flesh.

Poultry fattening has been recognized industry in England for 400 years, and has been especially developed in Sussex. "The Sussex method," says Frank C. Hare in "Secrets of Crate Feeding," "is to take chickens from two and one-half to

three months old weighing about three pounds each. They are put in slat crates six feet six inches long by 16 inches square inside. The slats in front are sufficiently far apart to allow the birds to put their necks out. The floor is made of slats so that the droppings fall to the ground, and thus keep the crates clean. The crates are elevated above the ground, are usually made with three compartments and hold from 12 to 15 chickens. In front of each crate is a V-shaped trough suspended by hooks. This is on a level with the floor, and the chickens put their heads through the slats and feed from the trough. The elevation of the crates is three feet." Ground oats with a small percentage of barley, in the proportion of one sack of barley to eight sacks of oats, moistened with sour milk, is mostly used for the fattening feed. The fattening is continued two weeks, and then the chickens are finished by the cramming process. This Sussex method, without the cramming, is the one generally followed, with some minor changes, in Canada and the United States.

How To Do It

Mr. Hare thus outlines the method to be followed in crate feeding:

First, dust the birds thoroughly to make sure there are no lice on their bodies. Lousy cockerels do not fatten well.

The crates used should be 18 inches high, 16 inches wide and divided into two compartments two feet long. Such a compartment will hold four chickens weighing from three to four pounds each or six smaller ones. The front is covered with slats three-eighths by seven-eighths and spaced two inches apart. Each compartment may have either a sliding door in front or a hinged door on top. The floor is covered with slats one-half by seven-eighths inch running lengthwise. The slat nearest the back of the crate is placed two and one-quarter inches from it, and the other slats are one and one-half inch apart. They should be in a quiet place where there is plenty of fresh air. Out of doors in summer is very satisfactory.

The first week in the crate the chickens are fed sparingly. They are given water in the troughs as soon as they are put in, and then are fed nothing for 12 hours. A quantity of the mash is then spread along the trough, and as soon as this is eaten a little more, but not nearly as much as they would like. Feed the mash thin like porridge, so it will drop but not run from a spoon, three times a day. Give fresh water daily and grit twice during the week.

The second week is the flesh maker. The chickens are given mash liberally twice a day, as nearly 12 hours apart as is practicable. Twenty minutes after feeding begins the troughs are cleaned and turned over.

The third week is the finishing period. For extra fine finish melt one pound of mutton tallow for each 50 chickens, and while hot, stir it into the dry meal. The resulting paste is then mixed with the mash. The tallow increases the globules of fat through the flesh and produces greater juiciness. This week, as in the second, the birds are fed all they will eat twice a day.

Tested Rations

The following rations from successful feeding trials have been found to make profitable gains. They are divided into two classes: rations in which the ground meal is wet with sour milk or buttermilk and rations in which water is used. If white flesh is desired no yellow corn is used in the mash. If yellow flesh is wished yellow corn is always part of the mash.

For producing white flesh we may use 100 pounds ground oats moistened with 150 pounds milk; 40 pounds ground oats, 20 pounds ground barley, 40 pounds low grade flour or middlings and 150 pounds milk; or 50 pounds ground oats, 40 pounds ground white corn, ten pounds low grade flour or middlings and 150 pounds milk.

For yellow flesh, use 40 pounds ground yellow corn, 40 pounds ground oats, 20 pounds flour or middlings and 150 pounds milk; or 50 pounds ground yellow corn, 40 pounds ground oats or

barley, ten pounds flour or middlings and 150 pounds milk.

For producing white flesh without milk, use 50 pounds ground oats, 30 pounds flour or middlings, 20 pounds ground corn, ten pounds alfalfa, six pounds blood meal. For yellow flesh, use 40 pounds ground yellow corn, 30 pounds ground oats, 30 pounds flour or middlings, ten pounds alfalfa meal, six pounds blood meal.

Instead of mixing the meat meal in the mash, it may be fed separately at an additional meal, and another meal of greens or raw vegetables given. This, with the two meals of mash, would make four meals daily.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

By Max Kortum

Santa Cruz: For the month ending July 16, the 337 contesting hens laid 5,694 eggs, or an average of 16.8 per hen. R. C. Gibson of Newhall won the title for the month with a production of 211 eggs for his pen. D. B. Wallis of Petaluma is still leading the contest with a total production for his pen of 1,563, while his hen number 16 crossed the 200 egg mark during this month and now has a total of 209 eggs for the period of 243 days. The molt is gradually beginning to make inroads in the flock and from now on each week will show less hens laying. The average for the flock up to date is 126.2 eggs per hen, or about 52 per cent production for the full eight months.

The board of directors of the California Farm Bureau Egg Laying Contest have received the support of the chamber of commerce and business men of Santa Cruz, who have pledged \$10,000 to carry out the plans of giving to California its first permanent International Egg Laying Contest. This year's work has been limited only to the state, but the new contest plant, as planned, will have a capacity for 1,200 hens and will be open to entries from every state.

Leading Pens to Date

White Leghorns: Wallis, 1,563 eggs; Rose, 1,497; Enterprise, 1,495; Gibson, 1,473; Bellows, 1,454; Peck, 1,425; Gibson, 1,408; Wood, 1,383; Neef, 1,383; Amsbaugh, 1,373; Barker, 1,361; Wilson, 1,359.

Leading Individuals to Date

White Leghorns: Wallis, 209 eggs; Walls, 186; Peck, 181; Barker, 181; Webb, 180; Rose, 178; Enterprise, 178; Enterprise, 178; Gibson, 178; Neef, 177; Pasquale, 177; Gibson, 176.

Alternate hens: Pasquale, 196; Gibson, 182.

Average food consumption per hen for month: Mash, 3.53 pounds; grain, 3.20 pounds; green feed, 4.4 pounds.

For the past week ending with July 24 the hens laid 1,260 eggs, or an average percentage of 53.5.

High Pens Week

Barker, 48 eggs; Gibson, 48; Gibson, 48; Bellows, 47; Neef, 47; Stalling, 47; Wood, 46; Schlink, 45; Clark, 44; Peck, 43; Enterprise, 43.

STORAGE EGGS

There is no reason why storage eggs should not be as wholesome and appetizing as any other eggs, but they are not—often, at least, they are not. The Literary Digest has been asking why this is the case and quotes from a writer on foods and markets, and here is a part of the discussion it develops:

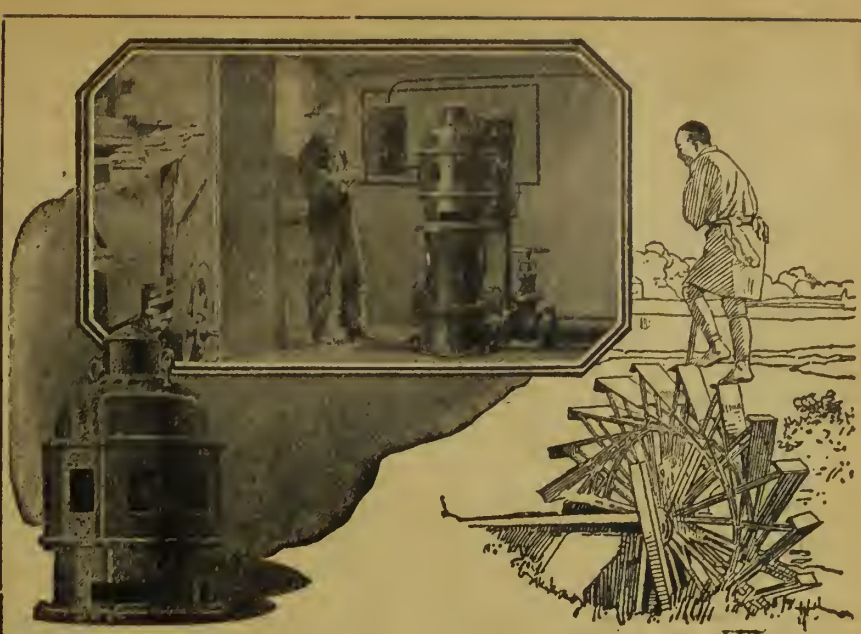
"What we want is an edible egg, free from the seeds of decay and untainted by the absorption of rank flavors. All this an eight months storage egg may be, if properly handled; whereas a 'new laid' egg that has passed 24 hours in insanitary conditions, hot, moist and dirty, may embody all the objectionable features hinted at above.

"The food which the hen eats sometimes affects the flavor of the eggs; it also affects the color of the yolk, which takes on a deeper yellow tint when the hen has eaten an unusual quantity of grass or other green food. Because the hens are in better physical condition during the spring, the eggs laid at that time are apt to have a firmer interior structure and keep better than those laid later in the year. A new laid egg may be small or dirty or thin shelled, but these faults are to be laid at the door of the farmer who disregards breed, feed and clean laying quarters for his hens.

"Because of the readiness with which eggs spoil, the term 'fresh' has become synonymous with the idea of desirable quality. Contrary to the popular notion, however, the actual age of an egg is relatively of much less importance than are a number of other factors which affect its quality. No egg which has been held for even a short time is quite as good, of course, as one which is freshly laid. But an egg 48 hours old that has lain in a wheat shock during a warm July rain or has been gathered by the farmer's wife when it was wet and dirty and then kept in a warm kitchen would probably be swarming with bacteria and be unfit for food, while another egg kept for eight months in a first class cold storage room would be entirely edible and of fairly good quality. The promptness with which an egg reaches the consumer after it has been laid is no guaranty of its quality unless it has been handled properly while in transit.

"Since all the ills connected with moisture, heat or objectionable odors may develop in an egg within a very short period if its environment is unfavorable, it follows that the mere time which has elapsed between the laying of the egg and its arrival with the consumer is not an adequate or proper test to be used as the sole determinant of what constitutes a truly 'fresh' egg. The only real test is the interior quality, and this cannot be determined with certainty until the egg is broken. Temperature, however, is the most important factor affecting this interior quality, and, unless its other surroundings have been unusual, the egg which has been under low and favorable temperature throughout its career will have deteriorated but slightly and will remain a good usable egg for a very considerable period.

"Much of the bad reputation which storage eggs have gained is ill founded. The mere fact that an egg has been held several months in storage does not mean that it has deteriorated to any great extent, for its quality at certain times of the year is actually apt to be better than that of the average 'fresh' egg arriving on the market. The unpleasant flavor usually acquired by a cold storage egg may or may not be sufficient to injure its use for most forms of cooking, depending on the conditions under which it has been stored. Lastly, an egg which has not been in storage over seven months is not apt to have acquired a sufficient flavor to be objectionable nor to have deteriorated enough to affect its wholesomeness or edible qualities."



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Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. L. W. Clark, 615 Main Street, Petaluma, California.

Baby Chicks from my carefully selected purebred flock of S. C. White Leghorns. August, September and October delivery at \$15.00 per 100 chicks. Am booking orders now for next spring. Write for particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

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Sunshine Farm Jerseys—No females for sale. Bulls from high testing cows for sale. E. E. Greenough, Merced.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

SEEDS AND PLANTS

Reliable Cabbage Seeds—I grow them. You want them. Let's get together. Write me for special trial offer on just what you will need. Isaac F. Tillinghast, 40 Podel Street, Santa Rosa, California.

Order Now Nursery Stock for fall planting. Sudan, Rhodes Grass, Honey Sorghum and Cane seeds. Box 501, Fowler, California.

Pumpkin Seed—Mixed Pumpkin Seed, good germination. 25¢ per lb. Aurora Seed Mill, Stockton, California.

WANTED

Agricultural College Graduate, twenty years' practical experience, married, wants position as working foreman or superintendent on dairy ranch. Good schools, good living conditions essential. Holstein cows A. R. O. work preferred. Address "L," care California Cultivator, Los Angeles.

Wanted—Position as manager of fruit ranch, 25 years' experience in growing citrus and deciduous fruit. Address: 219 Cypress, Santa Ana, California.

Wanted—Myrobalan (cherry, plum), any quantity. Pay high price. Address: K. Umeda, Gilroy, California.

Wanted—Immediately, experienced bud-ders and tiers. Address or phone Kirkman Nurseries, Fresno.

Wanted to hear from owner of land for sale. O. K. Hawley, Baldwin, Wisconsin.

LIVE STOCK

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Next sale at Ranch, Wednesday, August 11, 1920. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

Carruthers Farms—Live Oak, California. Shorthorn cattle and Berkshire swine of quality and select breeding.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

For Sale—Team of grade Percheron work horses. For particulars write H. G. Ranch, Solvang, California.

BERKSHIRES

ANCHORAGE FARM BERKSHIRES

Orland, California.

BRED GILTS FOR SALE.

Your Choice of 10 Crack Boar Pigs from our early litters. We want you to see these pigs, their litter mates, and their dams. Have just shipped a choice boar pig to Kansas. These young boars are of correct blood lines, right in type, and well developed. Represent the close-up blood of Laurel's Champion, Star Leader, Ames Rival 18th and other excellent families. Write or come to the ranch. Yours for better Berkshires. Geo. A. Stingle, Lark Meadow Ranch, El Monte, California.

The Only Herd of English Berkshires in the west. Bigger, better, stronger litters. More pounds of meat for less feed. Weanling pig \$35. Satisfaction guaranteed or money refunded at once.

SANDERCOCK LAND COMPANY
703 Market St., San Francisco
IN CHARGE OF NATOMAS LAND SALES.

Grape Wild Farm—Berkshires, Guernseys. Big Type Berkshire Boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion. A. B. Humphrey, Prop., Escalon, California.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calaveras, Martinez, California.

Real Good Berkshires, cholera immune. Frank B. Anderson, Box 724, Sacramento, California.

DUROC-JERSEYS

DUROC-JERSEY SWINE

JUMBO SENSATION

Our new herd boar is one of the largest boars in the world for his age. We have some real buys in pure breeds.

WHITLEY

TU-TOCK-A-NU-LA RANCH
Ventura Boulevard and Hazeltine Ave.
Mrs. R. E. Whitley, Mgr.
Phone 160-J Van Nuys, Calif.

Borge's Big Duroc Jersey Hogs—Herd headed by Durocino Golden Model 3rd. A few choice females of desirable breeding for sale at very low figures. I am offering for sale the tried boar Dos Palos Chief (an Orion Cherry King Jr. boar). Here is an opportunity to secure a tried sire at a very low figure. Satisfaction assured. Write at once. Jack Borge, Dos Palos, California.

Fifty Head of Durocs, bred sows, gilts and pigs. Three boars ready for service. Five March boars, grandsons of Mary Jane Pathfinder. One sow of Orion Cherry Pathfinder out of Lambs Model Lady. Five boars out of Cherry Queen Pathfinder and sired by Lords Orion Cherry King. For information and prices write Elmer Lamb, Ceres, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

Bargains in Bred Sows and Gilts—Pathfinder and Great Wonder. I Am blood. Derryfield Farm, Capitol National Bank Bldg., Sacramento, California.

L. & M. Ranch, Van Nuys—Buy our young boars by such sires as May Rose King, Winsor's Giant Orion, Orion's King Gano, Top Sensation 3rd.

SWEETWATER DUROCS

The most popular herd in the West. Winsor Ranch, Bonita, San Diego Co. Address: R. K. Walker.

Durocs—Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. J. L. Stevenson, Van Nuys, California.

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. Hollow Hill Farm. B. W. Shaper, Manager, Colton.

December and March Duroc boars; Pathfinder breeding. Sterling Smith, Route 1, San Diego, California.

First Prize Duroc Boar, 2 gilts, one brood sow. Harold Love, Riverbank, California.

For the Best in Durocs write June Acres Stock Farm, Davis, California.

POLAND-CHINAS

I Would Sell My topnotcher boar by Kings Big Bone Leader; two bred sows by Long Smooth Jumbo; also spring pigs—everything big type stuff. H. Christianson, Arlington. Write me.

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. J. H. Crawshaw, Hanford, California.

The Big-Type Polands direct from Iowa. The best blood lines in the game by the Iowa man. J. L. Dunlap, Pomona, California.

The Grand Champion El Profitto heads our big type Poland Chinas. Letters promptly answered. Viola L. Renwick, Santa Barbara, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. Ferguson & McKaig, Orland, California.

HOGS

My Victor Herd—Headed by Billiken Chester Whites. For quality and big litters. E. E. Fulton, Box 7, Fair Oaks, California.

GOVERNMENT LAND

300,000,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book THE HOMESSEEKER which tells you where this land is and how to acquire it, or send \$2.00 for book direct. The Homeseeker, Dept. M, 336 S. Broadway, Los Angeles, California.

FARM LANDS FOR SALE

LAND FOR SALE

"Take no one's advice" until you have spent a day or two on our ranch, if you are looking for the ideal, self-supporting home of 5, 10 or 20 acres. One night's rest among the pines will do you a world of good, and to see the fruit and vegetables growing will convince you as to what can be done. If an ideal mountain climate, electricity, pure water for drinking and irrigation, good roads assured and rich land cheap, will appeal, your visit will be like nine out of ten others who have made it permanent. For further information address:

PARADISE RANCHITA
Paradise, California.

Orange and Grapefruit Grove, 18 Acres \$3350, Easy Terms. Settlement of estate is your opportunity to become owner of big productive grove and fine farm home at remarkably low price, near city, all conveniences, dark loam soil adapted all crop lines profitably this section; 250 heavily bearing orange trees, 150 grapefruit, also tangerines, etc. 4-room bungalow, veranda, bath, other buildings; quick action necessary, about 1-3 cash, balance easy terms. Detail page 45 Strouts New Catalog Orange Groves and Other Tropical Farms. Copy free. **STROUT FARM AGENCY**, 503 E. J. Wright-Callender Bldg., Los Angeles, California.

Wanted—To hear from party who want to buy one of the finest 10 acre home in the San Joaquin Valley. Located just one block from city limits of Turlock. Land all leveled, stripped checked and A-1 stand new alfalfa. Fine modern 10 room bungalow, barn, garage, tankhouse, 12,000 gallon tank, hen house, and plenty of family orchard. This is certainly an ideal home and must be seen to be appreciated. Other business only reason for selling—will give good terms to right party but will not consider any trade. Price \$18,000.00. Address: Owner, P. O. Box 643, Turlock, California.

240 Acres Near Parkfield, Monterey County, within 5 miles of oil rig no drilling; land on the same anticline ridge. All fenced, no other improvements; 125 acres of good farming land. Price \$25 per acre, 1-3 cash, balance easy terms. Can lease to oil Co. for cash rental of \$1.00 per acre per year for 5 years by giving oil Co. option to buy \$100.00 per acre. Many other stock and grain ranches to sell. Can get you leases from 10 acres up. C. P. Gould, 1032 Junipero Avenue, Long Beach, California.

For Sale—\$5,000. Five acres of sand loam especially adapted for truck gardening near Porterville one-half mile was Good six room house, bath, toilet, screen porch, large refrigerator and cellar. Property fenced all land under irrigation. Chicken runs and corral pumping plant, plenty of good water fruit trees and some alfalfa and garage. Chickens and turkeys can be bought with the place. Can be made an ideal home and is a good buy. Address Owner, P. O. Office Box 207, Porterville, California.

For Sale—300 Acre Farm situated San Barbara County. All implements necessary for beans and hay, including threshing, Fordson tractor and plow, six delivery rake. Large house and bar chicken house, bunk house, implement shed and well equipped shop. Soft water modern system. Apple trees, nuts at various fruits. Owner must sell, ill health. Easy terms. Address Alfred L. Friess, Lompoc, California.

For Sale—\$20,000—40 acres of A No. land in Tulare, 2 miles from Tulare. Under cultivation, 15 acres in Noko, 25 acres in alfalfa, 13 acres in Thompson Seedless, cuttings planted this year. Barn, house, teams, one single plow, one double, cultivator, and one single buggy; everything goes with the place. Also 16 tons of alfalfa hay. Ditch right through the place. Address owner, M. Haddish, Tulare, California.

FOR SALE AND EXCHANGE
10-20-40-60 and 80 acre ranches, rich level, plenty water; proven grain (Thompson seedless), fig and alfalfa land. Price right, easy terms.

FOR SALE
Some of the finest dairies in the state. Chas. McNeely, Alpaugh, California.

For Sale—3 miles from Visalia, 10 or 20 acres of best soil, improved. House 5 rooms. A snap for a party looking for an ideal place. Address owner, J. Aulman, Visalia, California.

For Sale—10 acres of raw river bottom land in Kings County, all under irrigation, well on place. Will sell or trade. Address: Owner, O. C. Hamilton, R. D. Box 104, Kingsburg, California.

If Interested in securing farm lands have same for sale write me. John Mee, St. Helena, California.

For Sale—Ranches, Homes, Acres, for list. Wilson Bros., Santa Cruz, California.

Irrigated Alfalfa Ranches for sale. Other crops, plenty water. C. I. Graves, Fallon, Nevada.

Best Cheapest orchard berry and ran- lands. John F. Beckett, Arroyo Grande, California.

Irrigated Farms—Five acres and up. Alex. Murdock, Brentwood, California.

MACHINERY

For Sale—Utilitor Tractor used ten hours will sell 10% less cost \$468.00. Can be seen and demonstrated. 313 Euclid Avenue, Santa Monica. T. A. Moyn, Ph 21694.

For Sale—Used ranch material, windmill pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for "Special Bargain" price list. Demmitt Upstairs, 120 N. Main, Los Angeles.

For Sale—Case Tractor in good condition or will trade for Dodge car, equal value. F. Raftery, Owensmouth, California.

For Sale—Caledonian Bean Cutter a small thresher. Bargain. Chas. You Whittier, California. Phone 7691.

For Sale—Half-way milking machine, Laval separator. James Mills Orchard Corporation, Hamilton City, California.

RABBITS
For Sale—New Zealand and Flemish Giant does and bucks, young stock. Call 2212 Nicholson Avenue, Monterey Park, California. Phone Alhambra 656-W.
New Zealand Reds—Young stock. Reasonable prices. Josephine Spencer, 1915 11st St. Sacramento.

PIGEONS
For Sale—White King Pigeons. Old mated breeding birds, \$3 a pair; unmated birds \$2 a pair. Paradise Valley Poultry Ranch, National City, California.

GOATS
For Sale Cheap—Small bunch of goats, including nine does and five kids and two good bucks. Inquire of or write to O. C. Knox, Thermal, California.

T-I-Z-I-T SPRAY

Kills Black and Citricola Scale and controls Red Spider. Put it on your trees now—it works all summer. Thoroughly tried, tested and proven.

It makes larger crops, better fruit, healthier trees.

Put up in 200 pound barrels at 25 cents per pound, f. o. b. Los Angeles.

T-I-Z-I-T Spray Mfg. Co.
Telephone 12089. 1344 Willow St.
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JOHNSTON TURBINE PUMPS for irrigation

Produce water at a minimum cost. Ask for Folder No. 8 and name of nearest distributor.

AMERICAN WELL & PROSPECTING CO., MFGS.
407 E. 3rd St., Los Angeles

25 Cords a Day

Easily Sawn By One Man. Easy to move from cut to cut. Make big profits cutting wood. Cheap and easy to operate.

OTTAWA LOG SAW

Does 10 men's work at one-tenth the cost. Makes work easy. Engine can also be used for running pumps and other machinery. Saw blade easily removed. Write for our low price. Cash or Easy Payments.



Ottawa Mfg. Co.
27 Wood St.
Ottawa, Kansas.

30 Day Trial
10-Year Guarantee

DEHYDRATION OF FRUITS
(Continued from Page 149.)

sun dried article. The cost for fuel was light. About 4.3 gallons of stove oil per hour at eight cents per gallon was used; or this represents a cost of about \$1.38 per green ton of fruit. The drying ratio for the entire quantity of fruit dried was about 5% : 1. Sun drying gave slightly lower yields of dried product than did dehydration, but this was evidently due to lower water content of the sun dried fruit. The very low fuel cost in our test was obtained by recirculation of most of the air used in drying and by use of an efficient heating system. Too low humidity of the air used in drying caused case hardening and slow drying.

Recently the writer has seen apricots evaporated on the Teluca ranch near Lankershim without sulphuring. This fruit was dead ripe and of good flavor when cut. The dried fruit possessed a brown skin and golden brown to yellow flesh. The flavor was most excellent and much superior to that of the ordinary sulphured dried apricot. While not so attractive in appearance, the product is superior in eating quality to the sulphured fruit. We may, therefore, expect it to attain great popularity.

Prunes

Our best results of last season clearly demonstrated that prunes carefully evaporated possessed a flavor superior to that of the sun dried article. This fruit was dried in about 18 hours in the evaporator at the university farm and in from eight to 14 hours in our small laboratory size evaporator. Dehydrated (evaporated) prunes have a light colored flesh and a fresh fruit flavor. They "come back" rapidly and well in water and are easily cooked. Further data are needed on the relative costs of sun drying and evaporation of prunes. We believe labor costs are less with the evaporator, but this saving may be counterbalanced by the cost of fuel. An evaporator and trays cost no more than a sufficient amount of sun drying trays to care for the same amount of fruit.

Vacuum Dehydration

There has recently been revived a keen interest in the drying of fruits under a vacuum which permits very rapid drying at temperatures so low that the fruit is uninjured by heat and closely resembles the fresh fruit in flavor. The method had not been attempted upon a commercial scale until very recently. A \$200,000 corporation has recently been formed at Lodi to erect and operate at that place a vacuum fruit dehydrator of larger capacity than anything of a similar sort heretofore attempted. The machine is continuous. Fresh fruit enters the top of the machine continuously and the dried product issues from the bottom. We shall await with much interest the future development of this proposed plant.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Fence Not on Line

In 1914 A filed on homestead and had a survey of his lands made. In 1915 B filed homestead on adjoining land and built line fence upon part thereof. In 1918 B built line fence on the remainder of the adjoining boundary line, at which time he discovered the corner was six feet over on his line. Can this now be corrected by having proper survey made?—Subscriber, Palmdale.

It would seem that the building of the line fences was merely a matter of mistake in respect to the location thereof, in which there has been no agreement and no sufficient acquiescence to indicate an agreement, and therefore the location of the fence could undoubtedly be corrected by a proper survey.

Wages of Cook

Husband and wife take work on farm for certain wages. The agreement is distinct that wife shall cook only for the employer when there are no extra men. Employer finds that he can only hire men where cooking is done for them. For about 40 days the wife cooks for about five laborers. Is she entitled to wages for her work? If so, how much? Employer knew that wife expected something.—Subscriber.

The conditions of the employment appear to be clearly stated. The wife has done additional labor, for which there was a mutual expectation that she would be paid. It is, therefore, clear that she is entitled to recover the reasonable value of those services on an implied contract. What the reasonable value of such services might be is entirely a question of fact, in

which the prevailing rate of employment for such services in that community would undoubtedly be controlling.

Transferring Property to Wife

Husband and wife, married 30 years, have worked hard and saved a home which is in the name of both husband and wife. Husband is now ill. Will a deed of his interest to the wife be sufficient to transfer the property to the wife? There are children, all married. How may the furniture and other personal property best be protected?—Subscriber.

A deed of the interest of the husband to the wife, duly executed, acknowledged and delivered would probably be sufficient. The far better way, however, would be to acknowledge and file a joint declaration of homestead. In order to afford absolute security there should also be a will, drawn in favor of the wife, wherein the children are mentioned.

MOTOR TRUCKS FOR SHORT HAUL

All sections, instead of particular sections, must adopt motor transportation for short hauls before its greatest benefits will be felt by the country at large, according to the recently expressed opinion of many transportation men. Even the sections which have motor transportation do not feel its benefit to the full extent, the experts are pointing out, so long as many sections are without it.

An excellent illustration of this point of view is found in California this summer, as E. Farr, director of the Firestone ship by truck bureau of Akron told highway transportation men at a recent conference.

"California," he said, "has a fairly good system of motor truck routes. Right now probably 60 per cent of all local intercity freight in the southern part of the state is shipped by trucks. Yet it is estimated that approximately 60 per cent of the perishables grown in the great Imperial Valley will rot in the fields because of lack of transportation.

"The trucks can transport to meet local demand, but when this demand has been met 90 per cent of the crops of the valley remain. This 90 per cent generally is exported to other states. This exportation involves long hauls. It requires 11,000 freight cars. This year the growers are unable to get anything like that number. Instead of the required 500 to 700 cars daily they are getting only 200.

"Now if a majority of the production areas of the United States had motor truck facilities equaling those of Southern California, that section would not be in this predicament. Instead, freight cars that are today tied up all over the country on slow short hauls would be relieved of this duty by motor trucks and assigned to this and other long haul freight carrying, where they are much needed.

"This but illustrates once more our point that transportation needs a new axiom. That axiom should be: To the railroads, the long haul; to the motor trucks, the short haul. It is uneconomical surely to give freight cars, as valuable as they are, a job which can be done better by motor trucks, just as it is uneconomical to give motor trucks the long haul business when that business can without a doubt be done better by the railroads."

LAFAYETTE FARM CENTER ADOPTS FIRE FIGHTING PROJECT

At a meeting of the Lafayette farm center of Contra Costa County, held July 20, at which more than 80 residents of Lafayette and vicinity were present, it was unanimously decided that the section is in dire need of more adequate fire fighting equipment and that steps should be taken to procure this equipment. J. J. Boyer, who was elected director of the center, appointed a committee of five to canvass the territory for subscriptions with which the necessary equipment may be purchased. The committee decided that for \$750 the present equipment can be motorized and additional chemical extinguishers obtained. As Lafayette has suffered from eight fires within the last six weeks, it was anticipated that this project will receive the support of all the residents of Lafayette and adjacent territory.

SULKY PLOWS



We can supply you with many styles of these plows. Write us for catalog before buying. Call and see us when in the City. We are headquarters.

ARNOTT & COMPANY, Inc.
112 S. Los Angeles St. Los Angeles

Prunes and Walnuts

247 acres, 224 acres in English Walnuts and Italian Prunes, fillers. Prunes in good bearing, large crop, crop goes. 20 acres good fir timber, two good houses, barn, large new dryer, full equipment, good road, 7½ miles from Salem, fine location, beautiful view of Willamette Valley. This place is in first class condition and will stand investigation. Price \$240,000.00.

W. H. GRABENHURST & CO.
275 State Street Salem, Oregon

Holstein Bull Calves For Sale Very Reasonable

Sired by Sir Veeman Korndyke Pontiac and out of yearly record cows. Write for prices, photo and pedigree.

BURR FARM

Box 220, Route 2. East 26th and Downey Road, Los Angeles

Hauck's Big Type Poland Chinas

Hauck's Timm Jones at head of herd. Brood sows are daughters and granddaughters of Cantrall's Ideal. Write for our attractive offer of big type gilts bred for September farrowing.

N. Hauck
Alton, Cal.

THE EDWARDS MOTOR



Convertible Power, 1½ to 6 Horse Power; 2 Cylinders; Throttling Governor; Operates on Kerosene or Gasoline; Magneto Equipped. Weight, 275 lbs. 1½ Horse Power on 1 Cylinder, 2 to 6 Horse Power on both Cylinders. Complete circular free. Call and see this motor when in the City.

ARNOTT & COMPANY, Inc.
112 S. Los Angeles St. Los Angeles

DURABILITY - SIMPLICITY -

The Cultivator Patterns



BE SURE TO SEND SIZE

3310. Girls' Dress—Cut in 4 sizes: 6, 8, 10 and 12 years. A 12 year size will require 3½ yards of 24 inch material. Price 10 cents.

3134. Ladies' Dress—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It will require 7½ yard of 38 inch material for a medium size. The width of skirt at lower edge is about 1½ yard. Price 10 cents.

3299. Junior Dress—Cut in 3 sizes: 12, 14 and 16 years. A 14 year size will require 6½ yards of 27 inch material for the dress with tunic, and 4¼ yards without tunic. Price 10 cents.

2750. Ladies' Cover-All Apron—Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42, and Extra large, 44-46 inches bust measure. Size Medium will require 4½ yards of 36 inch material. Price 10 cents.

3301. Girls' Dress—Cut in 4 sizes: 4, 6, 8 and 10 years. An 8 year size will require 3½ yards of 30 inch material. Price 10 cents.

3302-3288. A Neat Costume—Waist 3302 cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3288 cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. A Medium size will require 7½ yards of 27 inch material. The width of skirt at lower edge is about 1½ yard. TWO separate patterns 10 cents FOR EACH pattern.

3308. Girls' Blouse Suit—Cut in 4 sizes: 8, 10, 12 and 14 years. A 12 year size will require 4¾ yards of 36 inch material. Price 10 cents.

3133. Ladies' House Dress—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A medium size will require 5¼ yards of 36 inch material. The width of the dress at its lower edge is about 1½ yard. Price 10 cents.

FALL CATALOGUE READY

Send 15 cents in silver or stamps for our UP TO DATE FALL AND WINTER 1920-1921 CATALOGUE, containing over 500 designs of Ladies', Misses' and Children's Patterns, a CONCISE AND COMPREHENSIVE ARTICLE ON DRESSMAKING, ALSO SOME POINTS FOR THE NEEDLE (illustrating 30 of the various simple stitches), all valuable to the home dressmaker.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

How to Order Patterns
Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very best NEW YORK styles, all patterns ordered are filed in NEW YORK. Therefore, we promise to deliver all patterns ordered within TWO WEEKS; we guarantee safe delivery of all patterns.

PATTERN DEPARTMENT
California Cultivator
Los Angeles

Household Department

WORDS

How I love the mere words, the picturesque and dear words,
Romany and Patteran and Caravan and Chai—
How they lit and sing to me; flame-lit, how they bring to me
Heathered moors and bending skies and gypsy carnival.

The sun-swept and the wild words I dreamed of as a child, words
Like Lariat and Chaparral, Coyote, Pinto, Sage;
How they flung a dare to me of life without a care to me,
How the flying hoof-beats rang across the printed page!

The lantern-lit, the old words, the scarlet and the gold words,
Palfrey, Jerkin, Yeomen, Falcon, Glebe and Glade;
Minstrel, Lance and Tourney—what an age-long journey
Through the posters of the Past, alone and half-afraid.

The wind-blown and the sea words, the lawless and the free words,
Splndrift, Doubloon, Cutlass, Jib, Corsair, Yardarm, Crew;
Whispering wild tales to me, ah, how each unvels to me
Palm-fringed islands rising green against the ocean blue!

The balsam-scented North words that call untamed hearts forth, words
Like Wanigan and Mackinaw, Duffel, Tumpine, Trall;
While the languid South to me turns a lover-mouth to me,
Jasmine-scented, passion-flowered, by the Bayou pale.

Some may live their fair dreams, costly, jeweled, rare dreams;
Some may rove the luring world as free as homing birds;
But still I'll find my all for me, close-waiting at my call for me,
In my printed palaces, bright-tapestried with words!
—By Martha Haskell Clark in Youth's Companion.

A HOUSE FOR RENT

(Continued from last week.)

Across the railroad track which skirted the edge of town stood a row of dilapidated little houses owned by a shrewd business man named Stanard. Ran noticed a sort of stir in front of one of them, and paused near enough to overhear the loud, emphatic tones of a red faced individual who seemed to be directing matters.

"You got to get out, all right!" he was saying to some one within. "The boss has sold this whole block of houses. You knew when you came here that this was likely to happen."

A pale young woman stepped out, a baby in her arms. "But you surely won't turn us out today?" she urged. "My husband is just recovering from an illness and we really haven't a place to go!"

Boy as he was, Ran recognized the terror in her face, and the heroic effort she was making to steady her voice.

"It's like this, lady," Stanard's agent said uncomfortably; "this deal went through yesterday on condition that immediate possession could be given."

"But you owe us some notice!" protested the startled woman.

"Yes," callously, "and you can take it up in the courts later, if you like, but you'll have to move today, all right."

In sick despair the girl came down off the little porch and stepped closer to her informant.

"Can you tell me of any place where I can find shelter?" she asked. "My husband had shell shock overseas, and is just getting well. We have so little money until he can get back to his work"—she paused uncertainly.

Sanders was not a brutal man, but he was required to carry out the orders of a hard master. He cleared his throat. "I'm sorry, lady, but my orders are to get this row cleared out before dark. New parties will be moving in tomorrow. You could get the Associated Charities to help you."

At his answer the slim shoulders straightened. "That will do!" the young woman said. "Come back in an hour or two and we will be gone." Ran's hands tightened convulsively on the handles of his pushcart. He stepped across the narrow road as Sanders took himself off, and called breathlessly to the retreating figure.

"Oh, I say! May I speak to you?" The young woman turned on him a face he had never forgotten. "Haven't I seen you before?" he stammered.

"I'm Jessie Mallard—I mean Mrs. Harvey Douglas," she answered.

"I saw you once when I went over to the academy for a game," Ran said shyly.

A bright flush ran over young Mrs. Douglas' face; "I am the niece of Major Mallard," she said briefly. "I married just before Mr. Douglas went overseas. Uncle Jimmie objected, and I haven't let him know what a hard time we have had. I'll have to, now," she faltered, and two bitter tears fell down her cheeks in spite of herself.

"You come with me," Ran said firmly. "My brother Sam and I have a house fixed up in our back lot. We did it for—for a sort of joke"; he swallowed hard. "You let me put your trunk and things in this cart and take them right over. You can stay till you find something better."

Mrs. Douglas looked from the sleeping baby to the shabby little cottage window through which she could see the thin form of her convalescent husband, sheltered by his slight deafness from knowledge of what was going on without.

"It seems too good to believe," she said simply. But in a very little while it was an actual fact. The things to be moved were pathetically few. The Douglasses had been only a month in the little cottage, and only the barest necessities were theirs.

Matters were explained to young Douglas, the wife putting a brave face on their enforced move. With the convalescent soldier's help, Ran managed to transfer their effects to his house as dusk fell.

Sam sat before the door, in the glow of a student lamp which he had set on the table inside. "It makes it look like a home," he said to himself—"and if anybody passes by—why, there's some one now!"

He gazed eagerly at the dark figures entering the gate leading from the side road, and before he could do more than rise, Ran and his party were upon him.

To say that Sam was bewildered would be putting it mildly.

"Here's a tenant for our house," Ran called out cheerfully, giving Sam a dig in the ribs.

"Yes, yes," stammered the other boy.

"Mr. and Mrs. Douglas and their baby are going to move in. Lift out that little oil stove, Sam. We'll get another lamp presently, Mrs. Douglas; we have several up at the house." He bustled about, showing the various contrivances to the somewhat dazed young couple, and giving Sam a vigorous shake of the head from time to time, to indicate to him that he must await explanations.

But after doing all that was possible to help the new tenants to settle, Sam even doing a bit of marketing for Mrs. Douglas at the nearest store, the two lads tore themselves away, promising to run back after supper with the extra lamp.

"Here!" Sam stopped abruptly when they were out of earshot—"tell me what it means."

Ran stammered out his story. "Why, that Jessie Mallard," he wound up, "was the prettiest girl I ever saw. All the big boys were crazy about her, and her uncle was, too. I heard she had stuck to marrying her soldier chap, though Major Mallard was sore about it and didn't want her to."

"Yes, but what kind of tenants will they make?" demanded Sam impatiently. "They don't look as if they had a cent in the world."

The supper bell tinkled on the back porch, but Ran stood stock still. "I know—Sam, it's hard on you, all right. But I couldn't let them turn her out in the street. I don't care if I never get to Moosehead Camp till I'm ninety."

Sam whistled—"Oh—I see! You mean to let them stay here for nothing." A tense pause. "How about dad and his \$25?"

Ran began to move toward hot rolls and chops. "I figure he can pay a little something. She never got that house over the tracks for nothing, not from those fellows. We'll take what they can spare, so that dad won't be out anything, but until they get better fixed than they are now, I wouldn't any more touch their little bit of money than—than—"

"Snatch the bottle away from the

At Tomato Time The Auto-Wheel Coaster



Another time when the Auto-Wheel Coaster is especially useful, it's a big roomy wagon and will haul two bushels of tomatoes in one load. The

Auto-Wheel Coaster

is strong. It travels over rough roads and bumpy fields without danger. It lasts for years under the hardest kind of usage. The roller-bearings make the hauling easy. You'll hardly know you have such a heavy load.

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Prize Contests

The "Auto-Wheel Spokesman" is a publication for boys and girls, telling all about the Auto-Wheel and the prize contests we hold periodically. Full of interesting topics. We'll give you a FREE six month's subscription to the "Auto-Wheel Spokesman" if you'll send us the names of three coaster dealers, telling us which ones sell the coaster wagon with the name Auto-Wheel on sides.

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every state. Price only \$225 with fodder binder. The only self gathering corn harvester on the market, that is giving universal satisfaction.—Dexter L. Woodward, Sandy Creek, N. Y., writes: "8 years ago I purchased a Corn Harvester. Would not take 4 times the price of the machine if I could not get another one." Clarence F. Hargrave, Spearman, Okla., "Works 5 times better than I expected. Saved \$40 dollars in labor this fall." Roy Apple, Farmerville, Ohio, "I have used a corn shucker, corn binder and 2 rowed machines, but your machine beats them all and takes less time of any machine I have ever used." John F. Haag, Mayfield, Oklahoma, "Your harvester gave good satisfaction while using filling on Rio." K. F. Ruegnitz, Olla, Colo., "Just received a letter from my father saying he received the corn binder and he is cutting corn and cane now. Says it works fine and that I can sell lots of them next year." Write for free catalog showing picture of harvester at work and testimonials. PROCESS MFG. CO., Salina, Kansas

baby!" finished Sam. "You've got to tell dad, though."
(Continued next week.)

HOUSEHOLD QUERIES

Pickling Ripe Olives

Will you please tell me how to put up ripe olives in open jars? Should the last brine be changed after the olives have been in it some time? Would that keep them from getting soft?—Subscriber, Tracy.

Where oaken barrels or jars are used, be very sure that they are absolutely clean. Mrs. Sherman of Fresno gave to the Cultivator years ago directions for pickling olives that can hardly be bettered, and she recommended that barrels be cut in half, filled with lime and water until needed. Then into 12½ gallons of water put 1½ pounds of lye and two pounds salt, filling barrels three-fourths full. Put freshly picked ripe and sound olives into this solution. After 12 hours test olives by cutting through. If yellow stain from lye reaches almost to pit, run off lye and put on fresh water, adding 1½ pounds salt. The water should cover the olives three or four inches. Stir with wooden stick every two or three hours. Change brine every other day. After two days taste, and if bitterness is all out, repeat lye. The use of the salt keeps the olives from getting soft and in a measure sets the color. Let light into the olives when in the brine, but avoid direct sun rays. This also helps to blacken the olives. If olives pucker in the brine, simply run off brine and cover with fresh water for a couple of hours until plumped out again, then put on weaker brine. The olives will keep a reasonable length of time in open vessels if brine is watched and boiled often enough to keep down bacteria. It is better to can them in glass or tin while perfect.

Canning Pimentos and Peppers

Please tell me how to put up ripe pimentos. Can green ones be put up so as to keep green color? Will any sweet pepper do as well as pimentos? I also want to know how the women of Washington state make olive cherries. The Cultivator is a welcome visitor in our home. I have received many useful things from it.—Subscriber, Tracy.

Take fresh, fully ripened pimentos, cut off stem end, take out seeds and stringy portion. Place in cloth bag, immerse in boiling water five minutes to blanch, then plunge immediately into cold water. Pack in small jars, for they spoil quickly when opened and are so rich that one does not use a large quantity at a time. Fill jars with boiling water and sterilize one hour for three successive days or five hours continuous boiling. If preferred use boiling brine of three level table-spoons salt to one gallon water. Add small jelly glass full of lemon juice or vinegar if wished. The green peppers may be put up in same way. The blanching and dipping into cold water helps to keep green color.

Olive cherries we pass up. Can anybody help us out? The Cultivator will gladly pay in subscription credit for such hints published.

Sugar Cucumbers

Here is a recipe for sweet pickles sent in answer to request last week. Clean ripe yellow cucumbers and cut in squares. Boil in weak vinegar until nearly done, then drain. Make a syrup of 2 cups vinegar, 4 cups sugar, 1 tablespoon cinnamon, 1 teaspoon cloves, ½ teaspoon ginger, ½ teaspoon mace, ½ teaspoon alum. Put cucumbers in jars, cook syrup till thick and pour over cucumbers; seal.—Mrs. W. K. Anaheim.

MRS. WILSON'S COOK BOOK

"Mrs. Wilson's Cook Book, by Mrs. Mary A. Wilson. Published by J. B. Lippincott Company, Philadelphia and London. \$2.50 net.

Any cook book is interesting to a housekeeper, but this one is more than that. On looking over its pages you feel that you have been visiting with a practical, whole souled woman who knows herself exactly how to do things and finds her chief pleasure in giving you the full benefit of her knowledge and experience.

"Gone are the days of plenty when the extravagant cook was the best cook. Banish all recipes that call for cups of butter," says Mrs. Wilson in her talk on "Measurements." "You know it only takes a few minutes longer to measure accurately, and then you are able to make that delicious cake without a failure. No failures, no waste. Truly the words, 'trusting to luck,' should be taboo in the efficient woman's kitchen." And she proceeds to give all sorts of practical hints for saving food supplies.

The book opens with clear and very detailed directions for making good bread, good bread of many kinds, all handled in a simple and convincing way that would encourage the untried housekeeper to follow them and give to her family the real thing in the way of the staff of life. Mrs. Wilson tells what kinds of flour to use, utensils necessary, proper temperatures, method of kneading, different handling in summer or winter, and many other practical details. Eight pages are given to these general directions before any specific recipes are given, all eight packed full of practical helps.

The recipes are exceedingly up to date, many being given that were learned from French cooks during the great war. Nor are the good old Southern and New England standbys neglected. Then the book has many recipes for special California foods, California Orange Bread, for instance,

Orange Mincemeat and Lima Bean Croquettes. Then there is Sweet Potato Pone, Bengal Curry of Lamb, Gloucester Cod a la King, Ye Old Tyme Oyster Pie, Italian Polenta, Lancaster County Dried Corn, Chinese Chop Suey, menus (with recipes) for winter days, for summer days, for wedding suppers, country suppers, many other special occasions.

But we can't even give a hint at all the interesting things packed between the covers of this book—the inside covers, by the way, are printed with tables of measures, cooking calendars, proportions, etc., the easiest possible location for quick reference.

A final word as to the author. She is now at the head of Mrs. Wilson's Cooking School in Philadelphia, and the publishers add this. "Mrs. Wilson literally 'cooked to the queen's taste' as she served five years at Buckingham Palace in the service of Queen Victoria. She also served as chef in many of the famous resorts and cities in Europe."—R. P. D.

EXPLAINED

"Please hurry," said the wife impatiently to her husband. "Have you never buttoned a dress behind before?"

"No," replied her husband, also impatiently. "You never had a dress that buttoned before behind."

You Take the Picture We Do the Rest

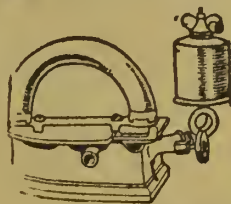


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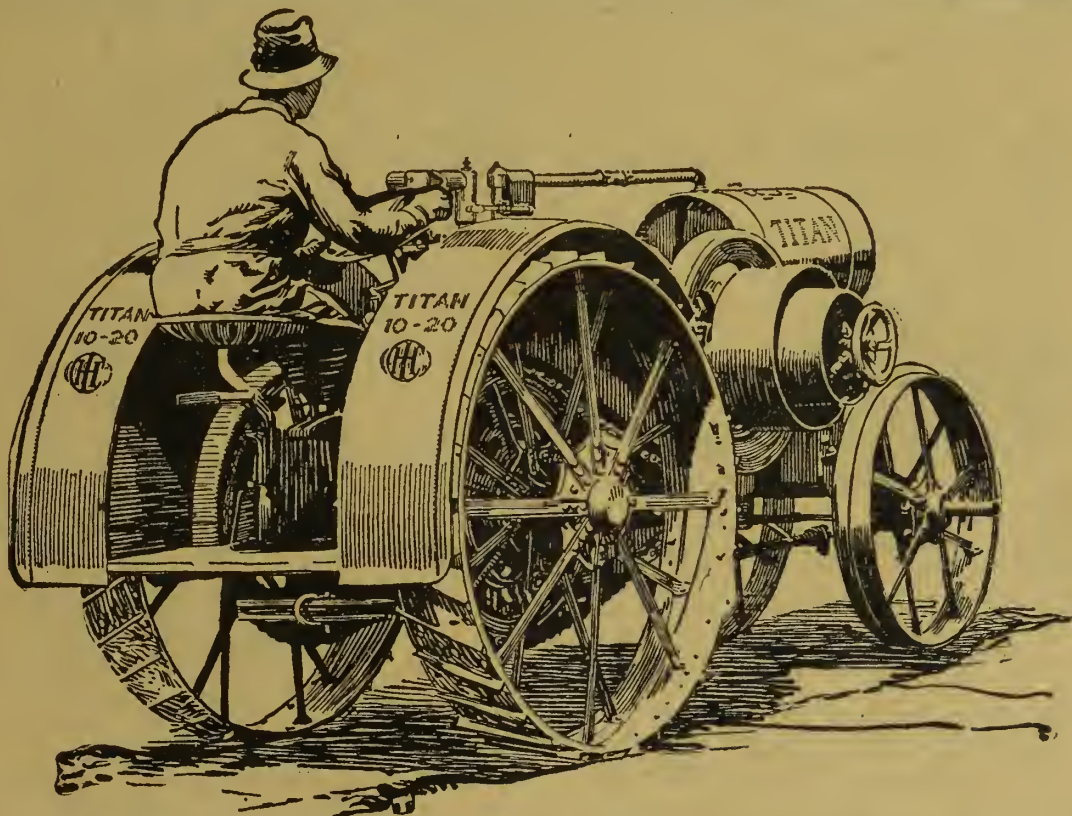
Ironing Comfort

You know you ought to help the good wife to keep cool these hot days by purchasing the Imperial Self-Heating Iron. No running back and forth from the hot stove with the Imperial, because it makes its own gas from ordinary gasoline. Absolutely safe and guaranteed.

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RHUBARB---Wagner's Giant Plant Now August is a Good Month to Plant

Growers who planted last July and August have already harvested over 15 tons per acre netting \$1000 eleven months from planting. For further information, write J. B. Wagner, Rhubarb Specialist, 1550 East Villa St., Pasadena, Cal.



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MECHANICAL power is stepping swiftly into the breach that has been formed by restless, dissatisfied labor. This is true in the city and it is true on the farm.

Today Titan 10-20 Tractors are the labor-saving power of the hour on the farms of America. Everywhere, reaching to the farthestmost boundaries of agriculture, you will hear the steady chug-chug of these tireless toilers. They are displacing men and horses and getting more work per day from available farm labor. Soon summer fallowing will be under way in many sections of

the country, and there you will find Titan 10-20 Kerosene Tractors working faithfully from sun-up to sun-down, undisturbed by heat or flies, turning the hard-baked ground in the interests of bumper crops.

New Titans are scarce just now, due to the unprecedented demand, but perhaps your nearby International dealer is so fortunate as to have one or two still available. This will result in good fortune for you—if you act at once. Titan and the International dealer are good to know in a time like the present.

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Yuma Valley alfalfa seed is noted for its quality.

The crop this year is very short, less than one-half normal.

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We Guarantee Identity of Every Sack. Grower's Initials on Each Sack. Fields Personally Inspected by J. W. Longstreth.

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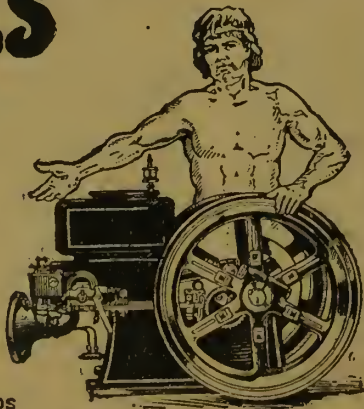
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SAN FRANCISCO — TAFT — LOS ANGELES

Los Angeles Markets

Los Angeles, August 4, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 62 cents.

Dairy Exchange prices last week on extras:

July	28	29	30	31	Aug. 2	3
'20	62	62	62	62	62	62

CHEESE

Brokers' prices:
Camomila mats, 28@30 per lb.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 52 per dozen; case count Prod. Exch. closing price 50 per dozen; pullets, Produce Exchange closing price 46 per dozen; pewee pullets, 31.

Dairy Exchange prices last week on extras:

July	28	29	30	31	Aug. 2	3
'20	52	52	52	52	52	52

POULTRY

Price to producers: Hens, lt., 20; colored, 32; broilers, 29@32; roasters, 38; old roosters, 14; fryers, 32; ducks, old, 17; ducklings, Pekin, 3½ up, 20; others, 17; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47; pigeons, doz., 1.00.

Belgian hares, live, 13@15; old, 9.

LIVESTOCK

Los Angeles, Aug. 3.—Welghed and delivered out cars without food or water: Hogs (hard-grain, 125 to 175 lbs., 15.50; 175 to 225 lbs., 16.50).

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, August 3, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market weak. Local: Early and White Rose, fancy No. 1's, mostly 1.25@1.50; No. 2's, 50@75c per lug; 100 lbs. sacked No. 1's, 2.25@2.50. Stocktons, mostly 3.75.

Carrots: Supplies liberal. Market unsettled and weak. Sales to jobbers—New stock, Locals: White Rose, sacked, 2.00@2.50. Stocktons: British Queens and Burbanks, 3.00@3.25.

Onions: New Stock—Reds 1.40, Yellows 1.50, per 100 lbs. sacked.

Garlic: lb., 20@25.

VEGETABLES

These are the actual prices obtained August 3 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 7@9; Limas, 5@7.

Beets: Doz., 35@45; sk., 1.50@1.75.

Cabbage: Supplies moderate, market strong, movement good, wide range in quality. Best mostly 3½ per lb.; per field crate, best 3.00.

Carrots: Doz., 35@45; sk., 1.50@1.75.

Celery: Doz. bunches, 1.25@1.40.

Corn: Local, 60@1.00 per box.

Cucumbers: Market dull: local, best, lug, 40@60.

Egg Plant: Best, lb., 10@12.

Lettuce: Local, cr., best, 1.00@1.50.

Peas: Northern, lb., 9@12.

Peppers: Bells and Chills, lb., 6@8.

Spinach: Doz., 20@30; lb., 2.

Squash: Local summer, large lugs, 60@85; Italian, lug, 80@1.00.

Tomatoes: Local lugs, 50@75.

Turnips: Per dozen, 30@40; per sack, 1.00@1.25.

DECIDUOUS FRUITS

These are the actual prices obtained August 3 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: New Stock—5@8 per lb., according to size and quality. Boxes, Gravensteins, 3.00@3.50, according to size.

Crabapples, supplies moderate, lug 1.15@1.25.

Apricots: Local, lb., 7@9.

Bananas: lb., 10½@11.

Berries: Blackberries—Supplies light, per crate, mostly 4.75@5.25. Raspberries—Supplies moderate, Local, 4.50@5.00 per crate. Strawberries—Local, supplies moderate, market steady, per crate, 4.75@5.00.

Cantaloupes and Melons: Cantaloupes—Market weak, supplies liberal, quality and condition wide range. Local: Tiptop, pink meats, quality and condition good, crates, 1.25@1.50. Casabas: Lb., mostly 2.

Honey Dew, standard, 1.50@2.00. Water-melons, lb., 2@3.

Cherries: Supplies light, market firm; various varieties, best, mostly 18@24 per lb.

Grapes: Malagas, lb., 12@14; Thompson Seedless, 7@9.

Peaches: Local, best, lug, 1.50@2.00; Northern, lb., 4@6.

Plums: Lb., 7@10.

Pears: Bartlett's, best, lb., 10@11; poorer, 7@9.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.25@2.75; special packed brands, 3.25@3.50.

Lemons: Market weak, wide range in prices. Local stock: Packed, 3.50@4.00; loose, 1.25@1.75; lug, mostly 75.

Oranges: Supplies liberal, market firm. Valencia: packed special brands, 12¢'s, 5.50@6.00; 150's and 176's 5.75@6.25. Local packed, second grade, 2.50@3.75. Packing house culls, 75@1.25 per lug.

HONEY

U. S. Bureau of Markets, July 16:

Moderate wire inquiry. Demand moderate, movement limited, market dull. Little change in prices. Carloads f. o. b. usual terms: White Orange and White sage, 19@20; Light Amber Sage, 17½@18½; Light Amber Alfalfa, 16½@17½;

Hawaiian Light Amber, 15½.

Hamilton & Menderson, July 7, in Western Honey Bee: Honey market disorganized, through the reduction in price at New York by a Los Angeles marketing association. Prices to producers: White orange and sage, 18½@19; light amber sage, 16@17; light amber alfalfa, 16. Comb honey—So little offered as not to make a market. Beeswax, 40.

A. I. Root Co., July 5, Western Honey Bee: The honey market is still quiet. The demands of Eastern markets are below normal. Prices paid to producers: Comb honey, approximately 6.50 per case of 24 sections. Very little offered. Extracted—Amber, 15; light amber, 16@17; water-white orange, 19. Beeswax—38 cash, 40 in trade.

GRAIN AND FEEDS

Grain Exch. prices bid August 3:

Corn: Yellow, No. 2, bulk, 3.05; No. 1 White, 3.00.

Oats: Cal. feed, 2.60.

Barley: Carlots, on track, 2.45.

Kafir: Eastern No. 2, 2.71½; No. 3, 2.62½.

Milo: No. 3, carlots, 2.50.

Wheat: Mixed feed, Utah-Idaho, 56.50.

HAY

Alfalfa Growers of California report under date of August 1, 1920:

The upward tendency of the market for alfalfa hay, as far as can be judged by the Alfalfa Growers of California, the amounts of hay bought by dealers for winter storage and by dairymen for their season's requirements average on the whole lighter than usual at this time of the year.

In anticipation of a probable shortage of baling wire, the association some time ago bought as much of it as it could afford in excess of the orders then placed with it by members. When the shortage did develop we were therefore still able to supply our members, but now our surplus stock is completely exhausted. We will promptly notify you when we are able to obtain a supply again, but the prospect is not encouraging at present.

As a result of this shortage, baling outfits have already been laid off in some localities and it looks as if others will have to follow suit, as there is no relief in sight for an indefinite time, according to the representatives of the eastern wire mills. There were approximately 1,500 tons of hay of all kinds received on the tracks week ending July 31, 350 tons left over as against 2,000 tons received on the tracks week ending July 24.

Choice Alfalfa 40.00

No. 1 Dairy Alfalfa 34.00

Standard Dairy 32.00

Stock Hay 27.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats 23.00@25.00

Barley 16.00@22.00

Alfalfa 24.00@30.00

Barley straw 8.00@10.00

San Francisco Markets

San Francisco, Aug. 2, 1920.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras 60½

Dairy Exch. prices Extras this week and year ago:

July	27	28	29	30	31	Aug. 2
'20	60½	59½	59	59	59	60½
'19	59	59	59	58½	59	59½

Receipts week ending Aug. 2, 3,121 cwt.

CHEESE

Dairy Exchange quotations:

Jack, full cream 23@26

Cal. Y. A. 36

Ore. Trips 30½

Cal. Flats 27@31

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 58½

Extra Pullets 50½

Undersized 39½

Dairy Exch. prices this week and year ago:

July	27	28	29	30	31	Aug. 2
'20	61	59½	58	57	58½	58½
'19	57½	59	59½	59½	60	60

Receipts week ending August 2, 362,140

POULTRY

Wholesale prices are:

Leghorns, 22@24; large, 35@36; roosters, young, 45@50; old, 18@20; broilers, 34@38; fryers, 33@40; turkeys, 37@40.

Ducks: Indian Runner, 21@23; Pekin, 21@23. Squabs, 55@60; pigeons, doz., 2.35@2.50.

Belgian hares, live, 17@20; Jack rabbits, dozen, 1.50@3.50.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 9½@10; do, 1,200 to 1,400 lbs., 9@9½; do, second quality, 7@8; thin, 6@7. Bulls and stags: Good, 4@5; fair, 3@3½.

Cows and heifers: No. 1, 8@8½; second quality, 6@7; common to thin, 2@4.

Calves: Lightweight, 10½@11½; medium, 9@10; heavy, 10@10½.

Lambs: Milk, 8½@9; yearlings, 8@9.

Sheep: Wethers, 7@7½; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 16; 150 to 225 lbs., 16½; 225 to 300 lbs., 16; 300 to 400 lbs., 15.

bulls, 4½@5.

Virden Packing Company quotes prices on livestock, weighed and delivered out cars at its plant, South San Francisco, as follows:

Cattle: Good steers, 1,000 to 1,100 lbs., 10@10½; top steers, 1,100 to 1,200 lbs., 9@9½; top steers, 1,200 lbs. and over, market price; good cows and heifers, 8@8½; No. 2 cows and heifers, 6½@7; good ished, 100 to 150 lbs., 15½; 150 to 225 lbs., 16½; 225 to 300 lbs., 15½; over 300 lbs., 16½.

14%; under 100 lbs., 14%.
Calves: Light, 13@14.
Hogs: Top packer, hard and well finished, 100 to 150 lbs., 16; 150 to 225 lbs., 17; 225 to 300 lbs., 16; over 300 lbs., 14%; under 100 lbs., 14%.
Ewes: Full wool, 6½@7.
Wethers: Full wool, 7½@8.
Yearlings: 9@9½.
Milk Lambs: 10½@11.

POTATOES AND ONIONS
Potatoes: River, cwt., 3.00@4.00; fy., 4.25@4.50; Sweet, No. 1, 15@20.
Onions: New reds, 75@1.00; yellows, 1.00@1.50 cr.; green onions, 1.25@1.50.
Garlic, new, 10@12½.

VEGETABLES
Wholesale selling price:
Beans: Lb., String, 3@6; Wax, 2@5.
Cucumbers: Bay, 75@1.25.
Corn: Sack, 2.50@3.50.
Eggplant: Livingston, 1.50@1.75.
Okra: bx, 1.00@1.25.
Peppers: Bells, lug, 50@75; Chili, lug, 50@75.
Peas: Lb., green, 6@10.
Squash, Summer: Lug, 50@60.
Tomatoes: No. 1, 1.50@2.25; No. 2, 60@80.

FRESH FRUITS
Apples: Red Astrachan, 1.50@2.00 for 4-tier; 1.00@1.25 for 4½-tier; unwrapped, 75@1.00; Gravenstein, unwrapped, 1.75@2.00; wrapped, 4-tier, 2.75@3.00; crab, 1.25@2.00; Red June, 3.00@6.00.
Apricots: Imperial Valley, Los Angeles lugs, 4@8 per lb.
Bananas: lb., 8@10.
Berries: Strawberries, large, 90@1.10; small, 65@90. Loganberries, red, 50@65 per drawer. Raspberries, red, 50@65 per drawer. Blackberries, 50@65 per drawer.
Cherries: Black, lb., 10@18, according to quality; Royal Anne, lb., 10@18.
Cantaloupes and Melons: Turlock ponies, 2.50@3.25; standard, 3.75@4.00; flats, 1.25@1.50 per box; Honey Dew, per crate, 1.00@1.50; casabas, nominal. Watermelons, Imperial Valley, 2½@3.
Plgs: 1.00@1.50 for white and Brunswick per box of one layer; two layer, 2.25.
Grapes: Malaga, 3.00@3.25 per crate; Dletties, 4.00@4.50; Seedless, 3.00@3.50.
Nectarines: Cr., 2.00@2.25; basket, 1.50@2.00.
Peaches: Boxes, 1.25@1.50.
Pears: Madeline or Dearborn, lugs, 2.00@2.50; small, 1.00@1.25; Bartlett, No. 1, 3.00@3.50; No. 2, 1.00@1.75.
Pineapples: Doz., 3.00@4.25.
Plums: Tragedy, 1.50@1.75 per crate; Santa Rosa, 2.00@2.25; Climax, 1.25@1.50; Burbank, 1.25@1.50.

CITRUS
Box: Lemons, standards, 2.00@5.00; lemonettes, 1.50@2.50; grapefruit, 2.75@4.00; Navel oranges, 5.00@6.50.
BEANS AND PEAS
California Bean Growers' Association, San Francisco, August 2:
At the present writing it is very difficult to state just what the market is, as some of the dealers are quoting ridiculously low, endeavoring to move some of their stock on which they are obliged to liquidate. The offerings for shipment are about as follows:
Pinks 6.40@ 6.65
Large Whites 6.00@ 6.25
Small Whites 5.75@ 5.90
Blackeyes 8.00@ 8.25
Bayos 10.00@10.50
Mexican Reds 8.00@ 8.50
Red Kidneys 14.50@15.00
Cranberries 7.00@ 7.25

HOPS
1919 crop, 85@1.00 per lb. Prices to growers for 1920 crop, 65@80 per lb.
GRAIN
Wheat: 3.75@3.85.
Oats: Red feed, 2.60@2.70.
Corn: California Yellow, 3.40@3.50 per cental; California milo malze, 3.40@3.50.
Barley: No. 1 feed, 2.40@2.45.

HAY
Alfalfa Growers of California under date of August 1:
Most of the dealers and consumers are still only buying for current consumption but otherwise are as yet holding off. Some sales by outside growers in this district, where our membership is still comparatively small, were made this week at several dollars below the prices obtained by the association up to that time for all the hay our member growers had listed.
No. 1 Dairy Alfalfa.....32.00
Standard Dairy29.00
Stock Hay27.00
Under date of July 30, A. W. Scott Co. says:
Receipts past week 3,568 tons. General trade extremely light and very little transfers of hay are reported in any of the larger producing centers.
We quote today wholesale prices in carload lots (old crop) as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions.)
Wheat hay, fancy.....28.00@30.00
Wheat hay (light 5 wire bales) 26.00@28.00
Tame Oat hay26.00@28.00
Wild Oat hay20.00@22.00
Barley hay20.00@23.00
Alfalfa hay first cutting20.00@25.00
Alfalfa hay second cutting.....24.00@28.00
Alfalfa Growers of California quote prices for Northern Districts:
No. 1 dairy alfalfa33.00
Standard dairy32.00
Stock hay28.00

Citrus Markets
Los Angeles, August 4, 1920.
Valencias are still in strong demand. It is estimated that not more than 4,000 cars remain in California for shipment. F. o. b. quotations are ranging between five and six dollars; nine dollar prices for extra fine stock in auction markets not uncommon.
The lemon market is slightly better. The weather has been warmer and foreign has dropped slightly, there being at this time only about 155,000 boxes due to arrive within 30 days.

Shipments
Shipments to date from Southern California since Nov. 1, 1919: Oranges, 20,237 cars; lemons, 6,671; total, 32,908. To same date last season: Oranges, 29,338; lemons, 8,417; total, 37,755. From Central California to date this season: Oranges, 5,375; lemons, 288; total, 5,663. To same date last season: Oranges, 3,714; lemons, 251; total, 3,965. Northern California this season: Oranges, 261; lemons, 23; total, 284. To same date last season: Oranges, 244; lemons, 2, total, 246.

AT THE AUCTIONS
July 27
New York: 16 or., 3 mixed. Val. 2.80-7.80, grapefruit 1.70-5.70.
Boston: 6 or., 6 lem. Val. 4.05-7.05, grapefruit 3.05-3.40, lem. 90-1.85.
Pittsburg: 4 or., 2 lem. Val. 2.65-7.20, lem. 1.50-2.75.
July 28
New York: 15 or., 3 grapefruit, 3 mixed, 1 lem. Val. 3.75@9.00, grapefruit 2.50@5.05, lem. 1.10@2.00.
Boston: 9 or., 6 lem. Val. 3.85-6.50, lem. 55-1.90.
Philadelphia: 4 or., 4 lem. Val. 2.75-7.25, lem. 75-2.60.
St. Louis: 2 or., 1 lem. Val. 4.60-5.85, lem. 2.05.
August 3
New York: 16 or., 1 grapefruit, 3 mixed. Val. 3.40-9.25, grapefruit 2.60-5.05, lem. 4.15.
Boston: 7 or. and grapefruit. Val. 4.56-6.35, grapefruit 2.80-3.70.

WEATHER REPORT
San Francisco, California, July 31, 1920.

Stations	Wk.	Season.	Norm.	Max.	Min.
Eureka	.00	.12	.11	60	52
Red Bluff	.00	.01	.00	102	62
Sacramento	.00	.00	.00	100	52
San Francisco	.00	.00	.01	72	51
San Jose	.00	.00	.00	88	48
Fresno	.00	.00	.00	102	62
San Luis Obispo	.00	.00	.01	90	48
Los Angeles	.00	.00	.00	90	60
San Diego	.00	.00	.00	78	63

ATTENTION



KILLEFER EFFICIENCY

Beet growers should anticipate their wants in Beet harvesting tools and repairs for same, as much as possible, this year.

The steel mills are not able to supply the usual quantities of high grade steel used in the manufacture of our beet tools and repair parts. We have on hand a limited number of Two Row and Four Row Automatic Lifting Beet Plows for tractors and the Single Row Riding Plows for teams. We also carry a stock of extra Shares, Shins and Points. If your dealer does not stock these extra parts, write us and we can fill your order by express, freight or parcel post. Write for catalog No. 2.

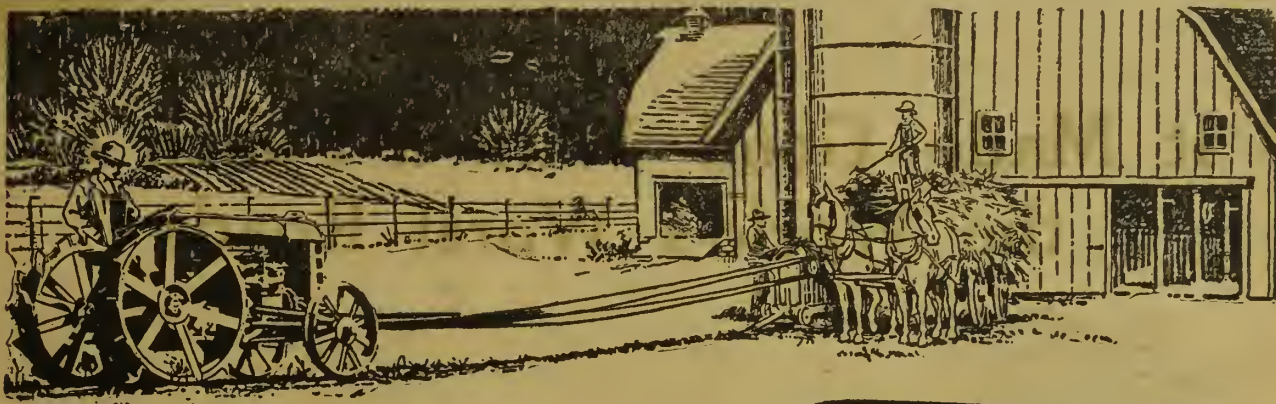
The Killefer Manufacturing Co.

2209-21 Santa Fe Ave. Los Angeles, Cal.
Box 156, Arcade Station P.O.

Seeds

Aggeler & Musser Seed Co.

1620 So. Spring Street
— MARKET BRANCH:
767 So. Central Ave.
Los Angeles Cal.



More Profits with Silage- Use a Fordson Tractor and a Little Giant Belt

Not only does the making of ensilage furnish a supply of exceptionally good, economical feed for live stock but it clears the corn field for an early start the next season. It's another step toward more efficient, more profitable farming.

And when you belt your Fordson to your ensilage cutter, be sure it's a Little Giant tractor belt that transmits the power. Little Giant belts are specially designed for exclusive use with the Fordson and combine the features that enable the tractor to develop a steady, even flow of unfailing power through its belt pulley.

The Little Giant grips the pulley like the clutch of a giant hand. There is no slippage and wastage of power even when the ensilage cutter is overloaded. The Little Giant is an endless belt so there is no pulling out of belt ends and no delays for relacing. The Little Giant is a special treated, canvas belt and is unaffected by the moisture, heat and exposure a belt must meet in farm work. An exclusive feature is the extra stitching which resists the effects of edge wear and greatly lengthens the life of the belt.

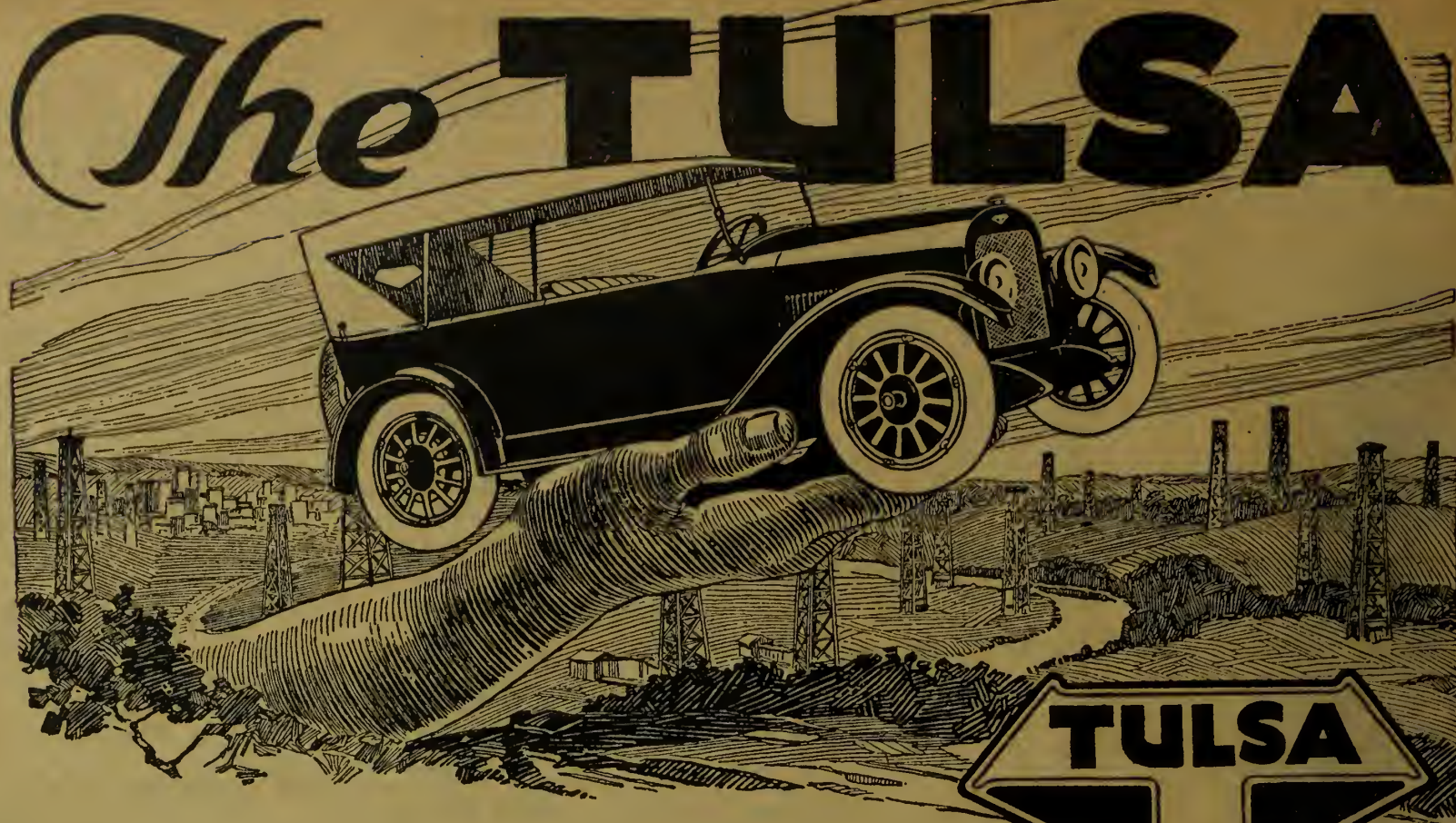
You can buy a Little Giant from your local Fordson dealer—save the expense and delay of sending away for a belt. Ask your Fordson dealer to show you a Little Giant belt, or write us direct for complete information.

United States Rubber Company Mechanical Goods Division

Distributed by

WM. L. HUGHSON CO., San Francisco, Calif.





It Made Good With a Punch on the World's Worst Roads

Unusual conditions forced a group of wealthy oil men to build a car for their own needs, one that would withstand the world's worst roads—the oil field roads of the mid-continent oil fields. They called it the TULSA, after the city that is the hub of their activities.

These men knew from experience what they needed in a car to stand the terrific punishment inflicted on a car in the oil fields. They secured one of America's foremost automotive engineers, who built the TULSA under their direction.

For more than two years the TULSA has been subjected to the most gruelling road tests. Day in and day out, it went down into the very depths of mud, mire, gumbo, ruts and sand—over roads utterly impossible to describe. Minor shortcomings were immediately remedied, until today the TULSA is known to be right.

The public was quick to find out about the unusual performance of the TULSA, and asked for the privilege of using this car of astounding achievements. So what was the outgrowth of these oil men's needs now becomes a gift to others in the TULSA Touring and Roadster models.

For the Smooth California Boulevards, The TULSA Has Absolutely No Fear

With such a remarkable performance record in the rugged oil fields, certainly the TULSA can be relied on for any service you might desire over the beautiful California roads.

Its lightness combined with its durability not only means extra mileage on tires and fuel, but a big saving in general upkeep and repairs. It also assures the driver of perfect ease in operation and control.

Repeated road tests show an average of 18 miles per gallon on gasoline—8,000 to 10,000 miles on tires—450 miles per gallon on oil. With the increasing cost of tires and fuel shortage, these are important items to consider.

The Touring and Roadster models are built on the same chassis as the famous Oil Field Special—the only difference is found in their smart lines, appointments, and unusual riding comfort.

Five Passenger Touring Car—Roadster
Oil Field Special—\$1550 f.o.b. Factory

PACIFIC STATES AUTOMOTIVE CO., San Francisco
State Distributors 585 Mission Street

GUARANTEE MOTOR CO., Los Angeles
Southern California Distributors 1136 Figueroa Street

Tulsa Auto Manufacturing Co.

Tulsa, Oklahoma

SPECIFICATIONS

HERSCHELL - SPILL-MAN motor, 4-cyl. L-head, 3½-in. bore by 5-in. stroke.

CONNECTICUT ignition.

DYNETO starting-lighting.

EXIDE storage battery.

SALISBURY axles.

JAMESTOWN cellular radiator.

ZENITH carburetor.

10-INCH dry disc clutch.

MUNCIE transmission.

STEWART speedometer and vacuum feed.

FIRESTONE tires, 33x4.

NEVERLEAK top and curtains.

FRAME, extra heavy pressed steel, channel section.

STANDARD universal joints.

C. A. S. steering gear.

HOTCHKISS drive.

Some Territory Yet Available

The TULSA has all the attractive features your prospects demand—beauty, refinements, comfort, economy in operation, service and moderate price. Let us tell you about the solid foundation on which this organization is built—the big advertising drive—the exceptional dealer proposition. Wire or write today!

Catalog on Request

CALIFORNIA CULTIVATOR

and **LIVESTOCK** and **DAIRY JOURNAL**

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

August 14, 1920

No. 7

Practical Instruction in Citriculture

AFTER a lapse of three years during the war, the division of citriculture of the University of California again conducted its summer traveling course. The purpose of this traveling course is to give the students an opportunity to study the practical side of agriculture by getting on the ranch, making observation and talking with the actual growers. Most of the time is devoted to citrus and semi-tropical fruits, but other phases of agriculture are not neglected. Ranches of all types are visited and notable failures, as well as successes, are pointed out. Such other factors as land values, labor conditions, water supply, soil types, etc., are also studied. The great value of this training is that with such knowledge of the agricultural possibilities of the state the student leaving the university is better fitted to take advantage of the opportunities offered whatever line he may follow. The class this year numbered 17, five women and 12 men. They covered 2,300 miles by automobiles, beginning at Berkeley May 6 and ending in Pasadena June 16. The route led from Berkeley into the Sacramento Valley, up the east side and down the west side, through the San Joaquin and over the Tehachapi into Ventura, Los Angeles, Orange, Riverside and San Bernar-

In the Cultivator of June 26 we gave illustrations and merest reference to the trip or traveling school participated in by a score of members of the citriculture class of the University of California. This class had been under instruction of Dr. J. E. Coit and his assistant J. C. Johnston, and the practical or final step in the instruction was made possible through the arrangement of an automobile trip covering some 2,000 miles. These trips were begun nearly a dozen years ago but during the war were discontinued. The Cultivator camera was brought to bear on the class in one of Southern California's orchards and the members were requested to give to Cultivator readers their impressions, or rather to answer this question, "What is the one biggest lesson learned during this trip?" Most of the members of the class have responded and their answers are given below, the first, or introductory, paragraph being given by Mr. Johnston.

dino Counties, including a most interesting trip into the Coachella Valley.

The trip this year was a very successful one, due chiefly to the hearty cooperation of the growers with whom we came in contact, and I want to take this opportunity to express the sincere appreciation of the class and of those connected with the class.

Edith H. Phillips, Berkeley

The accompanying photograph shows what made the greatest impression, what taught me the biggest lesson of our whole trip, and that is that employers are taking more interest in the living conditions of their employees than ever before. This picture shows some very substantial and extremely attractive houses for employees that are under construction at the Limoneira Ranch near Santa Paula. The owners are not stopping with the houses, but are planting lawns and flowers. This was not the only place where there was similar activity, but because it was the first, it made the greatest impression.

John D. Lyons, Altadena

It was interesting as we went over the state to see the different methods of pruning the same tree under like conditions. There are more distinct methods of pruning the olive, for instance, than you can count on one hand and many are widely different, even in principle. It might be thought that from such a trip as ours we

always cover crops. That, personally, is the most poignant lesson of the 1920 summer traveling course in citriculture. As a student and a grower, I went on "Citriculture 91" with several problems in mind. One was the advisability of the continuation of the practice of cover cropping. Not necessarily was it the orchards that had had cover crops that pointed out the lesson. We saw groves in which cultivation was getting more difficult as the years progressed. On the other hand, we saw groves which not so many years previous had been in an almost unworkable condition, brought to an almost ideal tieth. The owners did not claim that cover crops alone were responsible for the victory, but



The Woman Thinks First of Comfort for the Human

This gives Miss Phillips' idea of the most important lesson of the trip through the orchards of California. Employees' houses at Limoneira Ranch, showing how provision for the comfort of the employee and his family makes for greater contentment and more efficient labor.

might be able to say that a certain method was the best, but the equality of the results is surprising. One man's trees do not look like his neighbor's, but they each get a crop, and while each method seems to have its advantages, it is practically impossible to say that one is better than the other. All deciduous seem to be much the same, but one method seems to be a little better, at least with young trees.

With citrus it is quite different, as there seem to be one or two similar systems that make a much better tree than the others, at least from the production standpoint, and a great many that we do not approve of.

Barbara Adele Engelhardt, Lindsay

Cover crops, more cover crops, and

they were given the major portion of the credit. Not depreciating the immense value of barnyard manure and commercial fertilizers of the bone meal and tankage type, I feel confident that a cover crop, properly handled, will benefit practically any orchard.

Marjorie Melvin, Oakland

The spirit of cooperation and the great extent to which the average farmer applies scientific knowledge are to me the outstanding cultural lessons of our trip. Everywhere we went, from one end of the state to the other the farmers had a spirit of

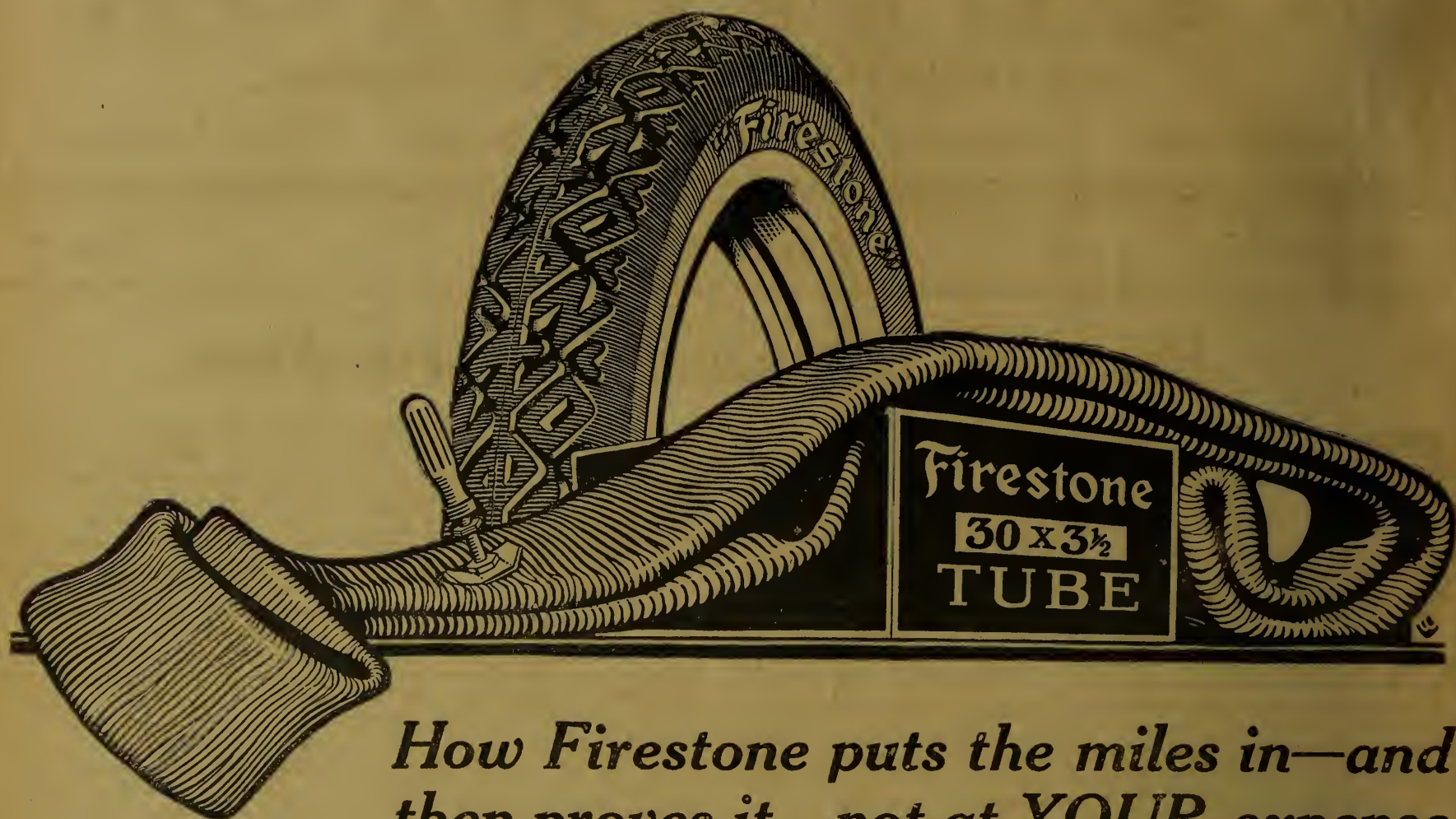
(Continued on Page 183.)



Class Day in the Field

Citriculture class of the University of California in the R. M. Teague citrus nurseries. This is the entire class which made the trip excepting Lal Singh of India. The three gentlemen at the extreme left of the picture and the fourth from the right were not members of the class. The names of those in the picture from left to right are: Lieutenant James Stewart of the R. M. Teague Nurseries, San Dimas, formerly ordnance lieutenant with overseas forces; Captain C. H. F. Woolley, Cape Province, South Africa; R. M. Teague, San Dimas; J. C. Johnston, Berkeley; Wesley Flemming, Orange Cove; Edith H. Phillips, Berkeley; Mrs. Fredrick Ellcott, Chester, England; Raymond Giston, Orange; Mrs. J. C. Johnston; R. M. Hale, Placentia; Marjorie Melvin, Oakland; Edgar Boal, National City; H. R. Schlapp, Australia; Barbara Adele Engelhardt, Oakland; John H. Irish, Berkeley; J. D. Lyon, Altadena; W. L. Johnson, Lindsay; W. T. Preston, San Dimas; W. H. Wright, Glendora; E. G. Schlapp, Australia; Robert Justa, Argentine.

A big-scale road test on 3,200 tubes



How Firestone puts the miles in—and then proves it—not at YOUR expense

No other tubes in the world are road tested on so big a scale as Firestones. The Yellow Cab Company of Chicago uses Firestone Tubes exclusively on its 800 taxicabs. The service of these tubes is checked constantly—improvements and developments are arrived at.

By close watching of a large number of tubes in service—not confined to isolated instances—the conclusions are accurate and definite.

Firestone puts the best in materials into tubes by establishing purchasing experts at Singapore, center of the world's rubber market. Firestone puts the best in workmanship into tubes by organizing the crack

manufacturing organization of the industry on a profit-sharing basis.

And then subjects the finished product to this big-scale road test—in order to get you more for your tube money and most miles out of your tires.

Firestone Tubes resist heat—which everyone knows is the tubes' worst enemy. Their laminated construction, ply on ply of thin rubber sheets laid crosswise and perfectly vulcanized, gives the stoutest tube wall. Their larger sectional size means less stretch to fill the casing. Ask your dealer for Firestone Tubes. They cost no more than the ordinary kind.

*30x3½ Red, \$4.50; Gray, \$3.75
Other sizes in proportion*

Firestone

California Cultivator

Vol. LV, No. 7

Los Angeles, August 14, 1920

One Dollar Yearly

All Ready for a Better State Fair

PRELIMINARY reports from the office of Chas. W. Paine, secretary California state fair, indicate that the 1920 show will mark a new step in the agricultural development of this state. Saying each year that the current show will be larger than in any former year has long since lost its significance. It is to be expected that the state fair in any rapidly developing state, particularly California, will register increased entries each year. But to say that the forthcoming fair

will be "better" than any former fair can be taken to mean much. A successful fair is not measured by mere bigness; rather is it measured by the degree to which it represents the resources of the community it seeks to serve, and in the manner in which those resources are presented in order to serve to educate and inspire fair visitors to adopt more efficient methods. The directors of the California state fair seem to have caught the correct conception of what a state fair should be. At least there has

been a marked improvement during the past few years and the approaching fair will incorporate many new departures, all directed toward public education. Of course, the usual amusement features will be given a large place, for it has been demonstrated many times that the public wants entertainment along with instruction.

Last week Secretary Paine was asked what would be the big outstanding feature and he replied: "There will not be any. You see, this year we are attempting to make every de-

partment as strong as possible and I judge we have succeeded pretty well when I can't honestly point to any one feature as being outstanding. I believe the 1920 fair is by all odds the best balanced show we have ever staged." The word "balance" seems to express the idea. There is evidence of balance throughout the various departments.

A striking feature will consist of the county exhibits. The directors have made a special effort to induce

(Continued on Page 198.)

Raisin Company Still Doing Business

A FEW years ago raisins were selling at a cent, or possibly two cents, per pound. That is, they were occasionally and occasionally they were being made into hog feed. Many a raisin grower can certify to having eaten exceptionally fine raisin fed pork. The federal government had no concern in the prices which were then prevailing nor the disaster nor tragedy which it meant for many California homes.

The existence of the raisin industry became precarious. From a food production standpoint there was little concern as to perpetuation of the business, but self preservation demanded a getting together of the raisin producers, and self preservation or absolute necessity seems to be an essential in the organizing of a cooperative marketing association. In this case the incentive was sufficient and in their desperation, even when confronted with the fact that failure had been the result of former efforts, the growers finally agreed to hang together. They hung.

It is a long story and familiar to all. The success created a situation which called for federal action. At least, it called for it in the mind of Attorney General Palmer, who appealed to the federal trade commission to investigate this organization which had saved the homes of its members. The commission investigated. Raisin growers and officials of the association were called to Washington. This was months ago, and the investigation has been almost continuous. At least, the racking strain on the nerves of those who are responsible for the success of the association has been continuous. Thousands of pages of manuscript have been required to contain the evidence and the findings of the commission.

The final report has now been made. At first reading the producers were dumbfounded, for it appeared that the ruling practically read the organization out of existence. More careful reading has resulted in a far more hopeful attitude. Wiley M. Giffen, president and manager, and Attorney Sunderland, who handled the defense of the company in Washington, both make hopeful reports. Mr. Giffen's statement was made before the full text of the commission's report was received. He says, however, that most careful reading of the report in

no way materially changes his first conclusions. Here is Mr. Giffen's report:

By Wiley M. Giffen

The statement in daily papers to the effect that the federal trade commission had found the Associated Raisin Company guilty of violating the anti-trust laws has cast a gloom over the community that we believe is out of all proportion to the actual findings in the case. It is true that a superficial reading of the report listens badly, but on a careful reading it becomes evident that it is not really very serious. It was our intention to make no further statement until we had received the full report, but the interest and anxiety are so great that we are now going to give you our interpretations of the findings based on the reports as obtained by the newspapers, with the understanding, of course, that this interpretation may have to be changed when the full report is at hand.

In a general way the recommendations consist of three groups. The first group the dispatches claim is but mild criticism of our practices, and is as follows:

1. The commission finds fault with the smallness of the differential between loose and seeded goods.
2. With our refusal to pack private brands.
3. With the length of the life of the contracts to purchase from the growers.
4. With the clause providing that these contracts run with the land.

We think these things are all of vital importance to the organization, and do not want to give them up, but as the commission expressly states, they have not found these acts to be unfair methods of competition, we take it for granted that the criticism, if any, was so slight that we do not need to consider it further.

The second group of recommendations is:

1. The elimination of capital stock and the substitution thereof, if necessary, of a non-profit sharing basis of providing financial resources.
2. The elimination of profit to the corporation or to its stockholders as profit on the operations of the corporation.
3. The restriction of membership or beneficial interest in the corpora-

tion to those whose interests are identical, that is, to actual growers of raisin grapes.

These recommendations are made to apply only in case we claim exemption from prosecution under the Clayton act, and, as we frankly stated to the commission, we did not claim this exemption, but consider ourselves amenable to the Sherman anti-trust law. This is still our position, making these recommendations entirely beside the point as far as the present consideration of the case is concerned. The Clayton act is an amendment to the Sherman anti-trust law, which holds immune from prosecutions labor organizations and farmers cooperative organizations without a capital stock, and while it is barely possible we could reorganize according to the suggestions made by the commission, so as to come within this exemption, we feel so confident that we are not at the present time violating the Sherman Anti-trust law that we prefer to take our chances under the law, so that we can also pass this group of recommendations without a serious consideration.

The third group of recommendations is those that, according to the commission, will bring us within the provisions of the Sherman Anti-trust law, and is as follows:

First: Cancellation of all contracts fixing selling price on the condition of exclusive dealing.

Second: Separation of plants purchased or leased from competitors so far as may be necessary to insure freedom of competition.

Third: That we refrain from buying raisins for cash.

Fourth: That we do not further curtail the production.

Fifth: Abandonment of the plan of selling firm at opening price.

Sixth: Abandonment of guaranteeing our price against our own decline.

Seventh: Annulment of the California Packing Corporation contract.

Eight: As an alternative plan—dissolution.

We are not quite clear as to the meaning of the first two of these recommendations, but feel that it must apply to the first year of our life, when we were working with a large number of packers and had leases on their houses and selling contracts. If this is the correct interpretation of these

clauses there can be no further complaint along this line, as we have long since ceased to have these leases and selling contracts.

The third recommendation that we cease buying for cash is also agreeable to us, as we have not bought a single pound of raisins under this plan since the second year we were in business. We not only considered it a probable violation of the law, but a very bad policy to be doing both a paternal and commercial business under the same roof.

The fourth recommendation that we discontinue curtailing the production is also agreeable to us, and as a matter of fact was never practiced to any extent. It is true that the first and second years we distilled a lot of poor raisins and paid the growers bonuses for putting their second crop and Feherzagoes into the wineries instead of making raisins of them. At that time we were struggling for our very existence, but have now found a better way and are advertising the surplus into consumption, also a recommendation that was complied with five years before it was made.

The fifth recommendation we have already complied with as we had notified the trade by circular letter two months ago that we would not again sell firm at opening price.

The sixth recommendation, against the guaranteeing of our own price, we have no objection to, as we stated to the commission during the hearing that we would not make this guarantee if in their judgment it was objectionable.

The seventh recommendation, which is the annulment of the California Packing Corporation contract, is the only difficult one. As we have before stated, we do not believe at this time that this contract is of value to us and would, if we were only considering ourselves, be very glad to comply with the recommendations of the commission, but this contract was entered into in good faith at a time when we believed we were in need of the help of the California Packing Corporation in the marketing of the crop, and we do not feel now that we have grown stronger and do not longer need their help that we have a right to take advantage of the present situation in an attempt to set aside this

(Continued on Page 182.)

Agricultural News Notes of the Pacific Coast

Northern California

Chico and Oroville in Butte County are talking county division.

Wage scale of Sacramento Valley canneries, \$4.60 per eight hour day.

Corning fruit drying yards are busy with nearly 100 cutters on the peach trays.

California is now shipping close up to 1,000 cars fresh deciduous fruits weekly.

Petaluma farm bureau is planning an egg laying contest to start on November 1.

Eden Township, Alameda County, Farm Products Show begins on Thursday of this week.

San Francisco potato prices took serious slump and best grade stock now rarely reaches \$3.

Director Hecke announces fifty-third Convention of Fruit Growers will be held November 9-11.

Sacramento County farm bureau will have charge of Farm Bureau Day at the state fair September 11.

Junior agricultural clubs of Eldorado County are discussing holding an agricultural fair October 13-16.

Glenn County farm bureau is maintaining well equipped lumber yards at Willows, Orland and other centers.

Sonoma County fair announces it will have Friar Rock, a "quarter million dollar Sonoma horse," on exhibit.

Eldorado County farm bureau recently made an all day trip to various ranches in the county having pure bred stock.

Mendocino County farm bureau recently made shipment of eight cars of livestock, one of hogs, two of cattle and five of sheep.

Petaluma is planning for Egg Day, August 21. That district has over \$21,000,000 invested in poultry and produces over 700,000,000 eggs annually.

Colusa County, in conjunction with the state board of forestry, is taking precautions against grain field fires in the Williams and Maxwell sections.

Four thousand Alameda County farmers are expected to attend the Concord farm center barbecue and picnic September 11 in Mitchell Canyon.

Glenn County Swine Growers Association has united with Tehama, Butte and Colusa in the organization of an intercounty swine growers association.

State Leader Crocheron has called a meeting of farm advisers at Berkeley October 18-21, to be followed by Council of Agriculture, October 22.

Sonoma County farm bureau has an active poultry department which has outlined program for many of the meetings to be held during the coming year.

Tehama County farm bureau meetings: Corning, 19; Los Molinos, 23; Liberal, 26; Manton, 27; Bowman, 28; directors' meeting, Red Bluff, 21 at 10:30.

Many of the rice fields give promise of exceptionally early harvest. The early Onsen is heading and water is already being reduced on this particular variety.

Sacramento Valley and the Bay counties which supply fresh milk to San Francisco are greatly reducing the number of dairies, and the city is now receiving some 5,000 gallons less than is usual at this period.

Central California

San Joaquin cotton crop showing excellent condition.

Fresno has shipped its first straight car of Zante currants.

Tulare County's Livestock and Agricultural Show begins today.

Tulare cannery is appealing for more fruit cutters and peelers.

Fresno reports drying peaches as ripening rather later than usual.

Fresno's first car of Thompson Seedless sold at \$4.40 per crate.

Trouble is brewing between Japanese and white laborers in Monterey fish canneries.

Watermelons at Turlock have been selling around \$40 per ton, one day's sales averaging \$43.

It is estimated that California Peach Growers Inc. will handle about 33,000 tons of peaches this year.

The Associated Raisin Company will not fix opening prices this season, but will auction its first grapes.

Fig growers have united with the Peach Growers Association and it is hoped better marketing will result.

Salinas recently observed its Big Week with the usual rodeo roundup and meeting of California cattlemen.

Members of the Stanislaus Pure Bred Pig Club are starting off with enthusiasm in a new pig club contest.

Wine grapes have sold as high as \$100 a ton at Lodi. These same grapes a few years ago commanded only \$5 a ton.

The Kern County chamber of commerce is planning on making a special feature of Kern County cotton at the state fair.

Producers of all crops not perishable are cooperating in every way possible to prevent car shortage causing severe losses.

Prices on prunes, raisins and peaches are expected to be named by the big cooperative associations soon after August 1.

The Oakdale irrigation district is endeavoring to secure permission to issue \$2,000,000 worth of bonds for building reservoir.

The state water commission has revised its ruling which threatened to hold up the building of the Melones reservoir near Oakdale.

Will and Don Peters, members of the Boys Potato Club of Shafter, Kern County, harvested 8,455 pounds of potatoes from half an acre.

The Santa Cruz County farm bureau egg laying contest is hoping to make its influence state wide in the new contest soon to begin.

Fowler, Fresno County, is in the midst of its fruit shipping. Plums, grapes, peaches and Zante currants are among the heaviest shippers.

Kern County Thompson Seedless made up the first carload of grapes sent from the San Joaquin Valley to Chicago. This car left Bakersfield July 24.

Fresno growers of Malaga grapes have been much exercised over report that a carload of inferior grapes from another section was marketed in New York as coming from Fresno.

Cotton planters of Lindsay, Tulare County, have effected a temporary organization to cooperate in growing and marketing their crop. The growers hope to have a gin established in that section.

Southern California

Orange County has 86,000 acres under irrigation.

Ventura County reports biggest ever hay and grain crop.

Nearly all Southern California sugar mills are in operation.

The cannery at Banning is now running full handed on peaches.

Ventura County is moving for a county chamber of commerce.

Orange County reports serious infestation of perennial sow thistle.

Some cotton growers are trying topping of cotton to increase the yield.

El Centro, Imperial County, is organizing a cotton growers association.

Prospects are for a big crop of canning tomatoes in every tomato section.

La Habra citrus packing house employees recently enjoyed a dip in Balboa Bay.

Engineers are at work on surveys for canals under the all-American canal system.

Poultry culling demonstration at the place of L. G. Wiley, Van Nuys, on Sherman Way.

Oxnard sugar factory began slicing August 3. The first car of beets delivered was on July 28.

Gas may be had in quantities as desired, but five to ten cents has been added to price at many stations.

June was generally the coolest the southern part of the state has ever experienced and July the hottest.

It is hoped that a concrete bridge will soon be built over the Santa Ana between Riverside and East Riverside.

Imperial Valley is planting more generally to Pima cotton than any preceding year and finds results satisfactory.

The state school at San Luis Obispo recently lost 200 acres of grain hay because of fires started from locomotive sparks.

The mountains of eastern Ventura County are reported full of deer this season. The forest rangers are enforcing deer laws rigidly.

Riverside dairymen's cow testing association reports biggest production of butter fat by Holstein cow belonging to R. E. Babcock. Her record was 80.8 pounds.

Santa Paula, Ventura County, has five modern well equipped packing houses handling citrus fruits. There are also others handling dried fruits, walnuts, etc.

Navels promise to give one of the biggest crops ever this season. The June drop period has passed and growers feel assured no serious damage can now come.

Fallbrook, San Diego County, farm bureau center recently discussed soil handling and irrigation of citrus orchards, Prof. Valle of the experiment station making address.

Citrus growers of San Diego County will make a trip through Orange County orchards and packing houses under the direction of the San Diego County farm bureau this week.

Cotton growers have been called together by Director Hecke for discussion of cotton boll weevil and pink bollworm. Meeting to be held in Union League building, Los Angeles, August 20.

The Coast and General

New York is now shipping fresh peaches to Liverpool.

Skagit County fair at Burlington, Washington, August 9-14.

Virginia's first shipments of sweet potatoes are being made this week.

Colorado's pear crop will be larger than last year's by at least 500 cars.

Washington growers of cherries are receiving eight and ten cents a pound.

The Yakima Valley, Washington, wool clip aggregates 2,000,000 pounds.

Dates of the Spokane Interstate Fair and Livestock Show, September 6-11.

Oregon prune growers are selling the coming crop at 16 and 16½ for 30-35's.

Canneries at Bellingham, Washington, are now running 24 hours a day on raspberries.

The first cutting of hay in the Yakima Valley of Washington is selling at \$25 average price.

Lightning struck a hay barn near Litchfield, Arizona, last week, destroying \$44,000 worth of hay.

Mesilla Valley, New Mexico, shipped its first car of cantaloupes July 30. It will market this year 1,000 cars of pink meats.

Winlock, Washington, only a small town, reports having received a quarter of a million day old chicks from Petaluma during the past season.

The Arizona Cotton Growers Association held a meeting July 26 at Chandler to discuss the labor situation. A field meeting was held August 3.

Truck farms around Walla Walla, Washington, now show a planting of 900 acres in onions, 200 in rhubarb, 450 in potatoes, 100 in carrots, 200 in cabbage, 400 in asparagus and beets.

One of the experiment stations of the federal department of agriculture in Alaska is located only 75 miles from the Arctic Circle, where the yearly frost free period is about 97 days.

Arizona will not lift the quarantine against Texas cotton seed, as requested by the Texas authorities. The state horticultural commission considers the danger from the pink bollworm too great.

The French government has awarded 19 scholarships to students of American colleges and universities. The scholarships cover payment of all expenses for two years attendance at a French university.

The report of L. M. Harrison, field agent for the bureau of crop estimates in Arizona, states that the crop of cotton, July 25, was 85 per cent of normal. Last year the condition at this same time was 92 per cent of normal.

Representatives of the governor of Sonora, Mexico, have been in the Salt River Valley of Arizona recently to study housing and sanitation for Mexican laborers and to look into the possibilities of cotton growing as practiced in the Salt River Valley.

Some experiments conducted by a citizen of Arizona near Phoenix seem to indicate that the mulberry tree, known as the silk tree, will make a wonderful growth. Another pleasing feature of this discovery is that the tree will grow in soils not adapted for other crops.

A Successful Peach Sizing Machine

Designed by the Bureau of Markets, U. S. D. A.

THIS peach sizing machine consists of two parts, the sorting conveyor and the sizing section, the last named including the packing bins and the packing bench. In the illustration the sorting conveyor is shown at the left and consists of a padded hopper and an inclined roller conveyor. The roller conveyor consists of a series of wood rollers attached to link chains in such a way that an endless belt is formed which travels up the incline and as it does so the individual rollers, which are free to turn, are dragged over two leather covered board strips in such a way that each roller revolves slowly as the belt moves forward. The sorting conveyor communicates with the sizing section by means of a galvanized iron chute.

The sizing section consists of two sets of endless ropes which run in grooved guides made of wood elevated above the packing bins, a continuous sloping packing bin and a packing bench running around the entire sizing section.

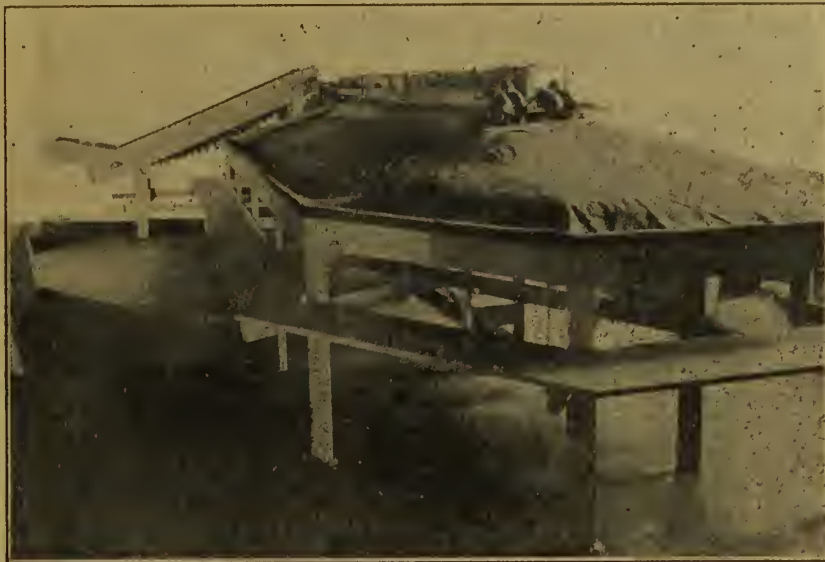
Operation

The fruit is dumped on the padded hopper, which is 36 inches above the floor level and feeds automatically to the roller conveyor, one line of peaches moving into each space formed by the adjoining rollers, which are spaced one and one-eighth inches apart. As

the peaches are carried up the incline past the sorters, who are stationed along the sides of the conveyor, the peaches revolve slowly and evenly,

may be attached to the sides of the conveyor.

The peaches which are to be sized are delivered half to one pair of ropes



Peach Sizing Machine Invented and Dedicated to Public Use by U. S. Department of Agriculture

thus exposing their entire surface to view. The belt should travel between 15 and 18 feet a minute. Defective specimens not intended for packing should be removed by the sorters and placed in receptacles or chutes which

and half to the other pair by means of the divided inclined gravity iron chute. These ropes travel 120 feet a minute. For the first three feet they run parallel, then they diverge till they pass over the loose pulleys at the

opposite end of the sizer section. Both of the inside adjustable tracks (at the end of the parallel section) are weakened by a saw cut extending two-thirds of the way through the track. This point is reinforced by a strip of brass four inches long and one-sixteenth of an inch thick, which is screwed to the back of the track, thus furnishing a flexible joint which permits the track to diverge from this point. The tracks are adjustable and may be set at any desired width or altered to meet new conditions, while the machine is in operation. The peaches are carried along on the ropes until they reach a point where the space between the ropes is wide enough to permit them to drop through into the bin below. The largest size does not drop through but is carried into the end bin. Peaches of the same diameter will always fall at approximately the same point. It will be understood that the first section of the sizer in which the ropes are parallel serves to take out all of the small peaches (any minimum size may be selected) not intended for packing as a commercial grade. As the peaches fall through the space between the ropes they drop on a strip of stretched canvas and roll from there to the bins, from which they are packed into the shipping packages which rest on the packing bench.

Farmers Mutuals Make Rapid Growth

By Frank George

WHO does not recall the forest fire that swept the state of Minnesota in the fall of 1918, a conflagration that desolated acre upon acre of farm and forest property and exacted a toll of hundreds of human lives? The fire raged for days. It seemed as though the entire northern part of the state would be destroyed. But finally, through the heroic efforts of the fire fighters, the flames were got under control and the work of reconstruction was begun.

Everyone remembers the trail of bankrupt insurance companies that was left in the wake of the San Francisco earthquake. While the Minnesota calamity was small as compared to that devastation, its severity was proportionately as great. How, then, were the four or five farmers mutual fire insurance companies operating in the fire swept area affected? Although hundreds of thousands of dollars had to be paid out in insurance by these local companies, the other 155 farmers mutuals of the state came to their rescue and not one of the farmers companies in the path of the conflagration went to the wall. The typical farmers mutual is, of course, entirely exempt from the conflagration hazard. The farmers of Minnesota, however, refused to permit any mutual of the type in which they were interested to fail to meet its obligations, even when it happened to operate in a wooded area where a conflagration actually did occur.

Farm mutual insurance associations are cooperative enterprises. As a matter of self interest, if for no other reason, every member of the association is interested in seeing that fires do not occur, either in connection with his own property or that of his neighbor. That not only reduces the per-

capita cost of doing business, but produces a sound economic condition in any community.

There are now nearly 2,000 farmers mutual fire insurance companies in the United States with a total amount of insurance in force exceeding six billion dollars. Generally speaking these companies are enjoying a large measure of success. They are saving the farmers large sums of money each year by preventing fire losses and by reason of the relatively low cost at which it is possible for them to furnish insurance protection.

The first farmers mutual companies came into existence about 1825, in New England and the Middle Atlantic states. It was soon demonstrated that a considerable saving in the cost of fire insurance could be effected, and the movement spread to other communities. By the middle of the century a considerable number of farmers companies of this kind were in existence, and more than half a hundred organized before 1850. By 1875 there were about 400 farmers mutuals and by 1900 at least 1,700.

The rapid extension of these companies after 1850 was due in no small measure to favorable state legislation. But in many states these laws had to be secured by the farmers themselves, sometimes in the face of strong opposition. The first law, passed in New York state in 1857, provided that 25 or more persons residing in any township of the state and owning a total of \$50,000 worth of property that they desired to insure might form themselves into a mutual insurance company. They were permitted to insure only buildings and their contents. They could not insure city or

village property, nor could they accept risks outside the borders of the home township. They could write insurance against loss or damage by fire only.

This law, though evidently too strongly restrictive in its provisions, appears to have been the model for similar laws in the Northern Central states generally, and in some 12 other states located farther south and farther west. The early New York law was subsequently repealed and in 1879 a second law, somewhat more liberal in its provisions, enacted. In the meantime Wisconsin, Illinois, Michigan, Iowa, Minnesota, Ohio and Indiana had enacted farmers mutual fire insurance laws, which in general were reasonable and practical in their provisions, or soon made so by proper amendments.

By 1890 practically every state in the Middle West and several of the Southern states had farmers mutual fire insurance laws. Twenty-five of these states have fairly satisfactory farmers mutual fire insurance laws.

While the precise saving in the cost of insurance to farmers through mutual insurance companies is not known, as no special effort has been made to collect lists of commercial rates for farm risks in the various states, it is conservatively estimated that in a number of the states where farmers mutual insurance is most highly developed, the average cost of insurance for all the companies in the state is well below one-half the rates quoted by commercial concerns.

This saving is the result of practical elimination of the feature of overinsurance and the reduction or elimination of expenses of operation, such as commissions, salaries, divi-

dends, taxes, rents, rating charges, legal assistance, etc., which must necessarily be incurred by large commercial companies.

A former state insurance commissioner declared that overinsurance was the cause of a great many of the fires in the United States. When it is considered that the fire losses in the United States since 1911 amount to nearly two and one-half billion dollars—a sum of money that would have paid the cost of constructing the Panama Canal six times over—it can readily be appreciated what a saving of half that sum would mean. But more important than the saving of that sum is the fact that the productivity of armies of men has gone to naught through the destruction of millions of buildings. Whether the buildings were insured or not is beside the point. The important fact is that they have been destroyed and that the energy of armies of other men must be exerted, not to create new wealth, but to replace that which has been so negligently and criminally destroyed.

Farmers mutuals, almost without exception, limit the amount of the insurance written to three-fourths or two-thirds of the actual value of the property. It is obvious that when you limit the amount of insurance to a point that will make it unprofitable for a fire to occur, the owner will exert every effort to safeguard his property by the exercise of proper fire prevention methods.

Further to prevent overinsurance in mutual associations, the agents receive a fixed sum for each policy, whether it is for \$1,000 or \$100,000, instead of receiving commissions on the amount of insurance written. Therefore the association's representatives

(Continued on Page 186.)

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Forty-third Year

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We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

NEW FUMIGATION ACTIVITIES

A new department has been outlined by the California Fruit Growers Exchange, to be known as the Department of Fumigation and Pest Control, and R. S. Woglum, for so many years in charge of such work for the United States department of agriculture, will be manager. It is understood that Mr. Woglum will take up the new work August 15.

FARM BUREAU MEETING

The American Farm Bureau Federation announces a meeting of particular interest to Rocky Mountain states to be held in Hotel Utah, Salt Lake City, August 20 and 21. It is a conference to discuss the vital problems confronting agriculture. "Special attention will be given problems of farmers in your section. Details and methods of the organization of county and state farm bureaus and cooperation with the state colleges of agriculture will be given a prominent place on the program."

BEET PRICES

Oxnard sugar factory has announced that initial payment to beet growers for this season's delivery will be on the basis of 12 cent sugar. This

is 50 per cent higher than initial payment last year, which was on the basis of eight cent sugar. There will have to be a material decline from present sugar prices or the beet grower will be entitled to several dollars more if he receives payment on the usual basis of one dollar per ton for each cent per pound increase over the 12 cent base. On the 12 cent basis he will now receive \$16 per ton for 15 per cent beets. If final payments are made, say, on 20 cent sugar basis, then an additional \$8, or a total of \$24 per ton for 15 per cent beets. As many of the Ventura County beets will range 20 per cent sugar, this will mean another large addition to his returns. The beet grower who has raised his crop at a net loss will recover some of it with this year's prices.

BIG RAISIN SALE

The sale of 150 cars of raisins in New York at around 23 cents per pound means the disposal of an enormous quantity of a California product at a most satisfactory price. President Giffen says:

"The auction sale held by the California Associated Raisin Company took place as per schedule. Sixty cars two-crown raisins sold at 22.91 cents and 90 cars three-crown raisins sold at 23.61 cents. These were sold on the regular California dried fruit contract for October shipment. E. Y. Foley of Fresno was the buyer of the whole lot."

Later he adds that any rumors as to there being collusion between the Associated and Mr. Foley are untrue, for there was absolutely no arrangement between Foley and the Associated. It was a straight purchase of a great quantity of California products with faith in future prices.

It is probable the Associated will hold another similar auction in Chicago.

NOT DESTROYED

The Colorado agricultural college issues a news note sheet in which various items of agricultural interest are chronicled and passed on to the press. In its last issue it announces that a study is to be made of botulism which has "destroyed the ripe olive business." At least these are the words which appear in the headlines of the article.

This is a bit unfortunate, for it is not true. It goes without saying that the olive industry has been seriously injured by the manner of playing up big headlines in the Eastern papers at the time of the poisoning cases. However, it is not destroyed. Regarding these cases, it was hoped at first that it was some terrible mistake and that olives were not responsible for the tragedies. Plainly, however, improperly processed olives were responsible. The method of the Eastern papers of playing up this fact, however, was most unfair to this industry which is peculiar to California. It goes without saying that this form of poison has existed since people began eating. One of the first cases observed many years ago came from poisoned sausage. Hence, its name, which comes from botulus, Latin for sausage. Canned fruits and other products have since been shown to be carriers of this poison.

This is not reassuring, but it is a fact which we may well realize in order to cope with this danger. The olive shippers and growers have taken hold of the situation with such vigor

that we believe it is safe to say there is no food offered today which is more wholesome than California ripe olives. Nevertheless, the producers are, in conjunction with Stanford, University of California and the Federal Health Service, making scientific investigation. It is announced that the investigation will cover about two years and be thorough in every respect. It is to be hoped the olive people will find means of preventing development of this poison, not only in the olives but all other kinds of food. In fact it is now well known that high temperature is entirely sufficient to assure absolute safety.

UNCONSTITUTIONAL

The California Irrigation Act of 1919 has been declared by the state supreme court to be unconstitutional. The intent of this act and of those who secured its passage through the state legislature was entirely laudable. It was thought to be for the best interests of irrigationists of California, but certain mistakes were made in its provisions, one in particular in that it exempted portions of certain counties from its operation. The decision was rendered in action brought in Madera County and against its board of supervisors because of the creation of an irrigation district covering 70,000 acres.

Unfortunately, lands in other districts will be affected adversely by this decision. For instance, the great Pine Flat project, affecting many of the counties of central San Joaquin Valley, will be put entirely out of commission until new legislation can be enacted or the old proceedings discontinued and steps taken to organize a new project under the Wright or other irrigation law.

Besides the districts in Madera County and the Pine Flat district, three others, Tulare Lake, Mendota and San Jose, all become non-existent under the decision just rendered. Many who are conversant with irrigation laws feel that the best procedure is to organize under the Wright Irrigation Act, which has been tested and declared to be constitutional.

QUALITY UP

Ohio reports the production of 60,570,000 pounds of butter last year, a material increase over former years. However, this leaves her far below the country's big butter state, Minnesota, which now produces 131,000,000 pounds. Iowa is second, Wisconsin third and California fourth, though with only slightly greater production than Ohio. We are not informed as to California quality, but we do know that in the matter of whole milk production no state in the country equals California. We believe the quality of her butter is entitled to the same reputation.

SOME CROPS

Every section of Southern California shows immense production of hay, grain and other field crops. Hay balers are busy, and while threshers have mostly finished their work grain is still stacked in the field. Just a hint to the producers: These products possess great value which is materially lowered in case one of those early fall rains finds them still outside. A September thunder shower is not unknown. Unfortunately car shortage prevents shipping and some storehouses are already full, but the wise farmer will find some method of disposal or of storage.

STILL DOING BUSINESS

(Continued from Page 179.)

contract. In other words, we feel in honor bound to help sustain this contract, though to us it may seem irksome.

And, of course, the last recommendation, which gives us the option of dissolution, is absolutely unthinkable, as there is probably not a single person in the San Joaquin Valley that would like to see this organization dissolved; even the independent packers, who happen to be in most cases growers also, testified before the commission that they would not like to see this happen.

In addition to the points mentioned in these recommendations there were three contentions made to the commission by our accusers, which both they and we believed to be the paramount issues of the controversy. They claimed that our control should be reduced to 50 per cent and that we should be forced to sell to them our raw product that they might manufacture under their brands. On these two points the report, as we now have it, is entirely silent, which we take to be a vindication of our position in reference to them.

The third point was the question of the fairness of our price. On this point we find that in the first part of the report the commission says that our price was unreasonably high, but in the last part they say that in view of the findings of the supreme court in the U. S. Steel Corporation case it passed over the question of the right of the membership of the company to fix the selling price of raisins. In other words, our interpretation of these two findings would be that though the commission, along with all other consumers, object to the high price they were forced to pay for raisins, still in view of the fact that everything else that the consumer is buying was as high or higher they did not feel that our price was, comparatively speaking, out of the way. In this conclusion that the price of all products is unreasonably high we find ourselves in entire accord with the commission.

In addition to this we want to particularly emphasize the fact that the interview appearing in the papers giving the opinion of John Preston was not the opinion of the department of justice, or at least if it was they have not so indicated up to this time. Mr. Preston says that nothing less than the reduction of our control to 50 per cent will satisfy the department of justice, and that the plan of selling raisins at auction is one that should not be tolerated.

The only thing of importance in this connection is that many people understood this to be the finding of the department of justice instead of the opinion of Mr. Preston. At one time Mr. Preston was United States district attorney but is no longer officially connected with the department of justice and is only a lawyer whose opinion on questions of law may be right and may not. His statement shows conclusively, however, that he does not understand the raisin business when he says that loose raisins are not one of the commercial varieties. Up to about 20 years ago there were no raisins known except loose raisins, and even today one-half of the entire Muscat crop has been sold in exactly the same form that we are selling these raisins at auction, and the entire Spanish crop is being sold that way, as they do not seed their raisins; and the fact that they are now buying loose raisins for the purpose of making liquor certainly does not change the fact that they are a commercial variety, as it is just as feasible to make liquor from seeded raisins as it is from those with the seeds in them.

And, finally, we ask you to remember that this flurry has in no way changed the fact that we are still doing business along the same lines as before, and there is certainly no reason to feel that the prices named at this time will not be attractive, as the market is exceedingly strong. There has been no reduction of our control, no grower is released from his contract and the obligations to stand by your organization are greater today than ever before. As to the final results, we feel that there can be but one conclusion, and that is that "right the day will win," and we have not done wrong.

PRACTICAL INSTRUCTION IN
CITRICULTURE

(Continued from Page 177.)

cooperation and good will. They lack the atmosphere of competition so prevalent among industrial activities. This probably explains the great advance agriculture has made in recent years. Through the county farm advisers the farmers are kept in touch with the state university and its work along agricultural lines, and through the county farm bureaus and chambers of commerce they come together for mutual help.

One of the greatest impressions gained on this tour through the state was the large place science has taken in agriculture everywhere. The farmer today understands more or less the relationships between pruning, production, irrigation, cultivation, fertilization, etc., and their whys and wherefores. He understands the mechanics of agriculture, so to speak. Although each has his own working theories, the principles under which they are all working are the same. They are not working blindly.

From the fruit growers of the northern end of the Sacramento Valley to the date growers of Coachella (the extremes of the territory we covered), the farmers we met were educated, alert and progressive, whether working for themselves on a small scale or for a large company.

Wesley Fleming, Orange Cove

Fertilization impressed me as being the most important single factor in the profitable culture of oranges and lemons. I believe this because the soil of heavily fertilized groves is nearly always in much better condition than the soil of poorly fertilized groves; because the water penetration and retention are increased by heavy fertilization; because the condition of the trees is uniformly better in properly fertilized groves, as is shown by color, size and general health conditions; lastly, because the yearly yields are made heavier and more uniform by fertilization.

I believe that cover crops should be the basis of all fertilization methods, as they are the cheapest form available. Their use makes commercial fertilizer more effective and lasting. Manure should be applied by the furrow method if obtainable. Commercial fertilizers of certain kinds can be profitably added if manure is not available, but care must be taken not to use certain commercial fertilizers which are detrimental to citrus trees. I therefore believe that the reason some citrus growers are more successful than others can generally be traced to better fertilization methods.

John H. Irish, Berkeley

Today, as never before in the history of our country, is the producer concerned about the labor situation. Laborers are reaping their harvest; they may ask what they will and the producer must meet their demands or let his work go undone.

What is the cause of this condition? The popular answer to this question today is the "great war." Is there not another answer? Have the relations between the producer and the laborer been such as to avoid such a breach?

In the past the general attitude of the employer has been to get as much as possible out of the laborer with the least possible expense, regardless of his health, happiness or social standing. The attitude of the laborer has been to get as much money as possible for the smallest amount of work. So long as such relations exist between the employer and the employed nothing but unrest, dissatisfaction and antagonism can be expected.

To the extent that the spirit of service can be conceived, born and nourished in both employer and employee, just to that extent can our present labor problem be solved. This has been clearly demonstrated by the experience of the Mills Orchard Company at Hamilton City. Here every effort is being put forth to make living conditions pleasant for the employees.

For the employees who have families cottages have been erected with modern conveniences and the latest improvements. Lawns, flowers and trees have been planted around these, making them attractive and homelike. Provision is made for the obtaining of household supplies at the greatest convenience and economy. A stage is

run daily by the company to carry the children to and from school. For the single men and temporary employees a bunkhouse is provided, which is well furnished, equipped with a dining room, a kitchen and a very efficient Filipino cook. This cook takes great pride in his work. He is not afraid to do more than his own work. He became ill once and went to the doctor and told him that he was ill because he had not enough work to do. Upon hearing this Mr. Mills furnished the ground and allowed him to raise his own vegetables for the ranch. He was delighted with this. He now raises all the vegetables used on the place, does the work himself and has not been ill since.

The bunkhouse is provided with a library of between six and seven hundred volumes, which furnishes a profitable pastime for the men when not at work.

What is the result of all this expense and concern shown for the employees? Does it pay? The result is that this company has no labor trouble. The men who come here to work remain. They do not come and stay a few days and then leave because of dissatisfaction. The present crew is made up of men who have been in the employ of the company from three to 18 years.

Does it pay to treat employees thus civilly?

If employers who have labor troubles would note this experience they might find a solution for their problem.

H. R. Schlapp, Melbourne, Australia

Perhaps the most noticeable feature of the trip was the extreme importance of fertilization in the citrus groves in order to maintain successful bearing. That a rational program of fertilization is essential was impressed upon me at almost every grove we visited, for the benefits that had been derived from such fertilization were extremely obvious.

The fertilizers that appeared to have given the most satisfactory results were the manures of various domestic animals, ordinary barnyard manure, sheep manure and chicken manure having stood out conspicuously. They seemed to have produced healthier trees and heavier yields than most of the commercial fertilizers. From the latter a distinctly harmful effect, on some soils, was noticed where there had been a continuous and heavy use of sodium nitrate, due, I should judge, to the presence of an excessive amount of sodium.

The importance of a goodly amount of humus in the soil and of a good physical condition when the fertilizer is applied is great, and this serves to emphasize the importance of winter cover crops in groves.

In applying the fertilizer most satisfactory results appear to have been obtained where deep furrows are utilized. By this method excessive losses from oxidation are eliminated and more of the plant food in the fertilizer is available to the plant roots. The furrows between tree rows are alternated so that the previous applications of manure are not disturbed and an even distribution of fertilizer is obtained.

E. G. Schlapp, Melbourne, Australia

In trying to decide upon the particular cultural method that has impressed itself most deeply on the mind, one comes to realize the very wide diversity of methods being used with apparent success in different parts of California. There is one thing, however, upon which almost all growers universally agree, and that is the great need of organic matter on almost all California soils.

Any system of cultivation which does not produce sufficient organic matter from the land itself cannot be regarded as a stable form of agriculture, or one best adapted to the country as a whole.

A method of cropping which does supply sufficient humus from the land itself, and which has the additional advantage of combating to some extent that scourge of the citrus grower, June drop, is now being worked out with marked success on several orchards in the state. Simply it is the growing of a winter cover crop, such as melilotus indica, which can be turned under very early in the spring, followed almost immediately by a summer cover crop of melilotus alba which

(Continued on Page 186.)

"THE ONLY 15-25 Tractor Capable of Pulling Three Plows on High Gear Around Here"

"I have just finished the threshing season pulling a 24" separator. I had plenty of reserve power at all times. In plowing the LAUSON seems to be the only 15-30 tractor capable of pulling three plows around here. Practically all the other machines use only two plows or plow on low gear. It is the best kerosene burner I

know of, using the lowest grade kerosene which will hardly ignite with a match and burning it without smoke or odor whatever."

This is a strong testimonial for F. B. Burns of Hornick, Iowa, to write. But it is the kind of service LAUSON Tractors are giving all over the country.

Year after year the LAUSON Tractor has gained favor with the better class of business farmers —men who consider service and satisfaction rather than price. You will usually find LAUSON owners the leading and most prosperous farmers in the locality.

Write for our new catalog which illustrates and describes the construction of the Lauson—the "Pattern" Tractor.

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The John Lauson Mfg. Co.
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Hornick, Iowa.
Aug. 10, 1919

The John Lauson Mfg. Company.
New Holstein, Wisconsin.

Gentlemen:—


Have just finished the threshing season pulling a 24" Advance Reelley machine with only 15 minutes' stop for tractor, a broken fan belt and a clog in carburetor. Had plenty of reserve power at all times.

In plowing the Lauson seems to be the only 15-25 or 15-30 tractor capable of pulling three plows on high gear around here, practically all the other machines use only two plows or plow on low gear.

It is also the best kerosene burner I know of, using the lowest grade kerosene that will hardly ignite with a match without any smoke or odor whatever.

Yours truly,
(Signed) F. B. Burns

The LAUSON 15-25
DUST PROOF—ALL GEARS ENCLOSED



TEAGUE TREES

Stand Supreme For Growth and Productiveness

You can't afford to buy anything but the best if you expect remunerative returns from your grove.

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Ours are the best that can be produced and always give satisfaction. Why take chances on inferior stock?

AVOCADOS

We still have a few extra fine field grown trees of the recommended varieties ready for immediate delivery.

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from 24 to 48 pages weekly
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The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

Work of the "Crypts"

By Ernest Branton



CRYPTOLAEMUS Montrouzieri is too long a name for practical purposes, so those who handle these beneficial ladybugs call them "crypts." Wherever introduced they have done wonderful work in the destruction of mealybugs of all kinds. In October, 1918, the Cultivator gave description of the work of these ben-

derful work has been done by them in Africa, Australia and elsewhere, and as long ago as 1895 the commissioner of agriculture at Honolulu, J. Marsden, wrote to California: "The cryptolaemus has done wonderful work on these islands; it has not only entirely cleaned out a Pulvinaria that threatened the total extinction of our growing coffee industry, but also a serious



Catching Adult Ladybirds

H. M. Armitage, shaking cryptolaemus from branches of the lemon trees in the Culp orchard in Ventura.

eficial insects, with illustrations taken by the Cultivator camera with the aid of H. M. Armitage, in charge of the branch of the state insectary located at Alhambra. Mr. Armitage has been in charge of the crypt family for some years and the beneficial work

blight, Dactylopius albizzi (a mealy bug), that was destroying all our citrus trees. Now it is seldom that any of the scale can be found, and the citrus trees are bearing good crops this year."

In many square miles of citrus or-



Migrating

Pasture is getting short in tree top. Hence the little crypts are migrating to grow up in another tree, and they may be seen on tree trunk and heater in the above photograph. Photos by California Cultivator.

accomplished has been most astonishing. Assistance has been rendered by A. A. Brock, horticultural commissioner of Ventura County. As the former article referred to some of the work done under Mr. Brock's supervision, another look in at some of these orchards should prove informing.

Splendid results have been obtained. As the writer stood in the orchard of L. E. Mills at Santa Paula, Mr. Mills said:

"This old lemon orchard was in a most deplorable condition, and fumigation did nothing for it so far as the mealybug was concerned. I double dosed it and burned the trees, single dosed it with doubled exposure and burned the trees, gave an ordinary fumigation and still burned the trees, but all of it did not burn the mealybugs. The crypts were turned loose and the deed was done; there is not a mealybug in the orchard and the crypts are everywhere. They are even falling off the tree under which we stand onto the tents where the Australian citrus students sleep."

On looking up the lower branches of the Norfolk Island pine, Araucaria excelsa, were seen to be covered with remains of the white araucaria scale, Eriococcus aracariae. All were found dead and only the "skins" remained. The crypts kill all mealybugs and closely allied insects and should be liberated freely in parks and gardens as well as in orchards. Won-

chards in the Santa Paula section the owners are jubilant over the work of the crypts. On the large Limoneira

T-I-Z-I-T SPRAY

Kills Black and Citricola Scale and controls Red Spider. Put it on your trees now—it works all summer. Thoroughly tried, tested and proven.

It makes larger crops, better fruit, healthier trees.

Put up in 200 pound barrels at 25 cents per pound, f. o. b. Los Angeles.

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Telephone 12089. 1344 Willow St.

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tract they have two insectaries and are hatching their own. There is a branch state insectary containing 30 cages, each capable of turning out 500 to 1,000 crypts each month. The present is the most active season and the one of largest output, June, July and August being the best months for the insects. For the year ending June 1, Mr. Brock had liberated from these cages into Ventura County orchards the following beneficial insects: *Cryptolaemus Montrouzieri*, 32,665; *Tanatomastix abnormis*, 143,000; *Hyperaspis lateralis*, 354; also a few of other species. This insectary is working to full capacity, is in splendid order and condition and Ventura County citrus orchardists know the days of the mealybugs are numbered, and they are not many.

Book Review

HELPING MEN OWN FARMS

"Helping Men Own Farms," by Prof. Elwood Mead, published by the Macmillan Co., New York, is \$2.25. We recently referred to this book on editorial page and hope it will be widely read. The book is true to name in every suggestion. In every word it is an education for the man who will read and who wants to better the community through helping men own their farms. The publishers say:

"As the cost of living has steadily increased the attention of people everywhere has been directed to a more economical and efficient administration of farms. This new volume by Professor Elwood Mead is a thoroughly up to date discussion of government aid in land settlement, dealing chiefly with methods and results in California and Australia. All the various questions relative to farm management are treated in a practical, concise, yet comprehensive manner."

The book consists of a dozen half tone illustrations, 14 chapters of text and an appendix which includes the California Land Settlement Act. The chapters touch upon State Aid in California, National Carelessness, Australia's Influence, State Aid in Italy, Denmark, Holland and the British Isles; State Aided Settlement in Victoria, Practical Teachings, Defects of Private Colonization Schemes, California's State Settlement, Social Progress, Capital, Lessons, Homes for Soldiers, Function of Government. Writing to Dr. Mead regarding this book, Edwin F. Adams says:

"Have just read your book about helping the poor man get a farm with interest and delight. I finished at one sitting, 3 to 9 p. m., with half an hour off for dinner, which is conclusive evidence of real interest, the more so as much of it was not new to me."

"Your description of Durham recalled the days when I as a farm laborer worked also from sun to sun and helped do the chores before and after; and where later, as a farm owner, my wife and I rose at 4 in the morning six days in the week for six or seven months in the year to milk ten cows, work before breakfast, and on Sunday slept an hour or more later and rode to church comfortably in the big farm wagon. Durham seems to have the spirit of the good old days unimpaired and with modern improvements."

"The gospel of work is a fine gospel. I remember Shepparton, Echuca and Bamawm, or whatever the name is, very well and would gladly revisit them to see what is growing on the fields mostly then vacant. From such chats as I could get with the settlers and their wives I found them very different from the American species of pioneer. They were evidently thinking not for how much they could sell out pretty soon, but of what a fine home they were going to have."

"If you could make all California fit your description of Durham I should feel inclined to get a doctor to try that new fangled bridge grafting or whatever you call it, on a fellow's insides and begin life over again in one of your colonies."

HER EXPLANATION

"Bessie," said her mother, "why is it that you and your small brother are always quarreling?"

"I don't know," returned the child, "unless I take after you and he takes after papa."—Boston Transcript.

If you can extract a laugh out of every solemn situation you'll live to be a hundred without half trying.

"How a new kind of farm hand added acres to my farm"



A regular man's size outfit, able to do a man's work

Editor's Note: W. E. Shetrone, a farmer near LeRaysville, Pa., shows how you can help to solve your labor problem.

"Now, I'm not going to tell you that the Western Electric Power and Light Outfit is the best on the market. The chances are you know more about farm plants than I do. All I want is to tell how this outfit has been doing a man's work on my place—when men are hard to get. That is how it saved time enough for me to cultivate seven acres more last spring."

W. E. Shetrone

LeRaysville, Pa.



Mr. Shetrone's house is pleasantly located

LAST YEAR I was struggling along with my little farm—milking by hand, taking a two-hour trip to the creamery every day, working hard to support my family. Then a salesman showed me how I could do the work in less time and with less effort by installing Western Electric Power and Light equipment. Well, I put the apparatus in, and right from the start it began to save time and labor. In fact, the time it saved me made it possible to plow seven acres more last spring.*

A powerful outfit for heavy work

"Power ought to be the first consideration in buying a farm plant. There are plenty of good electric sets satisfactory for light-

ing. But not many of them are strong on power. You can't expect them to do the hard work."

"The Western Electric has a three horsepower engine, which as you know is ample to run most all the machinery. Grindstone, feed-mixer, churn, mill—you can operate them all together from a shafting hitched up to this powerful engine, because there's a pulley on it for just such work."

"In generator and battery too, power is the feature that impressed me most. My Western Electric outfit furnishes plenty of electricity to light the house and barn, and at the same time it runs the pump, the milking machine and such household appliances as a vacuum cleaner and a washing machine."

*What the Western Electric Power and Light Outfit did to make Mr. Shetrone's farm more productive, it can do for your farm too.

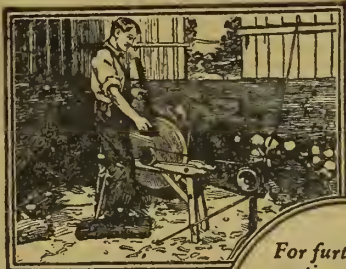
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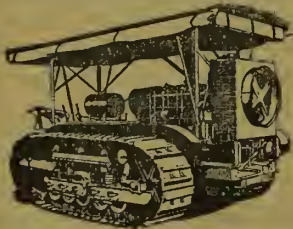
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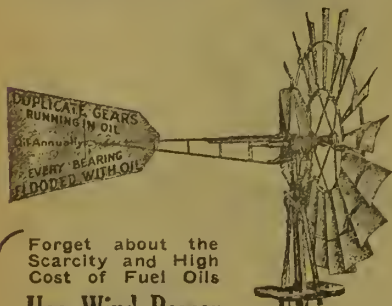
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419 East Third St. Los Angeles, Cal.

Better service is assured by the advertiser if when writing you mention the California Cultivator.

PRACTICAL INSTRUCTION IN CITRICULTURE

(Continued from Page 183.)

will be of sufficient height during the fruit setting period to afford shade to the ground. This produces a more uniform temperature in the soil and surrounding atmosphere than where clean cultivation is followed, and a corresponding decrease in the ravages of June drop. Earliness being an essential factor, it is necessary that some crop be planted the seed of which will not rot in the ground, and white clover has been found very satisfactory for the purpose. Unfortunately, water conditions make summer cover cropping impracticable in certain districts, but it has been noticed that where this method has been intelligently followed not only has the soil been in fine tilth, but as a result the orchards were invariably more thrifty than others in the same neighborhood.

Mrs. Frederick Ellicott, Berkeley

One lesson which has been most forcibly borne in on me during the summer traveling course is the need for what may be called an individual system of pruning for citrus trees. As yet so little is known about the way in which these trees can best be pruned that all work is more or less experimental, but it looks as though at least two false ideas were being slowly discarded by the growers and trees are no longer being pruned to improve their appearance or because pruning alone is supposed to increase the crop.

It is probable that a healthy, well cared for tree which is doing its full duty looks better than one which is ill conditioned and unprofitable, but pruning should primarily be directed toward improving general conditions and not toward improving appearance alone; and this should be kept in mind even if the result is not to produce an orchard which looks like a background on the cover of a Vogue magazine.

Obviously, pruning of itself does not increase the crop. For one thing it lessens the area on which fruit may be borne but it may be the cause of better fruit. A pruner, to be successful, should aim at three things—to keep his trees a manageable size; to prevent their becoming so thick that all the fruit grows on the outside; to eliminate undesirable types of growth. But these things cannot be accomplished by going into the orchard with set ideas of what is to be done. Citrus trees vary in the character of their growth, not only from each other but even in different parts of the same tree, and it is this instability of character, combined with the fact that citrus is here being grown out of its proper environment, which makes the handling of them such a difficult task and makes the need for an individual system of pruning almost imperative. Each tree should be pruned on its own merits—or demerits.

FARMERS MUTUALS

(Continued from Page 181.)

constantly seek to protect the association, a policy that is proportionately beneficial to the members who make up the organization.

The systematic inspection of risks is another factor in preventing fires and reducing the cost of insurance to a minimum. Statistics prove that defective flues and heating apparatus are among the most frequent causes of loss of farm property by fire. These sources of fire loss can be very largely removed by proper inspection, the importance of which is fully appreciated by mutual associations. The achievement of factory mutuals in reducing their rate of insurance costs by more than 90 per cent during a period of 50 years, in a measure has been ascribed to the thorough and systematic inspection of risks.

There are many general farm mutuals that have achieved similar results through the adoption of this practice. One outstanding example is that of The Svea Mutual Protective Insurance Company of Illinois. This company, organized 50 years ago, makes an annual inspection of risks. It has over \$10,000,000 of fire insurance in force, the average cost of which, covering the entire 50 year period, has been less than 7½ cents per \$100 per year.

One of the notable achievements of cooperative insurance has been the de-

velopment of community spirit. The farmers have come to learn that large rewards come through cooperation and interdependence. The success enjoyed in mutual insurance, moreover, has been an impetus to cooperation in other fields of endeavor. These take the form not only of cooperative marketing and purchasing organizations, but of cooperative telephone companies, cooperative motor truck routes, and an infinity of other cooperative arrangements among farmers. Of course, it must not be overlooked that these associations sometimes fail, but the reason for that is the practice of faulty business methods and a lack of cooperative spirit on the part of each and every member of the organization. Unselfishness must be the watchword if the association is to succeed.

The office of farm management of the United States department of agriculture has made an intensive study of all forms of cooperative endeavor, including farmers mutual fire insurance companies. The office will gladly assist, without charge, any individual or community seeking first hand authoritative information on the subject, not only with regard to the general benefits and advantages to be gained, but with regard to methods of organization and details of conducting the business.

FIG AND PEACH MERGER A SUCCESS

After a campaign covering a period of two months the directors of the California Peach Growers have announced that they have secured contracts covering 75 per cent of the peach acreage and at the same time stock to the extent of one-half million dollars, and 75 per cent of the fig acreage has been signed by the fig growers of the state. The necessary legal steps to complete the merger of the two marketing organizations will be taken in time to handle the 1921 crop of figs. The 1920 crop of peaches will be handled by the association under the old contract.

The new association will begin work immediately, installing the necessary machinery and equipment to handle the fig crop, and it is expected that, inasmuch as the fig and peach acreage is largely in the same districts, the substantial buildings already put up by the peach association will serve the dual purpose admirably.

The success of the Peach Growers in marketing the dried peach crop of the state has been almost spectacular. Coming into existence as it did when peaches were selling for two or three cents and less and the grower was pulling out his trees, it seems nothing short of a miracle that the company could market the crop and pay the grower six cents per pound the first year. Growers received better than 14½ cents for their 1919 crop of peaches. The fig market is at low ebb at this time. In spite of the fact that the bulk of the crop last year sold for high prices, 20 cent offers not being uncommon, the grower has heard nothing above five cents this year.

The association will undoubtedly confine its activities this season to standardization, improved methods of packing and advertising, and possibly some assistance in marketing the bulk figs.

The new peach and fig contracts are practically identical and call for delivery to the association for the next four years with an option for four more years which may be exercised by the association. When the campaign started the Peach Company announced that unless at least 75 per cent of the acreage was signed up the contracts would be returned and the association would go out of existence after marketing the 1920 crop. The action of the growers in again signing the contracts insures the industry for another eight years, and with the addition of the fig membership the new company will become one of the really big cooperative marketing organizations of the state. —F. K. H.

A \$1,000 SPRAYER

One of the last official acts of Horticultural Commissioner Brock of Ventura County, was the purchase of a fine spraying machine at a cost of \$1,067. It is a horse drawn vehicle capable of supplying spraying material under 250 pounds pressure to each of four hose attachments. It will be used principally for black scale on apricots,

for codling moth on apples and red spider on lemons. On August 1 Mr. Brock retired from his former official position, after eight years service, to take charge of field work for the Santa Paula Citrus Growers Association. He has been succeeded by Chief Deputy Call.

NATURAL INFERENCE

The street car was passing a glue factory, and the odor emanating therefrom was decidedly obnoxious. The prim young lady took out a bottle of lavender salts and sniffed vigorously. Finally the man behind her tapped her on the shoulder.

"You'll have to cork up that bottle, lassie," he said. "I can't stand that smell any longer."

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to take interesting little journeys to places of pleasure as well as trips for your business needs at about a cent a mile for daily travel and less than 3 cents for your occasional trip over lines of this railway.

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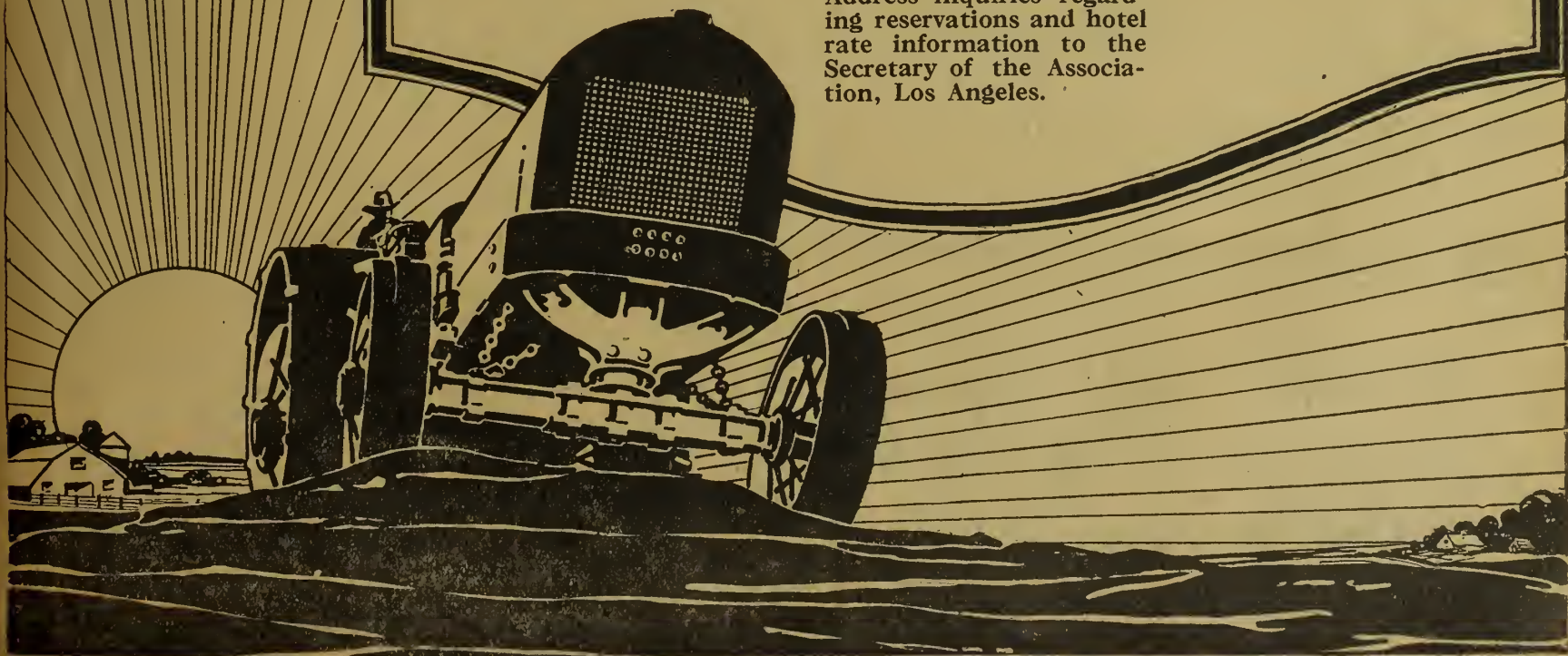
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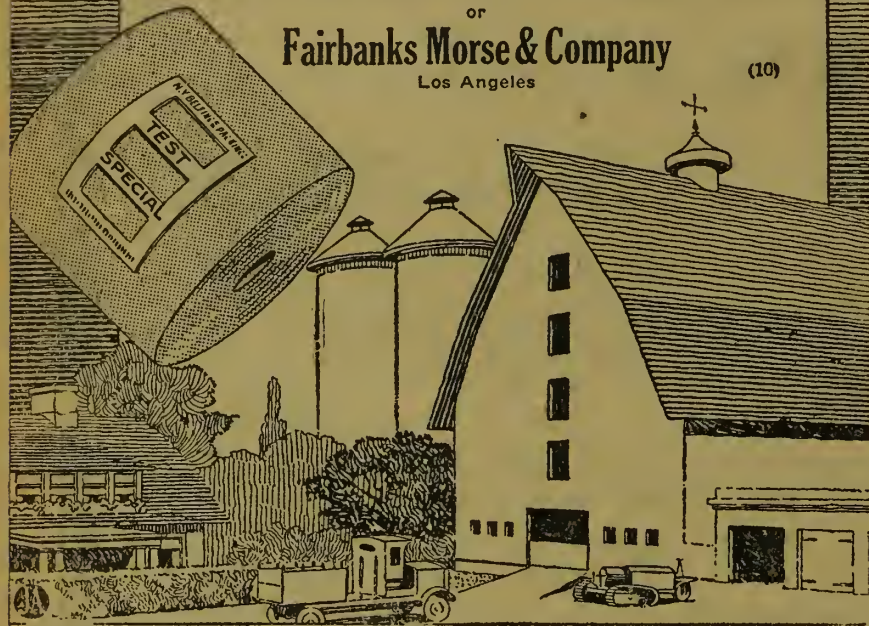
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OREGON

Motor Trucks on Eastern Farms



WHAT do you find to be the greatest advantage of owning a motor truck? Of 753 owners of motor trucks who were asked this question by the United States department of agriculture, 91 per cent said, "Saving time."

About 25 per cent of these men had better markets since buying their trucks, but 50 per cent of them had not cut down the number of their work stock by as much as a single head, while less than one man in ten had cut down his work stock more than two head.

"Which merely goes to show," says a department specialist in farm power, "how difficult it is to arrive at a definite conclusion in a matter like this motor truck study. It would certainly appear that any saving attributable to the motor truck on the farm is in time rather than expense. Most of these men think that the profits accruing from the saving in time more than overbalances any extra expense entailed by the use of the motor truck. It is significant that the majority of these farmers are located a considerable distance from market, more than four-fifths of them being five miles or more from their shipping points, and the saving in time effected by their use of trucks is naturally greater than it would be on the average farm which lies nearer to market than do most of the farms concerned in this investigation. The experience of the 753 farmers who have contributed to this study should enable the farmer himself to judge with a fair degree of accuracy as to whether the motor truck would prove advantageous under his conditions."

The investigation in question was made during the past winter and spring in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware and Indiana.

In the opinions of these men the principal disadvantage of a motor

truck is "poor roads."

As compared with horses and wagons, the trucks save from one-half to two-thirds of the time required for hauling materials to and from these farms.

These farmers have return loads for their trucks about one-fourth of the time. A majority of them still use their horses for some road hauling.

The owners estimate that on the average their trucks travel 3,820 miles per year and are used on 173 days per year.

The average life of the trucks is between six and a half and seven years, and in most cases depreciation is the largest single item of expense in connection with their operation.

The average cost of operation of the one-half ton trucks was about eight cents per mile, of the three-fourths ton trucks about 13 cents, of the one-ton about 12 cents, of the 1½ and 1½ ton about 19 cents, and of the two ton about 20 cents.

The average cost of hauling crops, including the value of the driver's time at 50 cents an hour, was about 50 cents per ton mile with the one-half ton trucks, 34 cents with the three-fourths ton, 26 cents with the one ton, 24 cents with the 1½ and 1½ ton, and 18 cents with the two ton trucks.

About four-fifths of the men state that their trucks decrease their expense for hired help. On the average they estimate that this decrease amounts to \$324 per year.

Over half of the 205 truck owners whose farms contain more than 120 crop acres own tractors. The number of work stock kept on the farms where both trucks and tractors are owned is only slightly less than the number kept on farms of corresponding size where only trucks are owned.

We may be mistaken, but we believe that a similar investigation conducted in California, with its good roads, would make a showing far more favorable to the trucks.

Cooperative Grain Elevator Companies

In the United States there are some 14,000 cooperative marketing associations. To many of them the bureau of markets has given valuable assistance by furnishing specimen copies of by-laws and by indicating proper methods of organization and administration.

"The Organization of Cooperative Grain Elevator Companies" is the title of Bulletin No. 860, just issued by the United States department of agriculture upon this subject. The bulletin is addressed to those who desire assistance in the formation of cooperative grain elevators, but the subject matter is treated in a manner that makes the bulletin of interest to those engaged in other lines of cooperative endeavor as well. The scope of the pamphlet is limited to matters regarded as fundamental and general, and it is intended that the suggestions and recommendations be considered with reference to and in connection with special cooperative laws and the laws governing corporations in each of the several states of the Union.

The bulletin points out that the success of any organization, whether cooperative or for private profit, rests upon social or economic need, a sound organization plan and efficient management. It then details the various factors that produce these basic conditions. It dwells upon the organization of joint stock companies, private corporations of the capital stock form, and cooperative associations incorporated under special cooperative law, the three common forms of organization of farmers elevator enterprises in the United States.

Under the chapter of preliminary survey, matters of local conditions, prospective membership, capital, volume of business and methods of survey are covered. Then the processes of actual organization are discussed and a suggested form of by-laws given.

The bulletin also contains some general suggestions regarding the selection of the plant, the choice of directors and a manager, a maintenance agreement, emergency capital and speculative tendencies. The appendix

gives detailed forms to cover every phase of the administration of the organization from a capital stock subscription contract to a form of stock certificate, and service and maintenance agreement.

The pamphlet has been written by experts in matters of cooperative associations. It is the composite result of actual experience and should prove of valuable assistance to those interested in cooperative marketing. The bulletin may be had upon request of the United States Department of Agriculture, Washington, D. C.

KILLING DODDER

We recently answered a question as to control of dodder in alfalfa in effect that torch or fire from burning straw would prove effective. This reminded an old time subscriber of information which he had formerly furnished us on this subject, and he writes:

"Some ten years ago I wrote an article for your paper in regard to the use of a blast torch for the control of dodder. This article caused some little comment at the time and I received a great many letters regarding it. Since that time I have seen published in your paper and other journals, as well as in government bulletins, means of eradicating the so-called pest. Lately I noticed an article in which you suggested the burning of straw or the use of a blast torch "such as is used by plumbers." I cannot see how such a torch could be used with any effect, and, to say the least, in my mind the burning of straw is unsatisfactory.

"The blast torch, or 'pear burner,' as it is called by the manufacturer, is a brass tank which holds about two gallons of gasoline, which is strapped across the shoulder, and to this is attached a one-fourth inch pipe about five feet long with the necessary valve, pressure pump and swivels. On the end of this is a large burner which, when properly generated, will throw a flame I should judge ten inches in diameter and three feet long, that is,

when turned on full force. The valve is always under the left hand and as soon as the full force of the blast is not needed it can be shut down so as to save the gas.

"Several years ago I bought the ranch we are now on and never in my life did I see as heavy a crop of dodder on a seven acre piece of alfalfa. When the first cutting was taken off there were places that were a solid blanket as large as 100 feet square. The next cutting it could scarcely be found. This was done at a cost of not to exceed \$1 and one day's work, which covered the field three times.

"Cut the alfalfa close, then pass the flame over what might be left. Do this again in a week, then the third, and presto, it's gone!

"Dodder, so far as I have known, has been considered a pest, but if properly handled is not a pest and can hardly be called a bother."

SAN GABRIEL VALLEY SPUDS

Diggers and pickers are at work in the McSweeney ten acre lot of White Rose, pictured in the Cultivator of June 19. This field was planted about March 15 and it was anticipated could be dug about June 20. But cool weather prolonged the season until July 6. Just what the entire ten acres will yield cannot be told just yet, but on June 7 the yield was running about 140 sacks of fine spuds to the acre.

Potatoes throughout the valley promise well, but there are a few exceptions. From various parts of the south come reports of vigorous vines but no tubers, or at least very few. At San Gabriel the same trouble is experienced to some extent, and one plot of British Queen was found in abundant vigor above but no crop below. This condition is no doubt due to climatic deficiencies and cannot be overcome or improvement made by any known method of treatment. Turning under and planting some other crop is recommended.

NEWLY SETTLED VALLEY

One of the newer producing sections of California, in San Diego County, is Verruga, a mountain valley just south of the Warner Ranch. One of its warmest friends, W. H. Sharp, and an old subscriber to the Cultivator, writes:

"This is a plateau of 5,000 acres on the western slope of the rim that divides the desert from the Warner Ranch country, north of Julian a few miles in the so-called snow belt of the Volcan Mountains. There are 40 homesteaders in the valley; no old farms to show what the country is adapted to. It is a vast brush patch. The land cleared is very fertile, producing wheat of fine quality from 15 to 30 bushels per acre when sown in November or December, milo to perfection, fair crops of broom corn, late crops of melons, cantaloupes, some experimenting with cotton, which looks fine at present writing, without irrigation. The average rainfall since I have been here has been more than 18 inches, this year 22½ since last September, not including two thunder showers the last ten days, which have revived the corn and vegetable crops."

LAKE TAHOE HAS SHRUNK

Lake Tahoe in California is often said to occupy an old volcanic crater. This is not a fact. It is true that the region about the lake shows evidence of volcanic activity of various kinds and that the water has at times probably been dammed by outpourings of lava, but the lake itself lies in a structural depression—a dropped block of the earth's crust.

The prehistoric Lake Tahoe was larger and deeper than the present lake, according to the United States geological survey, department of the interior. During the Neocene epoch and the earlier part of the Pleistocene epoch its water stood much higher than now, but in its overflow it has since cut through the lava dams that maintained it at that height. Distinct beaches that mark the former higher levels of the lake stand about 100 feet above its present surface, but the water doubtless once stood at even greater heights. At Tahoe City the most distinct of these old beaches is a terrace that stands 35 to 40 feet above the level of the lake. It is on this ancient beach that Tahoe Tavern is built.



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And the tractor as a whole measures up to the engine. Gears are drop forged, steel cut and heat treated. All gears are enclosed. The best anti-friction bearings money can buy for every important bearing surface. Building a machine dust proof insures the life of this machine better than a life insurance policy.

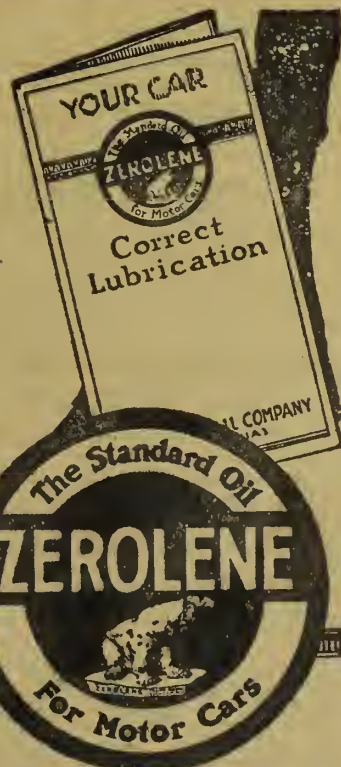
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Our Board of Lubrication Engineers has prepared a Zerolene Correct Lubrication Chart for your car. Get one at your dealer's or our nearest station. Use Zerolene for the Correct Lubrication of your automobile, truck or tractor.

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Drying Thompsons

Please give method of drying Thompson Seedless grapes.—Subscriber, Sacramento.

In the San Joaquin Valley Thompsons are dried in the same manner as Muscats, namely, placed on wooden or paper trays in alternate rows of the vineyard and allowed to dry in the sun. When partially dried they are turned so the other side of the fruit is exposed. When sufficiently dry they are placed in sweat boxes for the purpose of equalizing the moisture content of the berries. In the Sacramento Valley the drying season is not usually so favorable, so the fruit is dipped in a hot lye solution, which cracks the skin, thus shortening the drying time. Because of equipment costs for handling this work economically, commercial dry yards handle most of the tonnage for the individual grower.—F. K. H.

Perennial Rye Grass

Please tell me about perennial rye grass: Best time to plant; yield per acre, feeding value; how long a stand

lasts; will it yield heavier the second year than the first; will it stand close pasturing; is it hard to kill out if plowed under? Our soil is clay but fairly well drained, though some water stands on it during heavy rains.—Subscriber, Lower Lake.

September is a good time to plant. The yield per acre is about three-fourths ton to a cutting and it can be cut not more than three times, but its chief value is as pasturage. The feeding value is good. Some growers sow it every year, while under favorable conditions it lasts for years, though in this respect Italian rye is superior. The yield will be heavier the second year and it bears close pasturage well. It is not hard to get rid of by plowing under. It is believed that Italian rye will serve the reader better than that known as perennial rye.—E. B.

Plants Wilt

C. Hattada, P. M. Sugita and M. Tashima of Montebello complain of wilt of rhubarb, young violets and asters, also of other plant troubles. All three plants named need an abundance of water in hot summer and will sometimes wilt in spite of a good supply. Red spider sometimes kills young violets. Plenty of overhead spraying with water will kill them, but a lime-sulphur spray is better. Young

asters are killed by both root aphid and mealybug. Look at roots and if either are present spray or soak soil with a liquid made from a 40 per cent nicotine base according to directions on package. As to best potatoes for new soil, there is no preference; White Rose, Red Rose, British Queen and Scottish Chief all are good. The simple statement that tomato and potato plants die gives us no chance to prescribe. We should have symptoms and general behavior as well, also soil conditions and care given.—E. B.

Mealy Bugs

What is the best spray for mealy bugs?—Subscriber, Glendale.

The subscriber does not say what plants are infested, but assuming it may be citrus trees, which are susceptible to the attacks of the mealy bug, we would apply at once to Mr. Armitage at the state insectary at Alhambra and ask for colony of Cryptolaemus, which will in all probability be sufficient to fix the mealy bugs so that no spray whatever will be necessary. If, however, spraying is preferred, a distillate emulsion is perhaps best. Owing to the woolly covering an oily spray seems to be the only one which will penetrate and reduce the pest. The Cryptolaemus, which is a natural enemy of the mealy bug, is doing some remarkably fine work as shown in the story in this issue regarding its work in Ventura County.

Filter for Vinegar

Can you suggest how to make a "home made" filter for vinegar? Have a quantity of cider vinegar which we wish to filter.

We know of no filter better than the ordinary filter paper folded and put in the funnel. Many prefer the filter of absorbent cotton plugged, either loosely or tightly according to the liquid to be filtered. This cotton may be had from any druggist, and placed in stem of funnel, glass preferred, it works perfectly. If, however, the work needs to be done in large quantity, we should think one or more thicknesses of muslin stretched over head of barrel or keg would make acceptable filter.

CURING PRUNES

An old time method given in the columns of the Cultivator some years ago as described by Mr. Richmond, a large San Jose grower, is as follows:

"The green fruit is hauled to the dipper shed in picking boxes and there passed through a light solution of lye. A kettle or tank holding 200 gallons of water and a basket container are used for this purpose. In many instances the fruit is rinsed by passing from this dip into a vat of clear water and is then dumped onto a combination pricking board and grader, which grades the fruit into three grades so that the drying in the field can be uniform, the grader being operated by power. The fruit is then placed on eight foot trays and taken to the drying yard and dried in the sun. The purpose of passing the fruit through the lye solution and over the pricking board is that the skin may be slightly cut, thereby preventing fermentation and producing a fruit with a clear bright meat. Many of the small growers do not use the combination pricker and grader; they dump the fruit directly from the dipper basket to the trays, allowing all sizes to be dried together. This is not as satisfactory to the grower as the first mentioned method. The most satisfactory and economical method of handling from the dipper shed to the drying yard is to use a one horse truck especially constructed for this purpose.

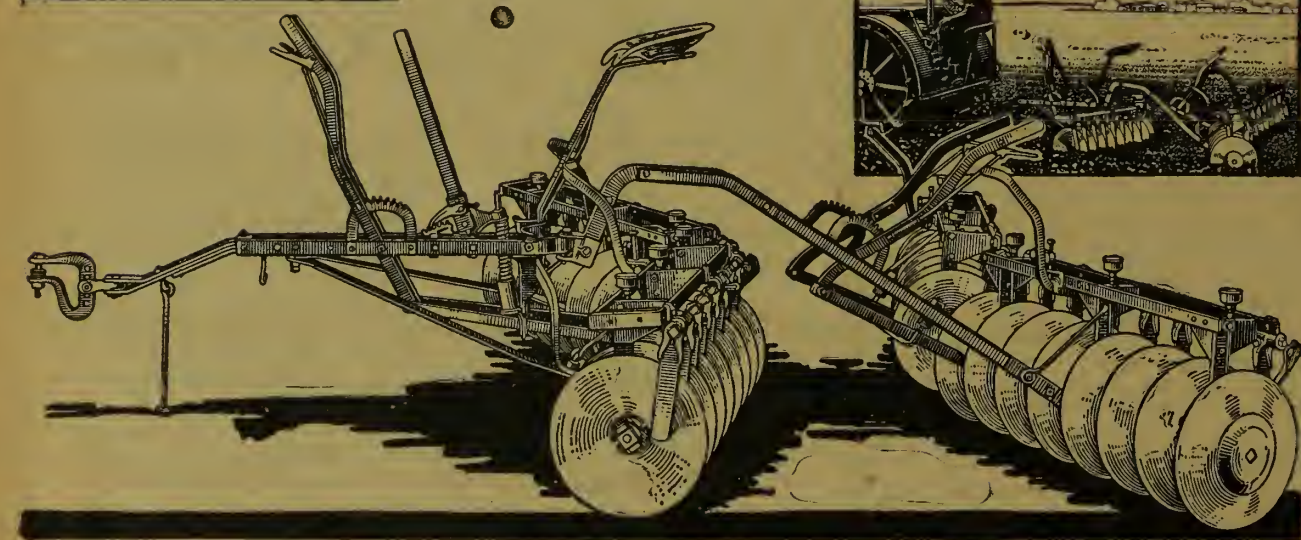
"The question of drying is again a matter of judgment. Fruit should be allowed to lie in the sun on the trays until about three-quarters dried, and then be packed in piles one above the other, leaving air vents on either end. About 20 trays can be stacked in one pile where the finishing process takes place. Under normal weather conditions it takes from ten days to two weeks to cure prunes. It has been found most satisfactory while the fruit is on the trays in the dry yard to give at least one turning by hand, shaking the trays, or with brooms, so that the fruit secures an equal drying on all sides. It also materially lessens the

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This harrow is flexible—each gang works independently—obstructions in the field do not lift the entire harrow out of the ground. And the front section can be

furnished equipped with the famous John Deere third lever and powerful pressure spring—the feature that makes possible disking at even depth entire width of harrow always—in dead furrows as well as on ridges. Light running—There is no dragging around corners—the rear gangs trail properly and run steady because the reinforced goose-neck connection to rear gangs is attached ahead of the front gangs.

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To create additional available plant food and prevent smut in grain, drill into the soil 110 pounds per acre of TORO BRAND SPECIALLY PREPARED AGRICULTURAL SULPHUR—or our DIAMOND "S" BRAND REFINED POWDERED SULPHUR. This soil treatment has increased various crops up to 500%. Send for Circulars No. 6 and 7, and circular letter of information, "To Whom It May Concern".

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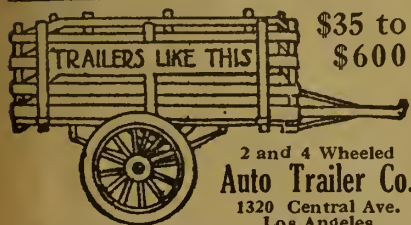
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time of drying and makes a finer grade of fruit. Do not take your fruit from the trays until it is thoroughly cured. This word of caution means the salvation of your business.

Mr. Richmond does not give the proportions of the lye solution. A solution which is possibly stronger than the one referred to is given in a former Cultivator as follows:

The strength of the lye solution depends on the ripeness or condition of the fruit and degree of heat. If the prunes are fully ripe or partially dried and the water is not boiling, some use as strong a solution as one pound of lye to ten gallons of water. When care is used to keep the water at boiling it may be used as weak as one pound to 50 gallons.

GRAPE STANDARDIZATION SERVICE

The following suggestions and regulations for grape packing and shipping have been adopted for use during the present season:

All grapes, both standard and sub-standard, for table, manufacturing, by-products or any other purpose, testing less than 17 per cent sugar content Balling scale shall not be shipped, with the exception of Emperor, Gros Colman and Cornichon, which shall show not less than 16 per cent sugar content, Balling scale. Inspections for sugar content will be made in so far as is practicable during the packing operations.

Grapes, which when packed either in lug, crate, drum or other container meet the requirements of the fresh fruit and vegetable standardization law approved May 27, 1919, shall be labeled in accordance with name of packer, shipper, grower, firm or organization which shall have first packed or authorized packing of the fruit; address of packer; name of variety if known, and if not known, the words "unknown variety"; minimum net weight; and if two or more varieties are packed in a container, the words "mixed varieties." In the case of lugs, "pack, packing or packed" shall mean the regular compact arrangement of the grape bunches with stems uniformly up or down.

No markings will be required on unpacked grapes which do not meet the requirements of the standardization law. Packers may mark such stock as they see fit, but inspectors will not permit the use of the words "Table Stock," "Extra Fancy," "Fancy," "Extra Choice," "Choice," "Standard," or any other grade terms which might be misleading.

Inspectors condemning packed grapes will require same to be dumped loose in lugs if designed for shipment, unless the shipper desires to recondition the stock in order to meet the requirements of the standardization law.

PINK FLESHED GRAPEFRUIT

F. G. Sheffer, horticulturist of Phoenix, now summering in Los Angeles, is a believer in Arizona grapefruit, more particularly of one particular kind of grapefruit, a pink fleshed, large growing variety. Hence, he has received from Diller & Sons, Arizona, packers of grapefruit, specimens of this pink fleshed, or what might be termed a blood variety, of grapefruit. The pink coloring is not shown so much in the flesh as in the skin. The flesh, however, is a most attractive shade, and we will have to confess the eating quality of the fruit is excellent.

RAISIN AUCTION

As the result of a public auction held in New York City, August 2, the Associated Raisin Company sold 150 cars of two and three crown loose Muscat raisins at average prices ranging from .2291 to .2361 cents per pound respectively. It is understood that the directors of the association will use these prices as a basis for fixing the prices for the 1920 crop.

WE BUY GREEK CURRANTS AGAIN

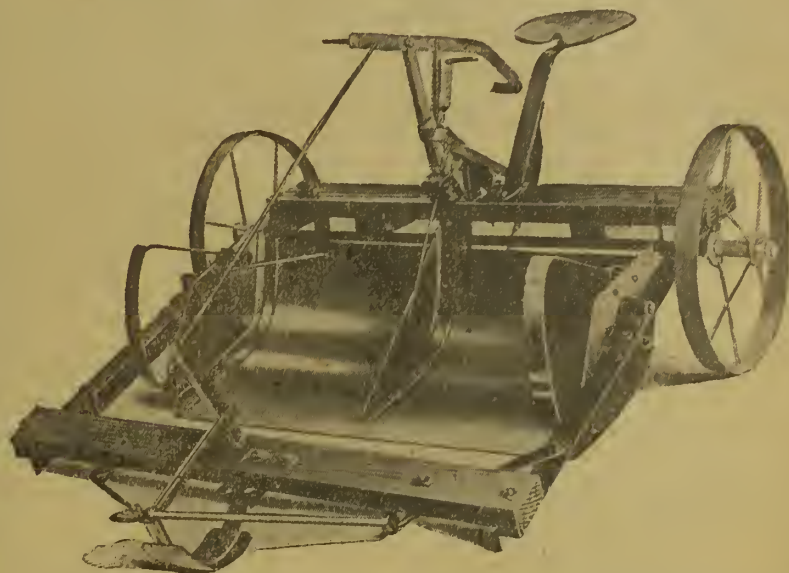
During war years imports of Greek currants were suspended; now American buyers are reported by the federal bureau of markets as taking large amounts of the foreign product. A total of 16,167,494 pounds were exported from Patras, Greece, to the United States between January 10 and March 9, 1920, as against 14,560,595 pounds for the entire 12 months of 1919.

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Bradley's fertilizers are quick-acting, high-grade and dependable. They help to set more fruit. They keep it growing and thus insure better size and quality. They grow the new wood necessary for the next crop. They increase the cover crop and thus add humus to the soil.

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 County Agricultural Agent,
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 for its quality.

The crop this year
 is very short, less
 than one-half nor-
 mal.

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 now, not only for
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We Guarantee Identity of Every Sack. Grower's Initials on Each Sack.
 Fields Personally Inspected by J. W. Longstreth.

Yuma Valley Produce Growers Assn., Yuma, Arizona

Livestock Insurance

The fall fair and exhibition season is at hand. THE HARTFORD LIVE STOCK INSURANCE COMPANY will insure your show stock (horses, mules, jacks, cattle, registered milch goats, and registered swine) against death from any cause, while at home or on the road, including the hazards of transportation. Policies broad and liberal; rates reasonable—yet adequate to insure prompt settlement of claims. Before shipping see the Hartford Agent in your town or address

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Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

BIG PUBLIC SALE OF BERKSHIRE SOWS AUGUST 14TH

Alex. Wilson, Supt., Guasti, Cal.



The Southwestern Berkshire Congress will hold a consignment sale of about 40 bred gilts and sows on the D. J. Bastanchury Ranch, August 14th, 1929, at La Habra. All animals guaranteed to be in pig. Big barbecue and good time. Pay us a visit and get acquainted before the sale.

Over Two Million Calves

protected against Blackleg for LIFE with ONE treatment vouch for Purity Blackleg Aggressin (Germ-Free Vaccine made by the Kansas Process). Absolutely safe to use. Cannot transmit disease. Brand, castrate, etc., when you vaccinate. OTHER PURITY PRODUCTS: Anti-Abortion Vaccine for Cattle; Hemorrhagic Septicemia Vaccine for Cattle, and Sheep; Anti-Hog Cholera Serum, and High Count Mixed Infection Vaccine for Swine. For service that counts write, phone, or wire

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Great Auction Sale of livestock and farm products. Over 100 ranches combined in the sale. Best stock in the county. Best DUROC-JERSEY swine in the state. Other breeds in the sale. FINE DAIRY COWS—40 HORSES—MULES—100 SHEEP. Big sale of MILK GOATS. POULTRY ranches selling out stock.

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Sales made any time and any place. Write for sale dates, we can fill them.
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Value of Show Ring in Fostering Better Cattle

By R. R. Miller



THE visitor at the large cattle markets of the United States 20 to 30 years ago viewed a much different type of cattle than the visitor sees today at the same yards. Steers came to market then four to six years old and even older. They were larger, rougher and represented much more feed and labor than the present day type. A visit today will still show thousands and thousands of narrow, thin scrub heaves, yet the general type and conformation has been improved. These cattle are found to be for the most part yearlings, two's and three's. From the standpoint of breeder, feeder, packer and consumer the earlier maturing, easier feeding type has proven the most profitable and most satisfactory.

The breeder and feeder desire steers which will produce the greatest amount of high quality beef from the least feed in the shortest possible time. The younger type of cattle do not tie up the capital for half the time that was formerly thought necessary to produce a marketable beef, and a quicker turnover of the working capital is thus possible. Higher priced farm lands, feeds and labor have made these changes necessary. No doubt the transition would have taken place without the influence of our livestock fairs and shows, but I think all will agree that the changes have been brought about much more quickly than they would otherwise. It was at the shows that the stockmen first saw what could be done in feeding younger cattle. Of course the change was gradual, but in the contests at the shows some exhibitor would present for approval a superior single steer or carload lot equal to other steers on the ground in every respect, yet much younger. A novice could readily see the advantage of this in the production of beef, since the production in a shorter time meant less feed, less expense and a quicker return.

There is an old saying that seeing is believing, and to see one has to

attend the stock shows. The pride of every man in every business is to do his work better than his neighbor, and when he has accomplished this the natural thing to do is to show his neighbor what he has done and compete with him. The livestock shows furnish a medium for this competition, hence the most modern methods are exhibited and explained to the public. As a result the fairs and shows have become the school for the breeder and feeder. When the best judges in the country of the best cattle in the country made younger animals the champions and grand champions, breaking time honored precedents, it caused the cattlemen to think along different lines and created new ideas.

The livestock shows are the show windows of the cattlemen. In order to demonstrate to the farmer and cattleman the merits of their breed and their own cattle in particular, breeders of pure bred cattle exhibit animals representative of their herds. In the average stockman the view of these cattle arouses a desire to use better sires and improve their herds. It gives him an opportunity to study the types of cattle produced by the different breeders and thus know where he may purchase the class and type of bulls he desires when in the market for such stock.

The show is the university of the cattle business. Each class and show ring is a lesson to every breeder. There the opportunity is given to study carefully the various types produced by the different breeders, compare the cattle of the same ages, etc., bred by the several exhibitors. The visitor is enabled to judge by comparison the strong points and weaknesses of the cattle exhibited, determine the ideals he thinks best and hear the opinions of the best judges.

From standpoint of exhibitor and the person in the market for high class stock, the show provides a meeting place and an opportunity for immediate and future business.

Los Angeles Livestock Show

The third annual Los Angeles Livestock Show will be staged at the state exposition grounds, October 2 to 10.

Speaking of the proposed show, C. R. Thomas, secretary of the Livestock Association, with offices in the chamber of commerce building, says: "It is the aim of the directors to make this the greatest stock show ever held in the West and to see that every visitor returns home enthusiastically endorsing the exhibition. These shows are cooperative enterprises designed to stimulate breeders to better efforts and to enlighten the public to the full meaning conveyed by the words 'pure bred.' The directors hope exhibitors and people at large will meet them in the same spirit and with equal enthusiasm in their efforts to produce more and better livestock."

"An attractive program ranging in variety from hundreds of exhibits of all breeds of livestock, poultry and pure blooded animals to running races, horse shows and timely events will satisfy and interest the most exacting fancier and casual spectator."

Upon the receipt by exhibitors of premium lists mailed this week offering \$50,000 in prize money, a flood of entries is expected from all Middle Western and Western points.

Substantial prizes are provided for every department and classification of beef cattle, dairy cattle, saddle horses, draft horses, mules, ponies, swine, goats, sheep and poultry. Entries for livestock close September 5; entries for poultry close September 15.

The roster of judges selected includes three of the best livestock experts in the country. F. W. Van Natta of Fowler, Indiana, who has judged at large livestock shows in the United States and Argentine, and is highly endorsed by the American Shorthorn Breeders Association, as well as the Aberdeen-Angus people, will judge all beef cattle. Prof. H. H. Kildee of Ames, Iowa, recommended by associations all over the country, will judge dairy cattle and swine. Prof. E. A.

Trowbridge of the Missouri agricultural college, Columbia, will judge all horses.

The officers of the Livestock Show are E. W. Murphy, president; Clinton E. Miller, first vice-president; Harold H. Braly, second vice-president; Albert M. Paul, treasurer, and C. R. Thomas, secretary-manager. The directors are J. C. Adams, Fred H. Bixby, Harold Braly, George M. Brown, Harry Chandler, Edward A. Dickson, T. H. Dudley, R. L. English, Herman J. Hauser, Charles H. Hill, H. A. Jastro, R. H. Jeffries, F. E. Lewis, George Lichtenberger, Clinton E. Miller, E. W. Murphy, Albert M. Paul, Walter M. Ross, Frank Simpson, Walter P. Story, Frank Wiggins, H. B. Woodhill and H. H. Whitten.

SPRAY COWS TO KILL FLIES

The general discontent and unrest among dairy cows now is due to the extremely hot weather and the common stable fly. Darkened barns, well shaded pastures and stabling of the cows during the heat of the day will help solve the heat problem. The flies may be controlled largely by cleaning the stables daily and sprinkling the manure with lime and spraying the cows with a fly repellent solution, according to R. D. Canan of the dairy extension staff of Purdue University.

"It is best to spray twice a day, just after the morning milking and immediately before the evening," said Mr. Canan. "However, if this cannot be done it is advisable to use only the evening spray, which also may be applied with a brush or sponge."

Any of the prepared solutions on the market are more or less effective, but because of their expense it frequently is better to make a solution at home. Kerosene emulsion, one of the cheapest and most effective, may be made by dissolving a pound of yellow soap in a gallon of soft water heated to boiling point. To this add two gallons of kerosene in a barrel

so that the solution may be stirred vigorously. Dilute the mixture with six gallons of water. This solution will spray 100 cows. For fewer cows use less material in proportion to the number of animals.

Another good spray recommended is a mixture of 4½ quarts of coal tar dip, 4½ quarts of fish oil, 3 quarts of kerosene, 3 quarts of whale oil, 1½ quarts of oil of tar and 3 pounds of laundry soap. The soap should be dissolved in water. Add the ingredients and bring the whole up to 30 gallons with lukewarm soft water. This entire amount can be prepared at one time and held over from one spraying to another while the kerosene emulsion must be used as it is made.

COMBAT WORMS AND DISEASE

Keep hogs thriving—strong, healthy hogs resist cholera. Quarantine every hog dead from cholera; the law requires it. Lice, worms and insanitary conditions weaken hogs and invite cholera.

Disinfect hog yards occasionally with unslaked lime; it's good cholera insurance.

Serum and sanitation make the best preparation for the warfare against hog cholera.

Keep cholera hogs and carcasses away from the stream and insist that your neighbor do the same.

The straw shed for hogs is almost sure to be either damp or dusty. Either condition invites disease.

Keep gunny sacks saturated with crude oil where hogs can rub against them. Raise more hogs and fewer lice.

Kill lice with crude or fuel oil sprinkled on the hogs at feeding time, applied to rubbing posts or used as a two inch layer on top of the water in a dipping tank.

Cough and pneumonia from dusty beds may incidentally be prevented if louse infested beds are oiled. Breathing dust may cause death from pneumonia and certainly renders hogs less resistant to cholera.

The Missouri college of agriculture has carefully tested each of these remedies and so have thousands of good farmers. They have stood the test, but are not substitutes for serum treatment, for they resist but do not entirely prevent cholera. These thrift producing measures would pay if cholera did not exist.

Sprinkle freshly slaked lime about one-sixteenth of an inch deep over the lots, sprinkling quarters once every month or two. At this rate a barrel will kill the germs on about 1,280 square feet of lot space. Combat worms by feeding a mixture of 4 parts of charcoal, 3 parts of copperas, 3 parts of common salt, 3 parts of Glauber salts, 3 parts sal soda, 1 part sulphur. Mix in 100 pound lots and keep in a dry place where the hogs can help themselves. It is a good "conditioner" and has been thoroughly tested.

ADVISES CORN BELT FARMERS TO BUY WESTERN HORSES

Charles Irvine, president of the American Association of Importers and Breeders of Belgian Draft Horses, is of the opinion that never has there been so great a scarcity of foals and yearlings in proportion to the total horse population of the United States. Mr. Irvine, accompanied by William Crownover, recently drove 1,500 miles on a round trip through Iowa and Minnesota. They, as experienced horsemen, observed the horses passed en route. During their entire trip they saw but nine foals and estimated more than 1,000 mares at work or in pasture without colts at side.

"The public generally doesn't realize the great scarcity of good horses," said Mr. Irvine. "Every effort must be made to increase production. I look for heavy breeding next year, but it will be four years before such stock can be put into the collar. Our only hope for an immediate supply is to purchase good young Western horses. Such horses, carrying three or four crosses of draft blood, will, if matured in the Corn Belt, develop to draft size. Their purchase will permit farmers to sell their mature, hardened horses, suitable for city use, before depreciation sets in, and realize a profit on the Western stock which they feed out to better maturity and weight while doing farm work."

A. P. Coon, Western representative for the Horse Association of America, confirms Mr. Irvine's report but adds that in some communities the farmers recognize the situation and are breeding two and three times as many mares as they did last year.

ADVANTAGE OF THE SILO

"There are many advantages in the use of the silo, but the principal one is that it provides the cheapest, easiest and most profitable means of storing a succulent feed for winter use," according to S. P. Clark, extension agronomist of the University of Arizona.

"It is also a means whereby a farmer can increase the number of cattle or sheep that he can carry on the farm. It usually takes the crop produced on an acre to feed a 1,000 pound animal through the winter. The same amount of land planted to corn or sorghum and stored in the silo will feed three animals for the same length of time, so that three times as many head of livestock may be kept on the farm if the fields are planted to silage crops rather than kept in pasture.

"There are a great many localities in Arizona, both under irrigation and dry farming, where farmers could spend the summer months in growing

a large amount of silage crops. In the fall they could buy the old cows or cheap canner stuff from the large cattle outfits, feed them silage for a few months and then turn them at a good profit.

"Owing to the nature and feeding value of silage, cheap or practically useless forage may be used to good advantage. Especially is this true where there is a large amount of straw to be utilized. An animal will consume much more straw when it is fed along with silage than when fed a ration of straw alone."

CREATING NEW MARKETS

The Dairyman's Problem

THE successful business takes advantage of every market presented for its products. Utilizing the formerly wasted by-products of manufacturing processes has invariably benefited both the producer and the consumer.

Three fundamental principles of business practice which have stood the test of long experience are—

Eliminate waste by utilizing the entire product.

Always seek new outlets for the product.

Create for every by-product a legitimate market.

Now how can these business principles be applied to dairying?

Government reports show that about 41 per cent. of the total production of milk in this country—or about thirty-four and one-half billion pounds—is devoted to butter-making. Of this amount only about four per cent., or three and one-third billion pounds, actually becomes butter. The balance—about thirty-one and one-third billion pounds—goes back to the dairyman as skimmed milk for which some other use must be found. There are no statistics to indicate what becomes of all the skimmed milk, but government figures show that only about two per cent. of this valuable food finds its way into the human dietary.

The Dairy Division of the Department of Agriculture, in a recent bulletin, says about skimmed milk:

"In the past, much skimmed milk has

been wasted, both by throwing it away and by feeding it to live-stock, when it could have been used to better advantage as human food. This does not mean that no skimmed milk should be fed to calves, hogs and chickens. Such a conclusion would be ridiculous, because our markets are not ready to absorb all of the skimmed milk produced, but human needs should be cared for first, and only the surplus skimmed milk should be fed to live-stock. Such a procedure is logical and is based upon economic grounds."

It is apparent that the dairyman is not putting all of his product to its most profitable use.

And this is due largely to the fact that because lacking a fat content skimmed milk does not appeal to the taste.

It is necessary, therefore, to find for skimmed milk a human use, and so improve the product that it will be best suited for that use.

By the addition of a fat, wholesome and nutritious, skimmed milk can be made very desirable for use in cooking and baking.

This fact is what first suggested HEBE, a product consisting of pure skimmed milk enriched with coconut fat. HEBE is the first real effort to develop a broad commercial outlet for skimmed milk as human food. It sells to a multitude of housewives who would not otherwise use milk for cooking at all, and thus it increases the general consumption of dairy products.

HEBE BENEFITS ENTIRE DAIRY INDUSTRY

Then the question arises—How will HEBE benefit the dairyman who is not near enough to a HEBE condensery to send his milk there? The answer is that while the HEBE industry is young and HEBE plants few in number, yet every can of HEBE sold is helping to develop this new market, and every bit of advertising put out by The Hebe Company is helping to educate the public to a greater use of dairy products. The ice-cream industry is a parallel case. Although many dairymen are not within shipping distance of an ice-cream factory, yet every milk producer is benefited by the increased demand caused by the use of nearly four billion pounds of milk

yearly by the ice-cream manufacturers.

HEBE is not intended to replace milk for direct feeding purposes. It is offered as an auxiliary to the family milk supply, for use in cooking and baking. It is honestly labeled as to contents and uses, and is advertised extensively.

Thus HEBE becomes an important factor in the solution of the dairyman's problem—"creating new markets." As an ally to the dairying industry it seeks to make for itself a new market, without interfering with other established markets, and in doing so it increases the general use of dairy products to the profit of the entire dairying industry.

You will be interested in reading our booklet, "The Missing Third." Ask us to send you a copy. There is no charge for this. Address 2873 Consumers Bldg., Chicago.

THE HEBE COMPANY

CHICAGO

SEATTLE

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
August 26, W. M. Bray, Sacramento.
September 23, Allana Farms, Dixon.

Herefords
November 4, Pacific Coast Hereford Breeders' Association, Sacramento.
November 5, J. H. Cazler & Sons, Sacramento.
November 6, H. M. Barngrover, Sacramento.

Shorthorns
September 30, Wilotta Ranch, Suisun.

Poland Chinas
August 21, Merced County Poland China Breeders' Association, Merced.
September 27, Hugh C. Shinn, A. J. Elliott and Alex D. McCarty, Tulare.
October 6, Kings Co. Poland China Breeders Assoc., Hanford.

Berkshires
August 14, Southwestern Berkshire Congress, D. J. Bastanchury Ranch, La Habra.

Reference was recently made to the purchase by the Finell Stock Farm Company, Galt, of the entire Kiesel herd of registered Herefords. In the purchase were included approximately 180 head. The new owners are not in a position to handle such a large herd and they plan to retain only about 35 head of breeding females. Most of the balance will be offered at public sale on a date to be announced later.

At the last meeting of the California Duroc-Jersey Breeders Association the

resignation of S. E. Whiting of Sacramento from the secretaryship was accepted. J. P. Walker of Visalia was elected to fill the vacancy. It was also decided to secure the services of a field man and steps are being taken to finance the new plan.

C. L. Hughes of the California Breeders Sales and Pedigree Company, Sacramento, has announced that on Thursday, September 30, he will sell the entire herd of registered Shorthorns owned by William Pierce, Suisun. This sale will mark the passing of one of the oldest established herds in California and is made neces-

sary through the plans of Mr. Pierce to extend his orchard interests. The sale will be held at the beautiful Wilotta Ranch near Suisun and will consist of around 75 females and 30 young bulls.

Considerable interest is being manifested over the forthcoming dispersal of the W. M. Bray herd of Holsteins, owing to the fact that the herd bull, Colony Zarilda Newman, is a son of Zarilda Clothilde 3d De Kol, the only cow in the world, aside from Tilly Alcartra, that has produced over 33,000 pounds of milk in a year. Forty-seven high class females are included in



A BARN BUILT OF DOORS

One of the barns at the Butte City Ranch, Butte City, is built entirely of doors. It was this barn that furnished the idea for the story, "The Farm With a Thousand Doors," by Freeman Tilden, and published in a recent issue of The Country Gentleman. This barn was but one of the many interesting features to be seen at Butte City Ranch during the annual sale, August 11.

the offering that will be sold at Sacramento, August 26.

An illustrated bulletin on "The Production of Good Milk and Cream," by C. F. Hoyt of the division of animal industry, recently went to press and will be issued within the coming three weeks.

M. Bassett and Sons, Hanford, will add a great deal to the strength of the Poland China division of the state fair next month. In addition to their regular showing of breeding stock, they will exhibit two carloads of fat barrows and also show in the other barrow classes, exhibiting about 100 head in all.

A. E. Harvey of Fairbanks Ranch, Redlands, reports the very recent sale of seven Hampshire fall gilts to Mr. Gibson at San Jacinto. These gilts are all daughters of the grand champion boar Harvey's Choice. Two are out of Calla of The Harvester blood lines, two others out of Josephine and another from Maid of Redlands. All are bred to the young boar Chong.

H. L. Graham of the Eastman Ranch, San Fernando, is busy putting the finish on the good junior yearling Buster Bob. This young boar is one of the largest framed boars of his age in the state and will furnish some very strong competition.

C. C. Ellis of Exeter mixed with the boys at the recent public sales of Durocs in the South, taking occasion to add a few things of merit to the home herd. From the Winsor Ranch sale Mr. Ellis secured the junior yearling daughter of Orion Sensation, Great Miss, and out of a Pathfinder dam, bred for a Winsor's Giant Orion litter, and also a yearling daughter of Pathfinder, Miss Minnie 3rd, carrying service to Great Sensation 3d. The boar now in service in the Ellis herd is Fannie's Orion King. Two of the leading sows in the Ellis herd are daughters of Freddie You'll Do and Critic B., the latter winning in class, and made grand champion at the local fairs. She has a fine futurity litter to be heard from this year.

Arrangements are being made to have all the boys and girls in the Stanislaus County calf club exhibit their calves at the state fair. This should attract quite a little attention as this is one of the best clubs in the state and has as high class calves as could be purchased. In fact, the average cost of the calves in this club was \$318, one of the highest priced lots ever used in the club work.

BUTTER, CHEESE AND ICE CREAM MAKERS ASSOCIATION

The membership of the California Butter, Cheese and Ice Cream Makers Association has increased from 12 to 50 since its formation, October, 1917. Considering the number of men engaged in dairy products manufacture in the state, we can readily conclude that the organization is making progress from the membership point of view. The status of our members among the creamery operators is further assurance that the organization is developing successfully.

The need of good men in the dairy plants has been felt for a long time, and that is mainly why the California Butter, Cheese and Ice Cream Makers Association is being developed. Possibly at some time we may become affiliated in a national group with other associations and thus promote our work on a larger scale.—J. C. Marquardt, Secretary-Treasurer.

SALE OF MILK GOATS

Dr. Burton C. Platt is introducing to the milk goat people the auction plan. He will offer at public auction high class Nubian milk goats and registered big type Poland China swine on Saturday, August 21, at his place near Eagle Rock Park. There will be on exhibition Nubian does noted for milk production, and some of the progeny of these does will go under the hammer. Some of the does to be offered are of same blood lines as Holly Lodge Shingle, at head of the Bonanza herd of 200. The Poland China young boars and gilts are of big type blood and show yard character.

A Sale of World's Record Blood



COLONY ZARILDA NEWMAN—By a son of Margie Newman and out of Zarilda Clothilde 3d De Kol, 33,153.6 lbs. milk and 1194.17 lbs. butter in one year.



LADY CORNUCOPIA MERCEDES—31.60 lbs. butter from 740.5 lbs. milk in 7 days at 4 yrs. She is by a son of Margie Newman.

A COMPLETE DISPERSAL

of the High Class Herd Owned by Wm. M. Bray, Klamath Falls, Ore.

State Fair Grounds, Sacramento, Cal.

Thursday, August 26

at 10 A.M.

50 Registered Holsteins 50

This is a herd of unusually good type, size, and production, backed by some of the world's record blood of the breed. All animals over six months old have passed two Federal tuberculin tests without a reactor. There has never been a case of abortion in the herd.

There are 47 females in the sale, only two of which are over 4 years old. They include a considerable number of granddaughters of the former world's record milk cow, Margie Newman, also granddaughters of King of the Pontiacs, Sir Ormsby Burke Segis, King Korndyke Sadie Vale, and other famous breeding and producing animals.

LADY CORNUCOPIA MERCEDES (cut shown above) will be sold, and note that she milked 740 lbs. in 7 days as a junior 4 year old, and made over 31 lbs. butter in 7 days. She is a beautiful individual and a real cow. She also has a beautiful helper calf in the sale. She is a 75% sister to Nena Newman Cornucopia, sold in the St. Paul National Sale for \$4100.

DAUGHTERS OF COLONY ZARILDA NEWMAN, the great herd sire pictured above.

DAUGHTERS OF KING MECHTHILDE NEWMAN, who is by a son of the former world's record milk cow Margie Newman, and is out of the 30 lb. \$4100 cow Nena Newman Cornucopia. One of these is out of a 31.96 lb. junior 4 year old that milked 602 lbs. in 7 days.

DAUGHTERS OF DUKE MECHTHILDE NEWMAN, son of Margie Newman.

DAUGHTERS OF ONONIS CORNUCOPIA JOHANNA LAD, a son of Margie Newman and sired by a son of Colantha Johanna Lad.

DAUGHTERS OF SIR COLANTHA PRILLY, who is by a son of Colantha Johanna Lad and out of a granddaughter of the great foundation cow Prilly.

DAUGHTERS OF A 32.57 POUND BULL whose sire is a full brother to King Korndyke Pontiac, sire of the \$12,000 King Korndyke Pontiac 20th, and grandsire of the \$41,000 King Korndyke Pontiac Acme.

DAUGHTERS OF A SIRE whose dam made 924 lbs. butter from over 22,000 lbs. milk in one year.

DAUGHTERS OF A SON OF MUTUAL FOBES LONGFIELD DE KOL and a 29 lb. cow whose sire is a full brother to Pietertje Maid Ormsby.

A GRANDDAUGHTER OF KING OF THE PONTIACS out of a 20 lb. daughter of Sir Ormsby Burke Segis, sire of Ormsby Segis Marie, who made a world's record for milk production as a 3 year old and made over 30,000 lbs. in one year as a 5 year old.

COLONY ZARILDA NEWMAN

When this bull enters the sale ring he will be the second son of a 33,000 pound cow ever offered, the other one being the son of Tilly Alcartra, sold at St. Paul. He is not only a son of Zarilda Clothilde 3d De Kol, the only cow except Tilly Alcartra to make over 33,000 lbs. milk in one year, but he is sired by the best proven son of Margie Newman, former world's record milk cow. He is just past 5 years old, is a splendid individual, a quick, sure breeder, and a real herd sire for someone with a high class herd.

It Will Be A Sale of Bargains

The owner of this herd, Mr. Wm. M. Bray, had planned to develop a very extensive breeding and dairy farm at Klamath Falls, in fact materials for the new buildings had already been delivered to his ranch, when a turn in his extensive lumber interests demanded his presence for a considerable time in another section of the country. It thus became necessary to dispose of his herd of Holsteins quickly, regardless of the fact that the season of the year, and the hurried preparations for sale are bound to result in lower prices than the real merit of the offering warrants.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

Catalog free on request. Write for one.

Management

California Breeders Sales and Pedigree Company

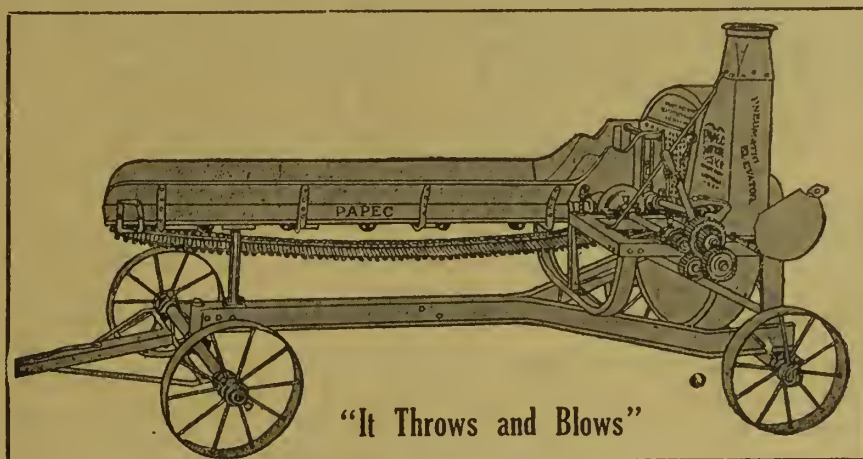
J. M. Henderson, Pres. C. L. Hughes, Sales Manager, Sacramento, California.

Auctioneer: Col. Ben A. Rhoades, Los Angeles.

Simplex Silos are Scientifically Correct

How Do You Decide

¶ ¶ *The Science of Psychology Reveals Some Interesting Facts* ¶ ¶



An act of decision consists of selecting one of two or more diverse things. The science of psychology explains that everyone decides by one of the five following methods:

1. By comparing each thing point for point and selecting the one with the greatest number of advantages.
2. By forcing the selection without making a comparison.
3. By selecting the thing that appeals to the emotion regardless of its advantages.
4. By leaving the selection to chance.
5. By acting upon advice.

No matter how you make decisions in your daily life, we want you to select your ensilage cutter by the first method. Note the solid semi-steel frame of the Papec—its perfect knife clearance—the minimum power upon which it operates (as low as 4 H. P.)—the six fans on the cutting wheel instead of three or four—its ability to cut from 3 to 10 tons of ensilage per hour and elevate it to the height of any silo at 600 R. P. M. without clogging the pipe.

Note these points. Find out more about the Papec by mailing the coupon. Get all the information you can on other cutters. Then compare the Papec feature for feature with other cutters, and select the one with the greatest number of advantages.

This is the fairest test we know. It has always resulted in a Papec sale. We, therefore, suggest it, confident you will decide upon a Papec.

Make this test at our exhibit at the California State Fair, Sacramento, September 4th to 12th.

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16 California St., San Francisco, Cal.

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Please send me folder describing Papec Ensilage Cutters; also information about Simplex Silos.

Name

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ALEX. D. McCARTY

RIVERINA FARMS

MODESTO, CAL.

Do You Know?

That The Westerner is a half brother to the sire of Caldwell's Big Bob, Grand Champion at the National Swine Show in 1917.

The Westerner heads a herd of sows that have no superior on the western coast.

Remember our big public sale Sept. 27th. It will be an event in Poland China circles.



Lendorris Liberty Bond, Skyrocket and Lendorris Liberator

Three good sons of three good sires are our herd boars. We will have a few representatives of our herd on exhibit at the state fair. When in need of choice Poland China breeding stock, write for our prices. You will find them very reasonable.

W. L. Haag and Son

Hanford, Cal.

THE SEQUOIAN

A yearling Poland China boar of strictly big type breeding that carries the size, stretch and quality so much desired by the breeder and feeder.

Write for prices and information on most anything in the way of breeding stock.

Z. M. Dickey

Dinuba, Cal.

McCune's Quality Herd

of BIG TYPE POLAND CHINAS

The home of Edith Rose, King's Massive Orange and many other noted individuals. A McCune bred Poland China is backed by many generations of the best breeding.

H. D. McCUNE,

Lemoore, Calif.

King's Big Bone Leader

A Grand Champion, and Giant Bob 2nd, a son of last year's Grand Champion, are my herd boars. They are siring a high class of Poland Chinas. Write for prices and information.

Les McCracken

Ripon, Cal.

Trewhitt's Big Type Polands

Are the result of careful mating and selection. Size and feeding quality have always been essential features in this herd. Write for prices and information. I can interest you.

W. D. Trewhitt

Hanford, Cal.

For easy feeding, early maturing Poland Chinas,

The Get of Model Big Fellow

The Reserve Grand Champion of the last state fair, the strongest Poland show ever held in the state, are the kind to buy. Your correspondence solicited.

J. F. McSwain

Merced, Cal.

The Forrestview Herd of Polands

I am now located on my new place near Chico, where I am better prepared than ever to care for my customers. My intention is to raise more and better Poland Chinas in the future.

J. H. Cook

Route 4, Chico, Cal.

Johnson's Defender Jr.

Heads my herd of carefully selected sows. He should be seen to be appreciated. I can spare a few choice females or young stock either sired by or mated to this good boar. You will be pleased with any purchase made from me.

H. C. WITHEROW

Live Oak, Cal.

Sunny Side Farm

where efficiency is our watchword and the production of extra heavy milking Holsteins and big type Poland Chinas is our specialty. A few choice animals of either breed or sex for sale at all times at reasonable figures. Write for information.

R. F. Guerin

Visalia, Cal.

Value of Showing Livestock

"Undoubtedly showing livestock at the county fair and later at the state fair is the best possible eye opener for the young breeder who hopes eventually to breed high class registered livestock," says C. M. Hubbard of the Washington state college. "Exhibiting stock helps him in many ways to see where the animals he exhibits are weak and wherein they are strong. Perhaps he has not placed enough emphasis on bone, size, scale in his beef cattle breeding; or possibly he has not realized that the fleece of the ram he is using has a liberal content of black fibers and that all the lambs he is siring are stamped with the same defect; or it may be breed type wherein his stock is weak. If the amateur exhibitor is not prejudiced in favor of his own stock, if he has the gift of being able to 'see his stock as others see it' he will soon be making the veterans hustle for their share of the trade in breeding stock and of prizes in the show ring.

"Too often the young breeder does not furnish his young stock with sufficient pasture, sufficient feed to grow them out properly. He is afraid of the feed pail and if the summer is drier than usual his stock loses in weight and condition when it should be gaining. When this man takes his exhibit to the fair he immediately notices that the animals his stock competes with are very much the larger, deeper bodied and better proportioned. He goes home with the third and fourth ribbons if there are that many places. If this young breeder has good red blood in his veins he will grit his teeth and say to himself: 'Wait until next year', and the following year will find his entries well up in the money. If he has not made the discovery that a good proportion of breeding may be put down the throats of his stock in the form of feed his entries will be at the foot of the class where they were the year before. In the latter case you will hear him telling the fair visitors that 'feed was mighty scarce—did not have any rain since the middle of June—did not have time to fit them,' etc. There is no hope for this type of stockman in the purebred livestock game in breeding and developing superior seed stock. If nature does provide sufficient pasture the successful livestock breeder finds that it is frequently necessary to feed a supplemental ration; if nature does not do her part he finds that it is necessary to feed more.

"The livestock show often causes the showman to realize that he is using too ordinary a sire. He finds that if he expects to breed as good stock as the other fellow that his sire must possess better breed type, must be masculine, and possess style and carriage as well as correct conformation and good size for the breed. In other words he realizes that 'something can not be taken from nothing', that good stock can not be developed from mediocre blood, and he invests the necessary dollars in a real herd or flock header.

"General care and management will be given more consideration after his first show yard experience. If he is breeding swine he will have discovered that if they are to win they must stand up on their toes, and that in order to stand up on their toes their feet must be trimmed from time to time, and that exercise is absolutely essential to the development of strong pasterns; if it is sheep he makes the remarkable discovery that the judge, after extricating the briars and thistles from his fingers, does not come back to his sheep for more. In other words, from show yard experience, from talking with older exhibitors, and in observing the type of animals which win and how they are fitted, he soon comes to the conclusion that better blood, proper feeds (also feeding methods), and good care and management are the limiting factors behind the show yard winners.

"Often the young breeder has better stock than he realizes, stock which is good enough to stand well up in the money if he can be induced to exhibit them in their best clothes. The beginner should never be afraid of being beaten as, often enough, a good sound beating is the best thing which could happen to him if he takes it in the

right spirit and has the 'come back' spirit.

"Showing livestock at the fairs is a splendid method of placing the herd before the public through the farm and livestock papers. Winning prizes gives the breeder a reputation, and, if he is raising a breed for which there is a good demand he soon discovers that he can sell his surplus stock at higher figures than he could before he entered the show ring.

"Advertise the herd or flock in the farm papers, stating the fairs where the herd will be exhibited. Remember that publicity sells the surplus stock and lack of it causes the breeder to carry extra bulls, boars and rams through the coming winter or else sell them for only a fraction of what they are really worth.

"Last, but not least, the amateur showman learns that it pays to be a game sport in the show yard. Winning, he does not 'crow' over it, and losing, he does not run down the other man's stock and accuse the judge of being crooked. He grins and bears defeat even if it is hard work to wrinkle up his face—and he is not a quitter. The world has no use for the latter type."

SUGGEST SYSTEM FOR MAKING PORK PRODUCTION PROFITABLE

The farmer who provides pasture for his hogs whenever possible is the one who makes the production of pork most profitable, says the United States department of agriculture in Farmers' Bulletin 951, "Hog Pastures for the Southern States." In epitome, the advice given in the bulletin is:

Green herbage is essential to the economical production of pork.

A permanent pasture supplemented with quick growing, heavy yielding, temporary forage crops is most satisfactory.

Alfalfa, where it can be grown, is undoubtedly the best forage crop for hogs.

On an average one acre of permanent pasture should be kept for each brood sow.

Some of the heavy yielding, quick growing forage crops will add much feed to the quantity produced by a permanent pasture.

There should be mature crops, such as corn, soy beans, peanuts, or velvet beans, for finishing the hogs in the fall. Oats, rye and wheat give satisfactory winter grazing.

Green forage alone is little better than a maintenance ration. If rapid gains are desired, the hogs should have a liberal allowance of grain. The rule should be "All the grain they will eat without waste."

Growing forage crops and "grazing them off" on the land is an efficient method of improving soils depleted in organic matter.

The exercise obtained in grazing exerts a beneficial influence on the health of hogs.

The various forage crops for hogs, each discussed in detail, are corn, sorghum, winter grains, alfalfa, black medic and hop clover, red clover, crimson clover, soy beans, velvet beans, cowpeas, peanuts, chufas, sweet potatoes, mangels and rape.

Suggested cropping systems are given, but the statement is made that it is impossible to plan a succession of crops that will be satisfactory for any large number of farms and that each farmer must plan his own system according to his conditions of climate, fertility and layout of fields.

EASTERN HORSE DEALERS BEHIND ON ORDERS

Increased production of good horses is the great need at present. Fiss, Doerr & Carroll Horse Company, New York, one of the largest firms dealing in horses in the East, states that it has sold more draft horses for city use in the first six months of 1920 than in any other similar period for many years, and could have disposed of many more had the supply been available. A. M. Ernst, general manager of the company, when interviewed on Friday, July 16, said of the situation in the East:

"We have enjoyed an unusually good trade this year. City users of trans-

Facts in BLACK & WHITE

The Dairy Division at Washington Says:

"As the production of a cow is doubled profits increase three times. As production is trebled profits increase six times."

"The average cow in the United States yields 1823 quarts of milk yielding 207 pounds of butter a year. Average profit per cow \$20 over cost of feed."

The average production of all purebred Holsteins that have been officially tested for a year is 629 pounds of butter from more than 70000 quarts of milk.

In yielding more than three times as much as the scrub cow, the purebred Holstein yields six times the profits.

As production is tripled profits increase six times.

Send for free illustrated booklets.
THE HOLSTEIN-FRIESIAN ASSOCIATION
120 Hudson Street
Brattleboro, Vermont.

Lambert's
HEALTH FOR CATTLE

REMEDIES FOR

Cow Cleaning,
Breeding and Abortion,
Scouring Calves,
Hog Cholera

An Insect Destroyer
A Poultry Food

LAMBERT STOCK
REMEDIES COMPANY

A. M. Bibens, H. V. Bridgeford,
President Vice President
Factory: Modesto, Cal.
Mail Orders Promptly Filled

The Leading
Live Stock
Auctioneers

Col. Ben A. Rhoades
Harold B. Rhoades

Sales of pure bred and grade cattle
and hogs conducted in California
and adjoining states. References:
The leading breeders in the state.
Write or wire for dates and terms.

Rhoades & Rhoades
1501-3-5 South Main St.
Los Angeles, Calif.

ABSORBINE
TRADE MARK REG. U. S. PAT. OFF.

Reduces Strained, Puffy Ankles,
Lymphangitis, Poll Evil, Fistula,
Boils, Swellings; Stops Lameness
and allays pain. Heals Sores, Cuts,
Bruises, Boot Chafes. It is a
SAFE ANTISEPTIC AND GERMICIDE

Does not blister or remove the
hair and horse can be worked. Pleasant to use.
\$2.50 a bottle, delivered. Describe your case
for special instructions and Book 5 R free.
ABSORBINE, JR., antiseptic liniment for mankind, re-
duces Strains, Painful, Knotted, Swollen Veins. Con-
centrated—only a few drops required at an application. Price
\$1.25 per bottle at dealer or delivered.
W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

Vaughn's Jones

Is a boar that is siring a high class of
POLAND CHINAS

good enough for the most discriminating
buyer. Come and investigate; can show
you.

A. J. Van Cleef, Riverdale, Cal.

HAMPSHIRE SWINE

Pure Breds—Both Sexes

FOR SALE

Fairview Ranch

L. L. Beal, Proprietor Red Bluff, Cal.

The advertisers in the California Cultivator are
known to be reliable and we recommend them to our
many subscribers.

portation are swinging back to big
draft horses as the cheapest, most re-
liable and most efficient motive power
for all heavy transportation within the
working radius of a horse, despite the
increase in the cost of feed, which has
been formidable during the last year.

"City users are also coming to real-
ize that for all hauls, no matter what
distance, where frequent stops are in-
volved, as in delivering groceries, ice,
milk or other supplies furnished to
customers on regular routes, horses
are practical economical power. The
trade is gaining. Our great problem
today is to supply that trade. Good
horses are becoming increasingly
scarce and prices higher than we have
ever known. Heavy draft teams have
been bringing from \$800 to \$1,200 per
pair, but if they go much higher the
balance of favor will be liable to swing
over to motor trucks. There is a good
profit to farmers in raising draft geld-
ings to bring \$325 to \$400 on the farm,
yet we cannot get enough of that
type."

HOW GREAT HOLSTEINS ARE PRODUCED

Tilly Alcartra, the most talked of
cow in the world, whose last calf sold
for \$50,000 at the St. Paul National
Guaranty Sale, has been bred to Sir
Pietertje Ormsby Mercedes 43d, senior
herd sire of Toyon Farm Association.

Tilly's production for her first five
lactations is 4,819.11 pounds of butter
from 123,351.1 pounds of milk. For
seven years her production is 7,076.51
pounds of butter from 180,460.2 pounds
of milk. Aaggie Wayne Peep, the
dam of Sir Pietertje Ormsby Merce-
des 43d, for her first five lactations
produced 4,992.02 pounds of butter
from 110,706.5 pounds of milk. The
choice of Sir Pietertje Ormsby Merce-
des 43d will thus give the coming
calf for its two nearest dams the
world's two greatest lifetime pro-
ducers.

Miss Valley Mead De Kol Walker,
who holds the world's record in the
eight months after calving division as
a junior three year old, is also to be
bred to Sir Pietertje Ormsby Merce-
des 43d and accompanied Tilly on
her journey. She is the dam of the
\$12,000 bull, King Korndyke Pontiac
20th, and granddam of King Korndyke
Acme, the bull which recently sold
for \$41,000 at the National Guaranty
Sale at St. Paul.

VALUE OF A PURE BRED BULL

In a recent address to an assem-
blage of cattlemen, Thos. E. Wilson,
Chicago packer, cited a practical dem-
onstration of the value of pure bred
bulls in the production of market beef.

He stated that a few years ago 90
pure bred Hereford bulls were pur-
chased in the United States by a large
Brazilian cattle company and exported
to that country, and that a short
time ago the progeny of these bulls
were marketed in England along with
some native cattle of the same age
and raised under the same conditions.
The cross resulting from the use of
Hereford bulls on the native cows
brought two cents per pound more on
the English market than the native
cattle, the difference amounting to \$12
per head. Granting that each bull
sired 40 calves each year, the increase
on the value of their calves would be
\$480. The price paid for the bulls was
not stated, but the first crop of calves
should have paid for the bulls and the
additional value in succeeding crops
sired by those bulls would be clear
profit. What has been demonstrated
in Brazil is being demonstrated in our
own country every day, yet we find
thousands of scrub sires being used all
over the United States.

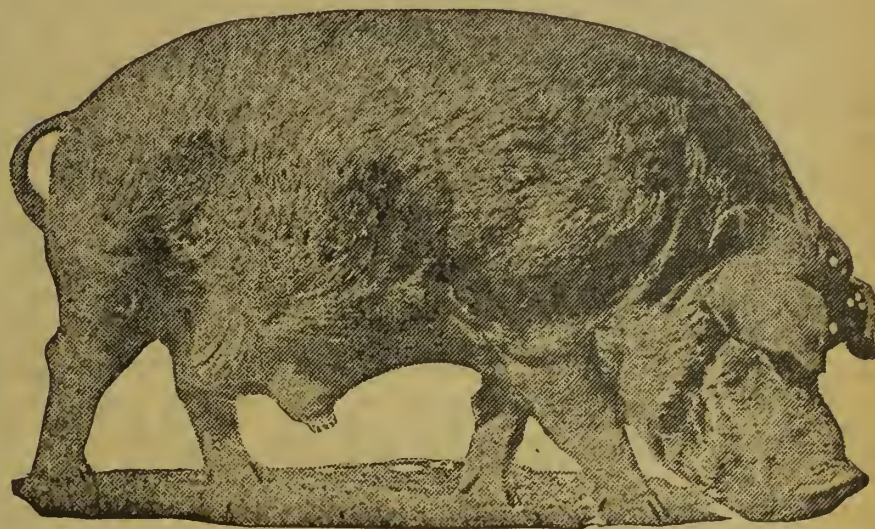
PIGS AND MUDHOLES

The mudholes common in many
barnyards are the sources of much
trouble to pigs. Sore mouth, eczema
and other skin diseases result from
wallowing in filth. And then when
the wallows dry up and become dusty
the dust helps to spread lung worms
and predisposes the animals to coughs,
colds and bronchial affections.

Germs of all kinds thrive in filth,
and there is no better place for them
to develop than in the insanitary barn
lot where the leachings from the ma-
nure heap provide a wallow for the
pigs. Clean barnyards and hog lots
will mean better health in the swine
herd. Farmers should have fewer
mudholes and more pigs. The latter
are more profitable.—Indiana Farmer.

Diamond Bar Durocs

Double Your Dollars



ACE OF PATHFINDERS

This great boar headed the World's Grand Champion Duroc herd at the
1919 National Swine Show; also the first prize get of sire herd. All animals
in both herds are owned by us.

He was Grand Champion at the Los Angeles Livestock Show and stood
second to the world's grand champion at the National.

He is by Pathfinder, out of Hiawatha, by Crimson Prince, and, besides
his show ring record, he is considered one of the greatest sires of the breed.

Buy These Breed Improvers

Now that we have decided not to hold a summer sale, we are ready
to offer at private sale the greatest array of Duroc breeding and indi-
viduality ever put before California buyers. We have culled closer
than ever this season, and every animal not fully up to the high
Diamond Bar standard has been sent to the fattening pen. And those
that remain—say, man, they are real ones!

SENSATION STRAIN BOARS AT SPECIAL PRICES

We have four or five January
yearling boars of the Sensation
strain ready for service which
we are offering at especially at-
tractive prices.

No matter whether you want a foundation
herd, new blood for an established herd, or
simply a boar to breed up a grade herd, we can
satisfy you from the world's largest Duroc herd.
While quality is high, our prices are reasonable,
and every animal is sold under a guarantee of
complete satisfaction. Call or write.

Diamond Bar Ranch

Fred Lewis
Owner and Manager

R. K. Walker
Hog Department

SPADRA

Los Angeles Co.

Cal.



Strong oval backs, shapely feet and legs, active disposition, and thoroughly big
type in blood and character—these are the bargains we are offering in big yearling
bred sows. Come and see Superba type in these sows, and see our big yearling boar
Fortuna Bob.

W. H. ROUGH, Arlington, Cal.

Victory Bob, the Greatest Son

of the grand champion, Giant Bob, heads the Sunland herd of Poland Chinas.
I will be glad to meet you and show you Victory Bob at Sacramento, next
month.

H. A. Johansen

Fresno, Cal.

The Eastman Ranch Poland Herd

Herd headed by Regulator, by Liberator and Buster Bob, by Belmont Buster.
See Buster Bob at Sacramento. A few young animals for sale at all times.
Satisfaction assured.

H. L. Graham, Mgr.

San Fernando, Cal.

At the bottom of your letter to advertisers just say "California Cultivator"
and prompt reply is assured.

Use Hereford Bulls

The Hereford is the range bull without a peer.

My Herefords have size, bone, constitution and are notably thick fleshed. Visit my ranch and get my prices. Send for free literature.

Mission Hereford Farm

John A. Bunting
Mission San Jose Cal.

DIAMOND HEREFORDS

A few choice young bulls, Big, heavy-boned husky fellows sired by DON PERFECT 2nd, one of the best sires in the West. Priced right and guaranteed.

H. H. Gable Esparto, Cal.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

BETTER STATE FAIR

(Continued from Page 179.)

each county to play a part. Not all have reserved space, but at least 30, from San Diego to Shasta, are installing exhibits, and the unusually generous prize list is stimulating the keenest competition. These exhibits will be housed in the main building. It is quite certain that these exhibits alone are worth a trip to the fair—certainly one will know a lot more about this wonderful state after a trip through the displays.

Farmers interested in power machinery of any kind will find much to interest and instruct in the "Power on the Farm" department. This section will occupy an eight acre tract covered with the largest tents made and

will contain everything manufactured in the way of power machinery.

It is the intention of the officials to make this one of the most useful departments of the big fair, and they have placed it in charge of Professor L. J. Fletcher, instructor of the engineering and operating courses at Davis. Professor Fletcher will be assisted by a corps of competent assistants and will test and demonstrate every piece of machinery exhibited.

The display of agricultural products promises to be equal to that of any former year, despite the fact that the present season has not been entirely favorable. The University of California will again participate in a large way. The university exhibits will be found in the university building in the south end of the grounds.

The fair management is especially enthusiastic over the prospects for a notable livestock show. Livestock must essentially dominate any fair and during the last five years the development of the livestock division at Sacramento has been outstanding. Last year, despite such a handicap as the railroad strike, a new record

was made in both numbers and quality. This year the early entries total more than the finals of 1919. This fact is remarkable under present conditions, but can be explained by the large number of breeders who entered the pure bred ranks last year.

The beef cattle division shows the most important increase and is a fair measure by which to gauge the growth of that business during the past year. Last year five Shorthorn herds were in competition; this year twice as many herds will enter with more than twice as many entries.

Blackhawk Ranch, Diablo, will make its debut with Shorthorns, and the following older herds will be on hand: Estate of Thos. B. Dibblee, Lompoc; Thornton S. Glide, Davis; William Bond, Newark; Ormondale Ranch, Redwood City; H. L. & E. L. Murphy, Perkins; Pacheco Cattle Company, Hollister, and W. M. Carruthers, Live Oak. In addition to the above, it is known that other herds plan to exhibit.

It will be remembered that Little Sweetheart, the sensational 1919 international grand champion, owned by T. S. Glide, was uncovered at Sacramento. Visitors will have an opportunity to see her again this year.

The Hereford division shows an even greater increase over former years. Seven breeders have entered over 100 head. Romie C. Jacks of Monterey, who assembled a herd last fall, will make his first show, and it is probable that the grand champion female at the 1919 Denver show will be in his herd. J. H. Cazier & Sons of Wells, Nevada, will head their herd with Beau Blanchard 76th, the highest priced Hereford bull owned in the West. Other exhibitors include H. M. Barngrover, Santa Clara; John A. Bunting, Mission San Jose; H. H. Gable, Esparto; Chas. Rule, Duncan's Mills; D. H. Ogden, Alpine, and G. W. Emmons, Danville. This will be Ogden's first showing at Sacramento. Emmons will show Polled Herefords. The Hereford and Shorthorn classes will be judged by Dr. C. M. McCampbell of the Kansas state agricultural college.

According to Secretary Paine there will be a fair entry list in the single fat classes and also in the carload classes.

The dairy cattle classes promise to be up to other years, which is another way of saying the show at Sacramento will be the equal of any show in the country in point of quality. Several of the "old timers" will be missed, but the entry list discloses an unusual number of new names.

As usual, the Holstein division shows the heaviest entries, almost twice as many breeders exhibiting as in 1919. It is known that the quality will be high. Special interest attaches to the exhibit from Santa Anita Ranch. Santa Anita, for the reason that King Korndyke Pontiac Acme, the young bull that Mrs. Baldwin recently purchased from A. W. Morris & Sons, Woodland, for \$41,000, the highest price paid for a bull of any breed owned in California, has been entered. Other Holstein entries include: Dan Beeman, Woodland; Bridgford Holstein Company, Patterson; R. C. Gruhlke, Dixon; Anderson & Fogarty, Sacramento; Del Paso Heights Stock and Swine Breeders Association; H. E. Cornwell, Modesto; Fred Cornwell, Modesto; Linnie Cornwell, Modesto; M. Azivedo, Patterson; Six Brothers Dairy, Turlock; George Jr. Republic, Chico; E. D. Barry, Daggett; J. P. Phillips, Dixon; Geo. M. York, Modesto; Everett W. Fox, Modesto; Wilhelmina Fox, Modesto, and Jane Garden Farms, Sacramento. John L. Smith of Spokane, Washington, will judge Holsteins.

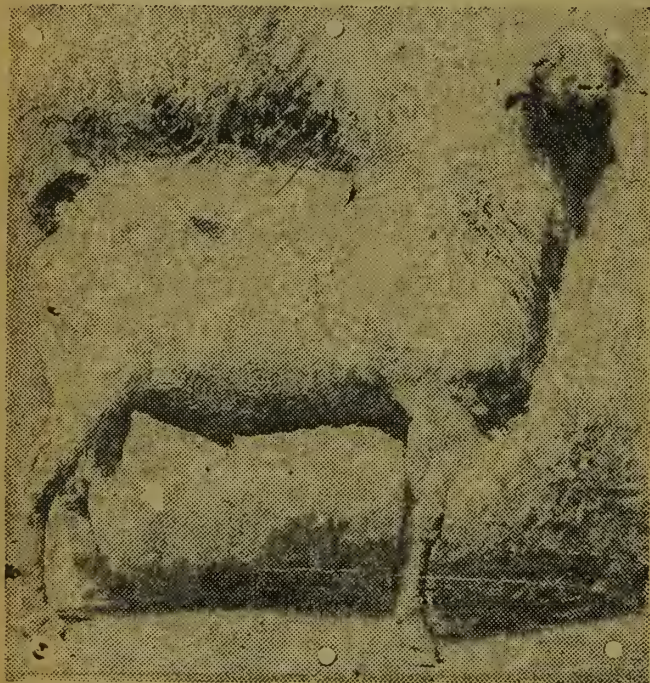
The Jersey show will have a heavier entry list than last year, about 80 head being entered. Nearly all the well known herds of the state will be represented and several new breeders are planning to make their initial show. Those who have entered are: J. E. Thorp, Lockford; Guy H. Miller, Modesto; J. B. Thorp, Lockford; M. Fortini, Orland; S. F. Williams, Chico; J. H. Sawyer, Galt; H. V. Traynham, Davis; C. E. Barrows, Orland, and B. A. Rider, Orland.

Three new Guernsey herds will be at the state fair to contest with the old established herd of A. B. Humphrey of Escalon; Hollow Hill Farm, Colton; J. Francis O'Connor, Santa

(Continued on Page 203.)

BIG BONANZA GOATRY SALE

To Be Conducted by Rhoades & Rhoades



Holly Lodge Shingle
(Nubian)

Bred by the late Baroness Burdett Coutts of Holly Lodge, England. "Holly" is the great progenitor of the breed in America. He heads Bonanza Goatry herd.

Third Annual Sale Dairy Goats Saturday, August 21st, 10.00 A.M.

BONANZA GOATRY offers a selection of high-grade Nubian does and bucks from its herd of 200. This is the largest herd of Nubians in America. It is headed by Holly Lodge Shingle, the unequaled producer of milkers of the sweetest and richest milk known. "Holly's" daughters in twenty States and in Canada have earned for their owners from \$260 to \$350 a season from sales of milk at 30 cents a quart. Does of the same blood lines will be sold. Stud fee of "Holly," \$25.00.

SWINE—Boars and glits from the three Poland Chinas on which I was awarded a first, second, two champions and grand champion premiums, 1919. See Barley Boy 2nd, you will get an eye full. His service fee is \$25.00. Bonanza Model, a youngster destined to win a national championship. Fee for this season, \$15.00.

BELGIAN HARES—Bucks and does of this, the classiest and cheapest meat producers known the world over. I have the true English Rufus Red—their equal rarely seen on this continent.

SORGHUM SYRUP PLANT—It is nearly new, used but a month. Capacity 300 gallons per day.

HORSES—A good ranch team.

WAGONS—Light spring, medium and heavy ranch type.

PLOW—3-shear orchard, mower, etc.

AUTO—Ford Runabout. Every internal piece new last April. A wonderfully efficient machine. Timken roller bearings in all wheels, forced oiling system, Zenith carburetor.

GOAT MANURE—One hundred and fifty tons, half rotted. The best lawn and farm crop plant food known.

LOCATION—On Eagle Rock Ave., near entrance to Eagle Rock Park. Garvanza car to end of line, walk two blocks.

At 9 A. M. the herd will be displayed in groups and photographed. Come early to see a goat show. Two of the best Nubian does on this continent, one with a daily average for a month of 10½ lbs. milk and first of the Nubians to enter the Advanced Registry. Watch the Goat Department of "The Times" for further notice.

BURTON C. PLATT

Send for folder of extended description of my Nubians and other property to be sold

AUCTION

500 Holstein Cows and Heifers 500

2 Registered Holstein Bulls

All Dairy Equipment

On the Los Posos Land Co.'s Ranch,
2¾ miles west and ¼ mile south of

CORCORAN

Wednesday and Thursday, August 18th and 19th

Commencing Promptly at 9 A.M.

This is undoubtedly one of the choicest herds of grade Holsteins ever sold at public auction on the Pacific Coast. The owners have been carefully breeding and culling the herd for several years, using nothing but the best registered Holstein sires, have been testing the cows through the Kings County Farm Bureau Cow Testing Association for the last two years and we believe that buyers will find it to be one of the best producing herds in the State. The stock are all large, fine, well marked individuals with splendid udders, the kind for the new beginner for a foundation herd as well as for the older dairyman to improve his herd with.

Owing to the fact that the owners are putting their land into cotton and plowing up their alfalfa, they have decided to disperse this splendid herd at public sale and it offers an opportunity that no dairyman in the state should overlook.

We also wish to emphasize the fact that the young stock is from these high class cows and by registered sires of royal breeding. They are one of the best developed and best marked lot of heifers we have ever seen on the Coast, they are the making of unusually good producing cows. The heifers (and steers) will be sold in carload lots or in other lots to suit purchasers. NOTE:—All heifers, steers and 50 head of cows will be sold Wednesday, the 18th.

A representative from the Kings County Farm Bureau will be present to advise buyers of the butterfat production of the cows.

Included in the offering are 200 HEAD OF HOLSTEIN COWS, 70 head of two-year-old heifers, 44 head of yearling heifers, 60 head of heifers under one year old, 136 head of steers, one, two and three years old.

Prospective purchasers are invited to visit the ranch prior to sale and see the cows milked.

EASY TERMS: \$100 and under, cash; over \$100, one-fourth cash, balance in 4 and 8 months with note and approved security. Buyers from a distance who wish credit will be required to furnish satisfactory bank references.

Autos will meet morning trains at Corcoran both ways.

LOS POSOS LAND CO., Owners

Rhoades & Rhoades, Auctioneers

1501-3-5 South Main St.

Los Angeles, Cal.

HEREFORD MEN TO STAGE A BIG EVENT

At a meeting of the board of directors of the Pacific Coast Hereford Cattle Breeders Association at Sacramento last week plans were made for holding a series of three sales at Sacramento, November 4, 5 and 6. It is expected that over 150 head will be exposed at auction during the three

days and that it will prove the largest single event in the beef cattle industry of the state. The association will sell about 40 head of selected females and bulls from the leading Western herds. An effort is being made to attract a consignment superior to the one sold at the San Francisco show last fall for an average of \$711. The following day J. H. Cazier and Sons of Wells,

Nevada, will sell 55 head of very superior cows, heifers and bulls. The Cazier sale is certain to attract wide attention owing to the high quality of their productions. The sale will feature the blood of Harris Standard 2d and the \$10,000 Beau Blanchard 76th. The third sale will consist of 45 head from the well known herd of H. M. Barngrover, Santa Clara.

The market for Herefords has been very active the last three years and it is felt that cattlemen will welcome such an unusual opportunity as the three sales will afford. All the sales will be managed by C. L. Hughes of the California Breeders Sales and Pedigree Company, Sacramento, and Col. Ben A. Rhoades of Los Angeles will be the auctioneer. The sales will be held at the state fair grounds.

NEVADA HEREFORD RANCH

Over 200 Choice Breeding Cows in Herd

Herd Bulls in Service:
Harris Standard 2nd
(425030)
Beau Blanchard 76th
(685487)
Abe Mischief (9769262)
Bocaldo 21st (720836)

A
100 Per Cent
Healthy Herd

Former Herd Bulls
Used in Herd:
Debonair 64th
(616840)
McCord (279679)
Precursor
(66671)

We have raised cattle thirty years, and bred registered Herefords sixteen years. We have never had a single animal rejected by the general health or tuberculosis test. Last June we applied for the federal accredited herd list and our entire registered herd, of 327 head, passed the federal test without a reactor. Statistics show that Herefords are practically free from tuberculosis and our record proves our herd equal to any.

A Richly Bred Herd

from the best producing families in the Hereford breed; to keep in the herd only animals that are good, regular producers.

Will Sell 55
Choice Herefords
at Public Auction
November 5

ARD 76th, eight young cows with calves at foot and rebred, ten select yearling heifers and four bulls.

Watch this space for further particulars regarding our breeding herd and cattle to be sold. Study the pedigrees of our herd bulls. We believe you will like them.

We also have a nice lot of cows and heifers for sale here at the ranch and forty good range or ranch bulls.

Correspondence and inspection invited.

Jno. H. Cazier & Sons Co. Dept. C
Wells, Nevada
Otis Cordell, Herdsman

NURSES WANTED

FOR

My Polled Hereford Babies

WANTED

Two carloads of Holstein Cows. These need not be registered, but they must be State Tuberculin Tested. Please quote price, point of shipment and where stock can be seen.

Diablo Stock Farm

Danville, California

Our Polled Herefords are strong in Anxiety and Disturber blood. We just sold R. Cliff Durant 23 head for \$25,000.00. They will be shown at Sacramento, and the Anxiety-Disturber Bull with two Cows will go to the International for the First Honors.

G. W. Emmons
Proprietor

E. F. Petersen
Superintendent

The Stanislaus County Holstein Breeders Association Sale

45 SUPERIOR HOLSTEINS

Patterson Fair Grounds
Saturday, August 21

The offering consists of 25 bred cows and heifers, 8 bulls and 12 open heifers, consigned by the following:

A. M. Bibens
H. E. Cornwell
R. L. Holmes
J. A. Pelanda
Jas. Gibson
Chas. Coffee
Jas. D. High

Freeman & Edwards
John Saixer
R. H. Davis
D. and H. Rowles
E. Peterposten
Bridgeford Holstein Co.
W. H. Adams
M. J. Ruddy

The cattle are a strictly high class lot selected for utility, quality and breeding by the sales committee consisting of Messrs. Bibens, Cornwell and Holmes. The cattle are all tuberculin tested and sold under the strongest guarantee possible.

For catalog and information write

E. M. Morrow, Sec., Modesto, Cal.

Auctioneers:

Geo. A. Gue C. N. Clark

King Korndyke Pontiac Mead

Average of his Dam and Sire's Dam (Both Former World Record Holders)

At Average Age of 4 yrs. 2 mo. 10 dys.	1062.64 lb. Butter
Semi-Official, 365 Days	21173.75 lb. Milk
Official Test, 7 Days	31.91 lb. Butter
	615.60 lb. Milk

His Sire—King Korndyke Pontiac 20th
His Dam—De Kol of Valley Mead 2d

Four of his seven nearest Dams have held World's Records

LOS ANGELES COUNTY FARM Hondo, Cal.
3 miles south of Downey on Downey-Long Beach Boulevard

Berylwood Holsteins and Durocs

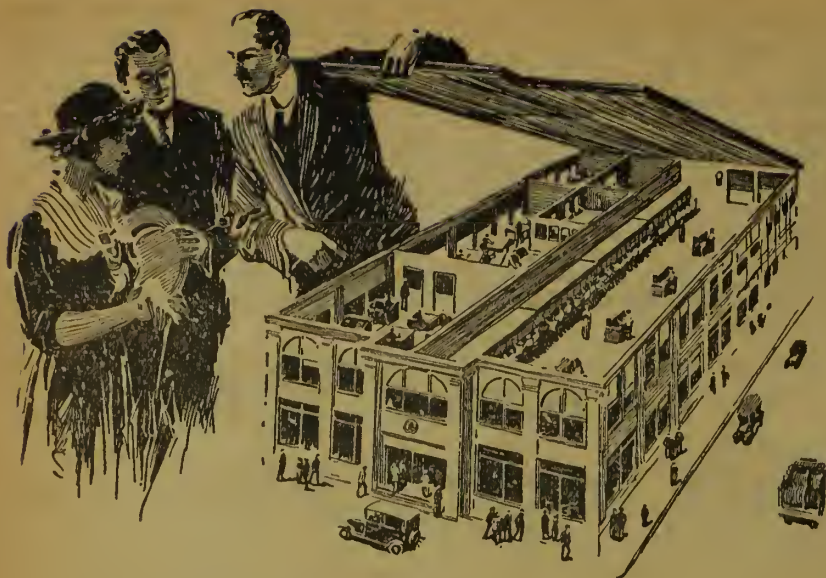
At head of our herd of high-testing Holsteins is the great young sire King Segis Pauline Alcartra 282440. We are now able to offer his young bulls from very select dams.

Rancho's King's Col. Orion 286401 is our big-type boar in service. He is sire of all our spring litters. We also have now to offer some extra good fall boars of Great Model, Grand Model, and Ireland's Joe Orion blood lines. Correspondence solicited; also invite inspection at the ranch.

BERYLWOOD INVESTMENT CO.

J. W. Snodgrass, Mgr.

Hueneme, Ventura Co., Cal.



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We consider this an essential part of our stewardship in the operation of this public utility. It is due not only the 130,000 shareholders, but it is due the whole citizenship of the country.

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ing, how we do it, why we do it. You have been told of our efforts to meet unusual conditions; of how we have bent every energy to provide service in the face of storms, floods, fires.

It is an enormous task today to provide adequate service in the face of shortage of workers, raw materials, manufacturing production and transportation.

Nevertheless the service of the Bell System has been improved and extended this year. Over 350,000 new stations have been put into operation. And the loyal workers of the Bell System are establishing new records for efficiency and will establish new records for service.



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More eggs naturally mean MORE PROFIT—LACTEIN Condensed BUTTERMILK supplies the requirements for the heavy production of eggs. Albumen and Proteins are furnished by LACTEIN, and also the valuable LACTIC ACID which means perfect digestion and cleansing of the system. Laying hens are under constant strain and their system must be healthy, vigorous and strong. LACTEIN will prove more beneficial than any one food or tonic that can be procured. LACTEIN furnishes the FOOD OF ECONOMY AND PROFIT.

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Cleanliness, a Factor in Economy

By Jean A. Koethen



No one who listened to Dr. Beach's address at the Van Nuys poultry institute could fail to see that while the doctor laid no stress upon the conclusion, contaminated ground plays a large part in certain diseases, while general sanitation is a sufficient cure for others. Take coccidiosis, for instance. This is a disease which is not perhaps due in the first instance to contaminated ground, yet it is passed on year after year to generation after generation of young stock by contaminated ground. Dr. Beach took pains to explain that coccidiosis can be controlled, even on contaminated ground, by the use of buttermilk. He did not say "Get your chicks off contaminated ground," but the conclusion was obvious.

Then there was the case of intestinal worms. Contaminated ground again passes the disease on year after year. The worms are in the ground. Only the most drastic treatment can eliminate them, yet we worry along year after year, treating worms with tobacco instead of putting our chickens on clean ground.

Fowl cholera was a third disease discussed. This is a new disease comparatively and its cause is suggested in the fact that in every outbreak of the disease a thorough cleaning up, with an antiseptic in the drinking water to check infection, eradicated it.

Is my point plain? What I am trying to say is, why do California poultrymen go on year after year permitting their flocks to be decimated by diseases due to filth in one form or another, and their vigor diminished by doctoring, instead of aiming the ax at the root of the matter and giving their birds an environment which is conducive to health? I don't know that we can blame the poultry division of the college of agriculture for handing out remedies instead of preventive measures. Remedies are what the people want. Prevention is too severe.

Dr. Beach claims that hens can be doctored for worms by the use of tobacco several months at a time and be none the worse for it. If this is true it is contrary to every principle of health. No child can have a severe illness and take medicine for several months without being the worse for it. It may recover in time and be as vigorous as it would have been, but the chances are against it. I do not believe any hen can suffer from intestinal worms or any chick from coccidiosis and ever be quite what it might have been. It may be apparently healthy and productive, but its constitution has suffered and sooner or later there results a condition of lowered vitality in the whole flock.

If vigor in California flocks were all it ought to be we might pass up this program of incessant doctoring, but the poultry division itself admits that there is much to be desired in this particular. Professor Lloyd stated in one of his lectures that when he tried to find perfectly vigorous stock for a former pupil he was disappointed to find how very rare such stock is.

The fact is that doctoring and constitutional vigor are as far apart as the north and south pole. If you will doctor you may as well renounce once for all hope of a highly vigorous flock. The two don't go together.

Cleanliness First and Always

If not doctoring, what then? What, indeed, but prevention, and prevention's big stick is cleanliness. Clean ground, clean air, clean water, clean houses and nests, finally clean bodies, inside and out, but of this I cannot speak now.

Most poultrymen acknowledge without question the necessity of clean houses, clean water and clean air, but shake their heads when you mention clean ground. You cannot be moving henhouses around. They are built to stay. How, then, can you have clean ground for your flock?

For the laying flock there are three alternatives: There is the no-yard house, which a good many believe is healthier than a house with a dirty yard. In the no-yard house the floor is covered every year or oftener with clean sand, all the old sand and litter being removed before the new is put

in. This guarantees perfectly clean soil once a year. In between, as often as seems necessary, the litter is removed and fresh litter supplied. Such a system, though not perfect, should do away with all danger of coccidiosis and intestinal worms.

The second alternative is the double yarding system. This, if properly worked, which it rarely is, should provide perfectly clean ground, but it cannot be worked in a minute. A yard must be allowed to grow a green crop for at least six months before it is thoroughly purified. I believe some authorities recommend a year's rest for each yard, but that seems hardly necessary if the right sort of a crop is grown. In the yards of one man who is really working this system I saw barley and Sudan grass two or three feet high. It had been growing for months, and as fast as it attained the proper height it was cut and run through a clover cutter for the birds. Meanwhile, the roots, after a copious irrigation, grew another stand. With a monthly irrigation such a stand of grain can exhaust a good supply of manure in six months.

The third alternative is portable



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PETALUMA, CAL.

houses. These houses are not in favor in Southern California and are hardly adaptable to any but backyard use for the laying flock. For the growing chicks, however, a portable colony house is entirely practicable and would do away with a large proportion of chick mortality. Professor Dougherty showed stereopticon pictures of portable houses used on the Davis farm. One of these, which is especially designed for backyard use, is eight feet square, holds 20 hens, and can be knocked down and put up again in a very short time by two men. Such a house would be very useful in an orchard. Another, five feet by six, is intended especially for use as a colony brooder. With a small brooder stove to provide heat it will hold 50 chicks for two months or 100 for a shorter time. If the brood is not too large the pullets may remain in it indefinitely. In the 8 by 8 house 100 chicks can be kept from the incubator till they are nearly ready to lay.

I understand, of course, that no big poultryman thinks he can afford to keep chicks in such small flocks. For them the only way is the double yard system with good big yards and as much extra range as possible, with the yards thoroughly purified between seasons.

When we talk of "affording," however, can even the big poultry men afford to lose as many chicks as some of them lose every year under the present system? A chick is a little thing, but it costs 20 cents or thereabouts, and 20 cents multiplied by 100 or so runs into real money. Losing a chick is bad enough, but to lose a full grown hen that has cost a dollar and a half to raise is worse. It is these losses from disease that tip the scale, and in these losses contaminated ground plays a larger part than some would care to admit.

Clean Air

The matter of ventilation is relative and inversely as the square of the number of hens in the house. What would be sufficient air for 20 hens is scant for 50 and stifling for 100. When one sleeps in the open for a few weeks he realizes how far from pure is the air of a well ventilated room occupied for eight hours by one person. What must be the condition of the air in a poultry house containing 320 square feet and half as many hens, with all the air coming in from one side and no circulation? Our hens, perhaps, are trained to live without pure air, but they cannot help succumbing to roup now and then when they are forced to swelter all night in a crowded house and then go out in the chill daybreak to pick up breakfast.

Quite as harmful as lack of oxygen is the odor from piles of droppings that have accumulated under the roosts for a week or more. Droppings should be removed twice a week in the smallest flock. I do not see how the owner of a large flock, keeping his hens under the conditions demanded in commercial production, can maintain health without removing the droppings every day, yet there are many who neglect this precaution. Polluted air, breathed night after night, is a fruitful source of roup and possibly of other diseases. Those outbreaks of fowl cholera, so mysterious in their origin and so readily controlled by cleaning up, may they not have been due to this very thing?

We hear a good deal about the loss due to carelessness in handling eggs, and the poultryman whose statement shows a deduction on account of cracks and rots gets a jolt that sets him to eliminating cracks and rots. How about the man who loses half a dozen hens today with fowl cholera and three or four next week with roup, and who counts his chick losses from coccidiosis at from five to ten per cent? Are we to be more careful of an egg worth a nickel than of a hen worth two dollars? Shall we keep on vaccinating to control chicken pox or get in and clean up so thoroughly that no chicken pox germ can live from one season to another? Wouldn't raising chicks in lots of a hundred each in portable colony houses be better than seeing ten per cent of those hatched drop off every year with white diarrhoea and coccidiosis? When we are looking for the little leaks isn't this a good place to begin?

Envy ought to be kicked out of every life because it is a consumer and a non-producer.

Poultry Queries

Conducted by J. A. Koethen

Roup in Turkeys

Is there any cure for roup in turkeys? Mine have a discharge from the nostrils and a swelling under the eyes.—Subscriber, Garden Grove.

If there is pus in the swelling under the eyes it may be necessary to open

it and cleanse with peroxide diluted with an equal quantity of water, but unless the swelling is large it is better not to touch it. Dipping the head in a solution of potassium permanganate is the simplest remedy for these ropy cases and as effective as any. Purchase ten cents worth of permanganate crystals at the drug store. Put a pinch of these crystals in a quart or more of slightly warm water, just enough to make the water a good, deep purple. Massage the turkey's nostril with your thumb and finger, rubbing upward toward the eyes, in

order to loosen the secretion. Then dip the head in the solution and hold it there while you count ten. The permanganate solution cleanses the nasal passages and gives nature a chance to work. This should be done night and morning till there is improvement. Always prepare a fresh solution for each treatment. Potassium permanganate loses its strength quickly in solution and for this reason has little effect when used in the drinking water. I take it for granted your turkeys are roosting out of doors. If they are not, they should be.

POULTRYMAN'S CALENDAR—AUGUST, THE VACATION MONTH

Things are a little easier in midsummer, and the poultryman can get a few days off now and then if there is anybody at home to feed and gather the eggs. Probably the most imperative task, outside of feeding, is keeping the place clean. Mites multiply rapidly in hot weather and can do much damage. Clean out the droppings daily, if possible, wash with the hose, and paint roosts and adjacent boards with crude carbolic acid and kerosene, one part acid to four or five of kerosene; or with carbolineum or a cresol preparation. Cleanliness is especially important in coops occupied by young stock.

Hens that begin to molt in August should be culled out and precocious pullets held back by giving them the conditioning mash of bran and bonemeal or by making the ration more fattening with a larger proportion of grain. Now is a good time for caponizing late hatched cockerels. This is done at about two pounds weight, or just before the birds begin to develop sexually.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST AT SANTA CRUZ

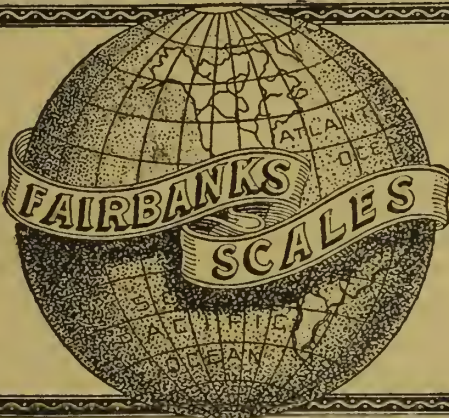
By Max Kortum

During the past two weeks there has been a marked change in the position of some of the leading pens. Enterprise Ranch is back in second place with R. C. Gibson of Newhall a close third, while B. F. Rose of Santa Cruz has dropped back to fourth place. The leaders are lined up as follows:

Walls, 1,647 eggs; Enterprise, 1,586; Gibson, 1,584; Rose, 1,577; Bellows, 1,561; Gibson, 1,513; Peck, 1,512. High Pens for Week Ending July 31

Neef, 47 eggs; Bellows, 47; Gibson, 46; Gibson, 46; Barker, 46; Stalling, 45; Clark, 43; Wood, 42; Schlink, 38; Gray, 37.

FAIRBANKS SCALES



Accurate Weights now even more important

TO GET first hand facts about your farm crop weights you must have a dependable scale. Such a scale tells you whether or not you are feeding your stock for profit.

It tells you exactly what that stock should market. It assures you greatest returns from your produce.

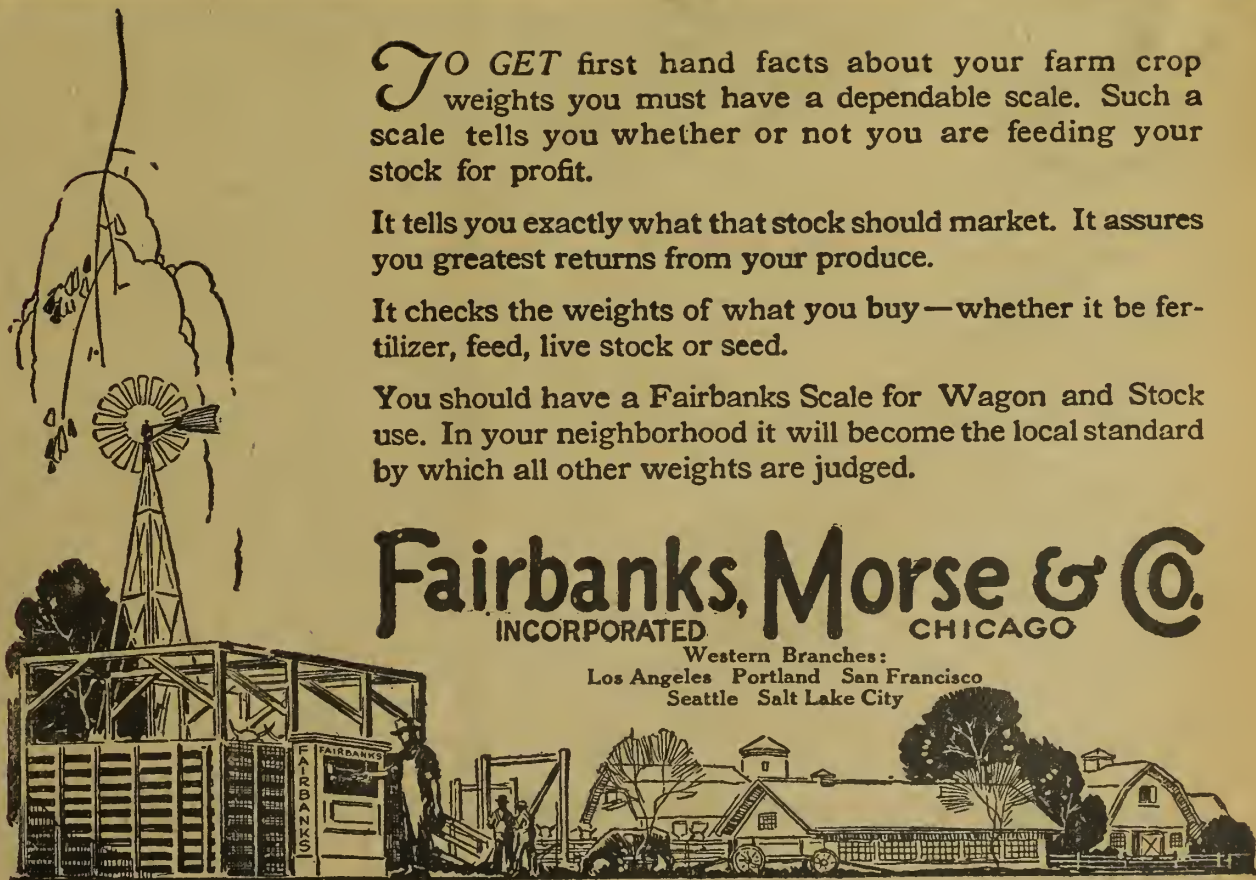
It checks the weights of what you buy—whether it be fertilizer, feed, live stock or seed.

You should have a Fairbanks Scale for Wagon and Stock use. In your neighborhood it will become the local standard by which all other weights are judged.

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POULTRY

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We have the following varieties of thoroughbred chicks every week: Anconas, Barred Rocks and R. I. Reds, \$20.00 hundred. Extra fancy dark R. I. Reds and White Rocks at \$25.00 a hundred. White Leghorns \$17.50. We guarantee safe delivery. Every one a strong, healthy chick. **ORANGE COUNTY HATCHERY**, 403 E. Santa Clara, Santa Ana, California.

S. C. White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Now booking orders for this Fall and next Spring delivery. Prices and terms gladly sent on request. Hatchers and shippers of Baby Chicks since 1898. **MUST HATCH INCUBATOR COMPANY**, 433 Seventh Street, Petaluma, California.

Santa Cruz Chicks are in demand. Our hatchery will run full blast this fall, supplying Leghorns, Minorcas, Anconas, Rocks, Reds and Orpingtons. Write for folder with price list. We also offer Hydes W. L. Cockerels from Pen 1, with trapnest record 236-284. B. W. Archibald, Soquel, Santa Cruz County, Calif.

Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. L. W. Clark, 615 Main Street, Petaluma, California.

Baby Chicks from my carefully selected purebred flock of S. C. White Leghorns. August, September and October delivery at \$15.00 per 100 chicks. Am booking orders now for next spring. Write for particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

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ATASCADERO, CALIF.

S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write Henry Miller, Supt.

White Leghorn Baby Chix from heavy laying HOGANIZED STOCK. Safe arrival of full count, live, strong chicks guaranteed. Price list and interesting literature on application. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Raise Fall Chicks—We will have them every week. R. I. REDS, BARRED ROCKS, WHITE LEGHORNS. Write for special circular. See why they pay. Stubbe Poultry Ranch and Hatchery, P. O. Box 67, Palo Alto.

Barred Plymouth Rocks—"Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vadden, Los Gatos, California.

White Leghorns—Chicks, hatching eggs and breeding stock from the home of heavy layers. Fall chicks pay big. Free folder tells why. Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, California.

Single Comb White Leghorn Chicks from our Hoganized and Trapnested stock, 100 or 1000 lots, booking orders September and October deliveries. Forster Brothers, 2918 Otis Street, So. Berkeley, California.

Buff Orpington, Buff Ducks, Bourbon Red Turkeys, White Guineaes. The Ferris Ranch, S. Reservoir, Pomona, California.

White Minorca Baby Chicks and Hatching Eggs—Dark Cornish and Silver Campine eggs. Folder. Leech Poultry Yards, Baldwin Park, California.

Thoroughbred Rocks—15 years a breeder. records 210 and better. Mrs. M. A. Warren, 36 Little Delmas Ave., San Jose, Cal. Eggs \$2.50, 15.

Baby Chicks from selected egg type S. C. White Leghorn hens. Tupman Poultry Farm, Box 7-C, Ceres, California.

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Homes Wanted for nice little dogs. M. Bower, 612 E. Maple St., Monrovia, Cal.

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For Sale—Ten thousand one year Sour Seedlings, six inches up to twenty. No better stock to be had. Price \$60.00 the thousand, also 500 ½ inch up Valencia one year, \$1.40 each, 300 pedigreed Eureka Lemon trees ¾ inch up, two years. The above is first class, fine roots. C. W. White Citrus Nurseries, Home 303, Glendora, California.

For Sale—Placenta Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. Ketscher's Nursery, 1101 E. 4th St., Santa Ana, California. Phone 572WK.

50,000 Florida Sour Orange Seed Bed Trees; 100,000 California Sweet Seedling Seed Bed Trees; Valencia, Eureka Lemons; Supply Co. buds. **SOUTHLAND NURSERIES**, 1941 East Colorado St., Pasadena, Cal. Phone, Colorado 6352.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Fruit Trees—Berry Plants scarce, order now. Cash Nursery, Sebastopol.

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For Sale—Ayrshire Bull No. 17814, Triunes Lad of C. H. A. F., born Feb., 1914. Selling him because I need new blood in herd. Farmer's price. For particulars write H. G. Ranch, Solvang, California, or call at ranch to see him.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome, information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Registered Shorthorns—Good dual purpose animals raised without pampering. Young stock for sale. Prices reasonable. W. E. Rucker, Willits, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Wineville, California. E. R. Stalder, owner.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Sunshine Farm Jerseys—No females for sale. Bulls from high testing cows for sale. E. E. Greenough, Merced.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

SEEDS AND PLANTS

Since May 1st, Ranere Everbearing Raspberries have brought \$30 to \$35 per chest. Plants for fall delivery \$75 per 1000; 10¢ each. B. Everton, R. D. A., Box 305, Mt. View, California.

Reliable Cabbage Seeds—I grow them. You want them. Let's get together. Write me for special trial offer on just what you will need. Isaac F. Tillinghast, 40 Podel Street, Santa Rosa, California.

Pumpkin Seed—Mixed Pumpkin Seed, good germination, 25¢ per lb. Aurora Seed Mill, Stockton, California.

WANTED

Agricultural College Graduate, twenty years' practical experience, married, wants position as working foreman or superintendent on dairy ranch. Good schools, good living conditions essential. Holstein cows A. R. O. work preferred. Address "L," care California Cultivator, Los Angeles.

Wanted—to hear from owner of good ranch for sale. State cash price, full description. D. F. Bush, Minneapolis, Minnesota.

Wanted—Position as manager of fruit ranch, 25 years' experience in growing citrus and deciduous fruit. Address: 219 Cypress, Santa Ana, California.

Wanted—Myroblan (cherry, plum), any quantity. Pay high price. Address: K. Umeda, Gilroy, California.

Wanted—Immediately, experienced bud-ders and tiers. Address or phone Kirkman Nurseries, Fresno.

DUCKS

Mammoth Muscovy Ducks, Ducklings and Hatching Eggs; heavy fowls and great layers. Woodland Hatchery, Woodland, California.

White Muscovy (Quackless) Ducks—Eggs, Ducklings, Breeders. Free circulars. Caldwell Farm, Box 274-E, Los Angeles.

BERKSHIRES

ANCHORAGE FARM BERKSHIRES

Orland, California.

BRED GILTS FOR SALE.

Your Choice of 10 Crack Boar Pigs from our early litters. We want you to see these pigs, their litter mates, and their dams. Have just shipped a choice boar pig to Kansas. These young boars are of correct blood lines, right in type, and well developed. Represent the close-up blood of Laurel's Champion, Star Leader, Ames Rival 118th and other excellent families. Write or come to the ranch. Yours for better Berkshires. Geo. A. Stingle, Lark Meadow Ranch, El Monte, California.

The Only Herd of English Berkshires in the west. Bigger, better, stronger litters. More pounds of meat for less feed. Weanling pig \$35. Satisfaction guaranteed or money refunded at once.

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Grape Wild Farm—Berkshires, Guernseys. Big Type Berkshire Boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion. A. B. Humphrey, Prop., Escalon, California.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Cal-Orchards, Martinez, California.

Real Good Berkshires, cholera immune. Frank B. Anderson, Box 724, Sacramento, California.

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DUROC-JERSEY SWINE

JUMBO SENSATION

Our new herd boar is one of the largest boars in the world for his age. We have some real buys in pure breeds.

WHITLEY

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Mrs. R. E. Whitley, Mgr.

Phone 160-J Van Nuys, Calif.

For Sale—Two good open fall gilts sired by LORD'S ORION CHERRY KING. One open fall gilt sired by PATHFINDER—these are outstanding good gilts and can be bred to either PATHFINDER WONDER or TRAILBLAZER. Also some good sows bred to PATHFINDER WONDER for September farrow. Hamlin Duroc Farm, Box 697, Sacramento, California.

Borge's Big Duroc Jersey Hogs—Herd headed by California Golden Model 3rd. A few choice females of desirable breeding for sale at very low figures. I am offering for sale the tried boar Dos Palos Chief (an Orion Cherry King Jr. boar). Here is an opportunity to secure a tried sire at a very low figure. Satisfaction assured. Write at once. Jack Borge, Dos Palos, California.

Fifty Head of Durocs, bred sows, gilts and pigs. Three boars ready for service. Five March boars, grandsons of Mary Jane Pathfinder. One sow of Orion Cherry Pathfinder out of Lambs Model Lady. Five boars out of Cherry Queen Pathfinder and sired by Lords Orion Cherry King. For information and prices write Elmer Lamb, Ceres, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

Bargains in Bred Sows and Gilts—Pathfinder and Great Wonder I Am blood. Derryfield Farm, Capitol National Bank Bldg., Sacramento, California.

L. & M. Ranch, Van Nuys—Buy our young boars by such sires as May Rose King, Winsor's Giant Orion, Orion's King Gano. Top Sensation 3rd.

Durocs—Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. J. L. Stevenson, Van Nuys, California.

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. Hollow Hill Farm. B. W. Shaper, Manager, Colton.

Winsor Ranch Durocs—Boars and bred gilts of our own and eastern breeding. Write us your needs. Morris C. Allen, Manager, Bonita, California.

December and March Duroc boars; Pathfinder breeding. Sterling Smith, Route 1, San Diego, California.

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For the Best in Durocs write June Acres Stock Farm, Davis, California.

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I Would Sell My topnotcher boar by Kings Big Bone Leader; two bred sows by Long Smooth Jumbo; also spring pigs—everything big type stuff. H. Christian-son, Arlington. Write me.

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. J. H. Crawshaw, Hanford, California.

The Big-Type Polands direct from Iowa. The best blood lines in the game by the Iowa man. J. L. Dunlap, Pomona, California.

The Grand Champion El Proffto heads our big type Poland Chinas. Letters promptly answered. Viola L. Renwick, Santa Barbara, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. Ferguson & McKale, Orland, California.

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HAMPSHIRES
PRINCE LANGDON OF EDGEWOOD
76139 and two bred sows. All farrowed in May, 1919. Bred at Langdon's. The three for \$500.00. M. S. Stough, El Cajon, California.

FARM LANDS FOR SALE

LAND FOR SALE

"Take no one's advice" until you have spent a day or two on our ranch, if you are looking for the ideal, self-supporting home of 5, 10 or 20 acres. One night's rest among the pines will do you a world of good, and to see the fruit and vegetables growing will convince you as to what can be done. If an ideal mountain climate, electricity, pure water for drinking and irrigation, good roads assured, and rich land cheap, will appeal, your visit will be like nine out of ten others who have made it permanent. For further information address

PARADISE RANCHITA
Paradise, California.

For Sale—25 acres for \$20,000, for quick action. Best buy in Tulare County, only 2 miles east of Orosi. Good 5 room house, plastered sleeping porches and all screened in, beautiful view. Two wells one electrical pumping plant. Five acres of the 25 is on a beautiful knoll overlooking the entire valley. The house is situated on this 5 acres. 20 acres under irrigation and cultivation, cement pipe line, 3 acres in Emp. 4 years old, 3 acres in Valencia oranges, balance in Thompson seedless. The place must be seen to be appreciated. Address owner J. F. Galbraith, R. D., Box 149, Orosi, California.

Orange Grove Near Lake, Only \$1,500, Easy Terms;

Close to RR. town, near city; 7 acres good soil; pretty bungalow, poultry house; view nearby lake; water from drilled wells; 100 orange and grapefruit trees, also guavas; packing house nearby; owner unable care for it, if taken now only \$1,500, easy terms. Details page 72 Strout's New Catalog Orange Groves and other Semi-tropical Farms. Copy free. **STROUT FARM AGENCY**, 503EJ, Wright-Candler Bldg., Los Angeles, California.

For Sale—Good River Farm of 22 acres suitable for fruit or alfalfa; in fact will grow anything. 25 acres in alfalfa, about 20 acres in corn, 1 acre in young family orchard, 17 acres pasture land and timber, balance farmed to grain. All fenced hog tight. Modern five room bungalow with hot and cold water, bath and toilet, large barn and tank house, 6,000 gal. tank, good pumping plant for irrigation, near town and high school, one mile from grammar school. For further information address Box M, California Cultivator.

For Sale—\$5,000. Five acres of sandy loam especially adapted for truck gardening near Porterville one-half mile west. Good six room house, bath, toilet and screen porch, large refrigerator and good cellar. Property fenced, all land under irrigation. Chicken runs and corrals, pumping plant, plenty of good water, fruit trees and some alfalfa and garage. Chickens and turkeys can be bought with the place. Can be made an ideal home and is a good buy. Address Owner, Post Office Box 207, Porterville, California.

For Sale—300 Acre Farm situated Santa Barbara County. All implements necessary for beans and hay, including bean thresher, Fordson tractor and plow, side delivery rake. Large house and barn, chicken house, bunk house, implement shed and well equipped shop. Soft water, modern system. Apple trees, nuts and various fruits. Owner must sell, ill health. Easy terms. Address Alfred L. Friel, Lompoc, California.

For Sale—\$20,000—40 acres of A No. 1 land in Tulare, 2 miles from Tulare, all under cultivation, 15 acres in Noko, 12 acres in alfalfa, 13 acres in Thompson Seedless, cuttings planted this year. Big barn, house, teams, one single plow, one double, cultivator, and fine buggy; everything goes with the place. Also 10 tons of alfalfa hay. Ditch right through the place. Address owner, M. Hadshin, Tulare, California.

FOR SALE AND EXCHANGE
10-20-40-60 and 80 acre ranches, rich level, plenty water; proven grape (Thompson seedless) fig and alfalfa land. Price right, easy terms.

SOME OF THE FINEST DAIRIES IN THE STATE.
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Buy cheap, good alfalfa and fruit land in the easy lift water district near improved dairy and hog ranches. \$50 to \$75 an acre, one-fifth cash. Send for circulars. The R. & L. Ranch, 611 Fay Bldg., Los Angeles.

For Sale—10 acres of raw river bottom land in Kings County, all under irrigation, well on place. Will sell or trade. Address: Owner, O. C. Hamilton, R. D. B, Box 104, Kingsburg, California.

If interested in securing farm lands or have same for sale write me. John G. Mee, St. Helena, California.

For Sale—Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

Irrigated Alfalfa Ranches for sale. Other crops, plenty water. C. I. Graves, Fallon, Nevada.

Best Cheapest orchard berry and grape lands. John F. Beckett, Arroyo Grande, California.

Irrigated Farms—Five acres and up. Alex. Murdock, Brentwood, California.

MACHINERY

Being Unable to carry our contemplated plans I will not have use for the Bates Steel Mule Tractor I purchased. It is absolutely new, having never been used. A very liberal discount from the purchase price will be given for immediate sale. Address 319 13th Street, Oakland, California.

For Sale—Used ranch material, windmills, pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for our "Special Bargain" price list. Demmitt Co., Upstairs, 120 N. Main, Los Angeles.

For Sale—Case Tractor in good condition or will trade for Dodge car, equal value. L. F. Raftery, Owensmouth, California.

For Sale—Caledonian Bean Cutter and small thresher. Bargain. Chas. Young, Whittier, California, Phone 7694.

For Sale—Calf-way milking machine, De Laval separator, James Mills Orchards Corporation, Hamilton City, California.

LIVE STOCK

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Next sale at Ranch, Wednesday, August 11, 1920. W. P. Dwyer and W. S. Gullford, Box C. Butte City, Glenn County, California.

Carruthers Farms—Live Oak, California.
Shorthorn cattle and Berkshire swine of quality and select breeding.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

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RABBITS

For Sale—New Zealand and Flemish Giant does and bucks, young stock. Call 2212 Nicholson Avenue, Monterey Park, California. Phone Alhambra 656-W.

New Zealand Reds—Young stock. Reasonable prices. Josephine Spencer, 1916 21st St. Sacramento

SALESMEN WANTED

Men With Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write J. H. Yetter, 115 North Broadway, Los Angeles.

FOR RENT

For Rent—Good paying 100 acre dairy ranch. Abundance of feed, shade, water. Present tenant wishes to sell stock, lease and implements. Box 74, Alpaugh, California.

GOATS

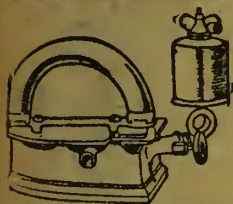
For Sale Cheap—Small bunch of goats, including nine does and five kids and two good bucks. Inquire of or write to O. C. Knox, Thermal, California.

FOR RENT OR SALE

All or part of 2500 acres improved land near Pixley, Tulare County, Calif., fenced, with twenty wells and four Artesian wells — electrically equipped — pumping from 35 to 150 inches each. Reservoirs, buildings, barns, etc., suitable for grains, alfalfa, cotton, fruits, etc. About one-half of this land is proven Rice land, many thousand sacks having been produced several years ago, and was awarded a Gold Medal at the late San Diego Exposition.

Complete equipment of large Holt and two Best Tractors, Plows, Discs, Levelers, Ditchers, Grain Drills, Mowers and other tools, also live stock if desired. This is an exceptional opportunity. Possession given at once. Rental to begin with 1921. Only responsible parties, able to finance themselves, considered.

Address: Dr. R. Schiffmann
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Pasadena, Cal.



Ironing Comfort

You know you ought to help the good wife to keep cool these hot days by purchasing the Imperial Self-Heating Iron. No running back and forth from the hot stove with the Imperial, because it makes its own gas from ordinary gasoline. Absolutely safe and guaranteed.

Send for Catalogue and Prices
THE COLE TOY & TRADING CO.,
324 So. Hill St. Los Angeles

BETTER STATE FAIR

(Continued from Page 198.)

Rosa, and James Marwick, Santa Barbara.

The milking Shorthorn classes will hold more competition than last year. Thos. Harrison of Santa Rosa; J. D. Rowe & Sons, Davis; Chas. L. Weaver, Tulare; Wm. Bond, Newark, and Geo. A. Murphy, Perkins, complete the list.

For the first time in years no Ayrshire cattle will be seen at Sacramento. For some reason none of the many good herds will enter.

The swine department will be one of the most interesting divisions of the fair. Contrary to all prediction, the show, save for Hampshires, will be as well balanced as ever. Indeed, it is expected that some of the greatest classes ever shown in the West will come before the judges.

In point of numbers the Poland China classes are the largest. About 35 exhibitors are already in with entries.

Pre-show "dope" has it that both boar and sow classes are to be strong and no one appears to have a walk-away. It is also the opinion of those in touch with the situation that the general average will be superior to last year's. The question of type has been definitely settled in this state and will therefore not intrude into the judging. The following Poland China herds are entered:

Bassett Bros., Hanford; Shinn & Elliott, Tulare; H. C. Shinn, Tulare; H. A. Johansen, Fresno; A. J. Elliott, Tulare; Gatewood & Stephens, Fresno; Kern County Union High School, Bakersfield; W. L. Haag & Son, Hanford; Johnnie Glusling, Winton; V. W. Dubil & W. E. Martin, Visalia; Deforest & Horr, Susanville; Thos. Caesar & Son, Reedley; P. E. Mitchell, Atwater; J. N. Cook, Orland; A. D. McCarty, Modesto; R. J. Yates, Orland; Chas. Gatewood, Fresno; A. Buckland & Son, Fresno; Nettle E. Anderson, Modesto; J. F. Lehman, Lodi; Fred D. Ross, Hanford; C. McNeil & F. Gatewood, Fresno; Geo. V. Beckman & Sons, Lodi; Beckman & Langhorst Bros., Lodi; Maurice Hollingshead, Orland; Lillie Maywood, Willows; E. M. Locke, Lockeford; N. K. Horan, Lockeford; Marshall & Son, Sebastopol; Viola L. Renwick, Santa Barbara; W. A. Young, Lodi.

State fair visitors will have an opportunity to see several of the highest priced Duroc-Jersey sows and boars of the breed. During the past year California breeders have made many notable additions to their herds and most of the distinguished animals have been entered. Mrs. R. M. Whitley of Van Nuys recently paid \$15,000 for the boar, Jumbo Sensation, which has been entered and it is expected that the contest for the grand championship will be a battle royal. The sow classes will be just as interesting and will include the Diamond Bar Ranch sow, Queen of Pathfinders, for which Fred Lewis paid \$10,200. The Duroc show will be made up from nearly 30 of the top herds of the state. The preliminary list includes:

Winsor Ranch, Bonita; V. F. Dolcini, Davis; Harvey M. Berglund, Dixon; W. M. Way & Son, Modesto; Diamond Bar Ranch, Spadra; Western Laboratories, Stockton; C. D. Bright, Orland; Ordway & Snyder, Hughson; J. P. Walker, Visalia; Grover C. Hamilton, Stockton; J. E. Thorp, Lockeford; W. J. Fulgham & Sons, Visalia; Joe N. Chinoweth, Visalia; Jos. Borge, Dos Palos; E. G. Stone, Modesto; W. T. Hollingshead, Orland; R. S. Christman, Yuba City; Witherow & Stafford, Live Oak; Hollow Hill Farm, Colton; Lew Wallace Jr., Folsom; Carl Woosley, Bonita; Mrs. R. M. Whitley, Van Nuys; Dixon & Dixon, Hughson; H. A. Baum, Placerville; Elmer Lamb, Ceres; J. Peterposten, Galt, and Blanch Bright, Orland.

L. A. Weaver of Columbia, Missouri, will rate both the Poland China and Duroc classes. Weaver is counted one of the most competent swine judges in America. He will judge Polands and Durocs at the Illinois state fair and is one of the two Duroc judges at the coming National Swine Show. His placings will be watched with keen interest.

The annual showing of Berkshires at Sacramento is generally conceded to be second only to the National show, and this year California and Nevada breeders will be out in force. Several new herds will be noted. D. J. Bastanchury of La Habra and the Italian Vineyard Company of Guasti will make their first show, as will a number of other herds. The list of exhibitors follows: J. Francis O'Connor, Santa Rosa; H. W. Cannon, Susan; Superior California Farm Lands Company, Monroeville; Napa State Hospital, Napa; J. G. Throckmorton; Mrs. J. G. Throckmorton; Sandercock Land Company, Sacramento; Anchorage Farm, Orland; Grace Trumbull Reed, Sacramento; H. F. Alps, Reno; A. B. Humphrey, Tom Hyland, Sebastopol; D. J. Bastanchury, La Habra; Italian Vineyard Company, Guasti. Wilson Rowe of Davenport, Iowa, will act as Berkshire judge. Small showings of Chester Whites and Tamworths will also be made. A Tamworth herd from Illinois has been entered.

The draft horse division has a lighter entry list than common. Strange as it may seem, the lack of entries has been explained by increased sales the past spring. N. W. Thompson of

(Continued on Page 207.)

Household Department

AN EARLY START

There's a magic in the mornin'
When the mist hangs o'er the lot
Like a fairy cloak of silver
That the queen of night forgot.

There's a taste of midnight shadows,
There's a lurkin' hint of rain,
There's a heady smell of sweetness
That intoxicates your brain.

There's a blithesome, thrilly something
That just crinkles up your heart
On a gray and misty mornin'
When you get an early start.
—New York Sun.

A HOUSE FOR RENT

(Concluded.)

"Telling dad" proved almost as exciting as befriending the Douglasses had been. Mr. Proctor was concerned and amused, and touched and indignant by turns, while good Mrs. Proctor could hardly be restrained from jumping up from the supper table to run down and see what the new tenants needed for the night.

"Mother!" implored both boys, "don't act as if she were a charity person! She is Jessie Mallard—Major Mallard's niece."

And though to most people it would have seemed indeed that Jessie Mallard had come perilously near to being an object of charity, so entirely did the Proctors take the tone of their being desirable renters that, after a strained day or two, the plucky young people regained their poise and courage and at the end of a fortnight the tenants on the back lot were fast friends with their landlords.

At the first attempted word of business between Harvey Douglas and Mr. Proctor the latter yawned him off. "I have nothing to do with it, Douglas. My boys are running this whole affair." So Douglas sought the boys.

With the boys there was a critical moment when young Douglas offered Sam a \$10 bill at the end of the first week.

"That will be a month's rent, and we don't collect until the end of the month," Sam said, flusbing.

"You don't mean that the whole rent will be only \$10 a month?" asked the soldier.

Sam bowed, floundering desperately for something to say, and finally recalling a scrap of Mr. Wakely's conversation.

"That represents a good return on our outlay," he said, sedately.

"Whew!" whistled Douglas, slipping the note back into the pocket which held such a meager supply. "That's wonderful luck for us."

Jessie looked up brightly; she was leaving baby asleep in his father's care for an hour, while she ran off for a chat with Cynthia Adams, a former schoolmate, who had just discovered her presence in town.

An hour later she returned, face burning.

"What's the matter, dear?" Douglas asked as she stepped into the odd, attractive living room and bent over the sleeping baby.

"Oh, Harvey! Cynthia asked where we were staying, and when I told her, she was so excited. She said all the town had been interested in the Proctor boys' experiment. 'You must pay a fancy price for it,' she said, 'for it seems the boys fixed up this place in order to make money to go to the academy—and I believe to Moosehead Camp, too.' But think of what they are letting us have it for!" she choked and dropped her dark bead on his knee.

Harvey touched her gently with one hand, while he held the other out before him. "Hold steady, old girl," he said huskily. "The shake has almost gone out of my hands, and if we can hold on a little longer I can get back to my work. But, Jessie, I couldn't make a go of it yet."

"I know it's all right, Harvey," said Jessie, brightening suddenly. "Some day we'll make it up to those boys, won't we?"

Even while she was speaking, Cynthia's impulsive little note was winging its way over to the academy. She had seen beneath Jessie's surface cheerfulness and guessed more than the other dreamed. Having been a favorite with the Major in school holidays, she made bold to tell him of his niece's presence in town, and added a hint of the difficulties she suspected. This gave the offended guardian the

excuse he had long wanted, and the following afternoon saw his car nosing its way down the side road to the Proctor garage.

It wouldn't do to tell of that interview. If people can forgive and forget misunderstandings and hasty words, outsiders have no right to pry into their mutual apologies. Harvey would have been glad to scrape through without the Major's help, but Jessie, perched on his knee as of old, told him all, not forgetting the Proctor boys.

"Bless my soul!" the warm hearted Major cried, "take me up there right now, will you? I want to see those fellows."

"Not a word of this, though," cautioned Jessie.

Major Mallard's call on Mr. Proctor assumed the aspect of a friendly courtesy, but at the close he put the real object of his visit in plain words.

"I am anxious to have boys like yours, Proctor, at the academy," he said, "and I wish to offer your oldest son a scholarship recently established at the school and left to my discretion. He might enter at the beginning of the next term, if convenient to you, and of course it would entitle him to membership in the camp next summer."

"It is the younger boy, uncle," Jessie interposed desperately, "who is so keen on going to camp."

"Why, certainly," the Major covered his lapse of memory gallantly, "but naturally the younger lad would be included as his brother's guest."

And perhaps this is the reason that Mr. Proctor always says, when he is asked about Sam's and Randall's experience as real estate agents:

"Successful! I should say so. One tenant alone netted them enough to live on for a year!"—King's Treasures.

HOUSEHOLD QUERIES

Canning Queries

Will you kindly send me the recipes for the following: For canning cucumber pickles; for canning sourkraut? Do you use its own brine in canning? For canning green beans.—Subscriber, Newbury Park.

A recipe for sour cucumber pickles is given by Mrs. L. M. O., Porterville, on this page, as are many others for sweet cucumber pickles by other readers. These recipes were sent in answer to similar request from a Cultivator reader in the issue of July 31. Extended directions for canning green beans will appear next week in this department.

As to canning sourkraut: Our subscriber asks only as to canning sourkraut, but assuming that others may wish to know also how to prepare the kraut in the first place, we quote from Mrs. Wilson's Cook Book (reviewed in this department last week):

"Remove the coarse, bruised outside leaves of cabbage and shred the head fine. Line bottom of small barrel or wooden bucket with the outside leaves, then place in a layer of the shredded leaves and cover with salt. Repeat until the vessel is nearly full, pounding down well with wooden mallet when packing. Sprinkle salt over top and cover with large cabbage leaves and then with cheesecloth wrung out of salt water. Tuck in the ends carefully and place board on the kraut, weighted down with a heavy stone. It is necessary that the kraut be kept entirely covered with the brine. Remove scum as it rises to top. The kraut will be ready for use in six weeks and it must be kept in a very cool place or canned.

"To can, fill into sterilized all glass jars and fill jars to overflowing with boiling water. Adjust rubber and lid and partially tighten. Process (boil) in hot water bath for one hour, remove and seal tight. Store in cool, dry place."

Pimento Marmalade

Did you ever hear of making marmalade from pimentos? I hear it is very delicious. Could you get me the recipe?—Subscriber, Santa Ana.

Cut off ends, remove seeds and stringy portion from 30 ripe pimentos, wash well and put through food chopper. Place in saucepan and add two cups of stewed tomatoes. Cook till

The Cultivator Patterns



BE SURE TO SEND SIZE

3283. Misses' Dress—Cut in 3 sizes: 16, 18 and 20 years. An 18 year size will require 5 1/2 yards of 36 inch material. The width of the skirt at lower edge is about 1 1/2 yard. Price 10 cents.

3309. Junior Dress—Cut in 3 sizes: 12, 14 and 16 years. A 14 year size will require 5 1/2 yards of 27 inch material. Price 10 cents.

3115. Dress for Work or Leisure—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 will require 5 1/2 yards of 36 inch material. The width of the skirt at lower edge is 2 yards. Price 10 cents.

2748. Boys' Suit—Cut in 4 sizes: 3, 4, 5 and 6 years. Size 4 requires 1 1/2 yards of 27 inch material for the waist, and 1 1/2 yards for the trousers. Price 10 cents.

3305-3292. A Stylish Gown—Waist 3305 cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 3292 cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. For a Medium size 6 1/2 yards of 44 inch material will be required. The width of the skirt at lower edge is about 1 1/2 yard. TWO separate patterns 10 cents FOR EACH pattern.

3298. Girls' Dress—Cut in 4 sizes: 6, 8, 10 and 12 years. A 10 year size will require 4 1/2 yards of 27 inch material. Price 10 cents.

3296. "Cover All" Apron—Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. A Medium size will require 4 1/2 yards of 36 inch material. Price 10 cents.

3291. Child's Dress—Cut in 4 sizes: 2, 4, 6 and 8 years. A 4 year size will require 2 1/2 yards of 36 inch material. Price 10 cents.

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Send 15 cents in silver or stamps for our UP TO DATE FALL AND WINTER 1920-1921 CATALOGUE, containing over 500 designs of Ladies', Misses' and Children's Patterns, a CONCISE AND COMPREHENSIVE ARTICLE ON DRESSMAKING, ALSO SOME POINTS FOR THE NEEDLE (illustrating 30 of the various simple stitches), all valuable to the home dress-maker.

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California Cultivator
Los Angeles

pimentos are soft. When cool rub through fine sieve. Measure and return to kettle, and for every eight cups add juice 2 oranges, juice 1 lemon, 1/2 pound seeded raisins, 1/2 cup Maraschino cherries cut into bits, 1/2 candied citron put through food chopper, 5 cups sugar. Cook slowly till very thick. Pour in sterilized glasses. When cold cover with melted paraffine and store in cool place.

To Peel Pimentos

How can I peel pimentos before canning? I want them to look like the kind you buy.—Subscriber, Artesia.

To peel place in very hot oven for short time until skins can be easily slipped off with fingers. They can also be peeled after dipping for a short time in very hot cottonseed oil. Cool, remove skins, cut out stems, seed cores and stringy portions. Pack in cans or jars. Fill with boiling water. Seal cans or place rubbers and caps loosely on jars. Boil hard in wash-boiler sterilizer, 40 minutes for cans, one hour for jars. Tighten tops of jars.

Voting for Your Own Candidate

After the Tennessee legislature records itself on woman suffrage, please discuss in your valuable paper a Hoover and Coolidge ticket. Is there any illegality in writing in name if it is not on the ballot? Yours in distress.—Subscriber, El Cajon.

The Cultivator, as its name indicates, sticks to cultural problems of the farm, leaving discussion of politics to the general publications. The voter is at perfect liberty to write in name of his or her own candidate on the ballot.

Lead Arsenate on Corn

In using lead arsenate to prevent ear worms in sweet corn is there any danger from poisoning? Must one be very careful to wash the corn before using?—Subscriber, Modesto.

The lead arsenate is scattered on the silks so that it would be practically impossible for a single grain of it to reach the ear, and it is not applied after the silks are dry, so that it would have lost its virulence by the time of maturity. If any should adhere to the husk and be brushed against the ear in process of shucking, the ordinary washing after silking would remove any possibility of danger.

Mending Cut Glass

I broke a fine cut glass dish and would like to know if you still have that dish glue recipe where mended dishes did not come apart in hot water. It was published some months ago but my paper got lost before I cut it out. Now if you or some reader would kindly send it to me I would be greatly obliged.—Mrs. H. P. Bartholomew, Ripon.

Sorry, but we cannot locate this recipe in the Cultivator for past 12 months. If any of our readers have saved it and will copy and forward to this office it will be greatly appreciated. Meantime we send directions for what is called "Diamond Glass Cement." We cannot, however, guarantee it not to melt in hot water.

Dissolve two parts isinglass in 3 parts 90 per cent alcohol and add with constant stirring 4 parts powdered rosin. This cement must be kept in absolutely tight bottles, as it solidifies very quickly. Clean thoroughly broken parts, dry, apply glue with fine brush to both sides very thinly, the thinner the better; fit together exactly and press firmly together, holding in place with rubber bands if possible. Do not use or move for two or three days.

A DISTURBANCE

During sermon time the other day a baby began to cry and its mother carried it towards the door.

"Stop!" said the minister, "the baby is not disturbing me."

The mother turned toward the pulpit and made the audible remark, "Oh, 'e ain't, 'e? Well, you're a disturbin' of 'im."

It's good to have money and the things that money can buy, but it's good, too, to check up once in a while and make sure you haven't lost the things that money can't buy.—George Horace Lorimer.

SWEET PICKLES

Some service! In the Household Query columns of July 31 Mrs. J. W. M. of Fresno asked Cultivator subscribers for recipe for sweet pickles. The response has been more than generous. One recipe was received in time to print in last week's issue; this week we print 19 and more are coming.

Just a word of explanation. Possibly readers do not realize that copy for the household department must be in the office of the Cultivator not later than Saturday morning early of the week preceding date of issue.

Cucumber Mustard Pickles

Sweet: 1 cup mustard, 2 cups sugar, 1 cup (scant) salt. Wet with a little cold vinegar and mix well, then add to 1 gallon mild cold vinegar.

Soak the cucumbers (either large or small) overnight in clear water, which will make them very brittle, then drain, wipe dry and place in jars. Cover with the cold mustard vinegar, put the jar rubber on and rub just a little lard around on the rubber, then screw on top.

Sour: This same recipe, by using the sour vinegar instead of the mild, and one cup of sugar instead of two, makes the sour pickle.—Mrs. L. M. O., Porterville.

Sweet Cucumber Pickles

One hundred green cucumbers about two inches long will fill four glass quart jars. Soak 24 hours in rather strong brine. Then pour off the brine and rinse in clear water. For this number of cucumbers use 3 quarts pure cider vinegar, 1 pound brown sugar, 1 ounce whole cloves, 1 ounce stick cinnamon, 1 ounce small black peppers, a little horseradish, sliced, a few small redpeppers. Scald the cucumbers in the vinegar. As soon as the vinegar is scalding hot dip them out, fill the jars and then pour the vinegar over them till the jar is full. Seal while hot.—Mrs. A. G. U., Hemet.

Watermelon Pickle

Responding to the appeal of Mrs. J. W. M. of Fresno in the issue of July 31 for a sweet pickle recipe, here is one that has been used in our family for a number of years. It is primarily for watermelon, but is good for many other fruits suitable for pickles. The alum, of course, is used in the case of the watermelon.

Pare off the hard green rind; cut in small pieces, inch sizes very good. Soak overnight in strong alum water. Following morning drain and scald in fresh water. Then make a syrup of 1 pint vinegar to 2 pints white sugar. Put in the melon, simmer 10 minutes. Add spices to taste. Scald this syrup and turn over pickle for three mornings. Seal in jars as you would fruit.—H. H. Rogers, Sanger.

Sweet Cucumber Pickles

I just now saw the request for sweet pickles. I want to give my recipe for cucumber pickles. I gather them in the morning when they are nice and fresh. I pick them from three to five inches in length, split the larger ones. To about 2 gallons I cover with water containing 1 cup salt. The next morning I take out of this brine, wash in fresh water, then pour hot water over them. In the meantime I have my vinegar ready. To 1 quart vinegar, 1 pint sugar, a bag containing mixed spices to suit taste, also a few pieces of horseradish and some dry mustard add to the flavor. Have this boiling and drop well drained cucumbers in syrup and boil just long enough to have them thoroughly hot. Put in glass jars and seal up as any fruit and they keep indefinitely. Everybody likes my pickles.

The lemon cucumber may be used in the same way. If they are cooked too long it makes them soft.—Mrs. L. E. C., Winters.

Good Cucumber Pickles

One gallon vinegar, 1 cup sugar, 1 cup salt, 1 cup mustard (not the seed). Boil all together, then pour over the cucumbers. They will keep without being sealed and will be nice and firm. Do not salt the cucumbers before making them into pickles. This vinegar and spice mixture is enough for 400 small pickles or two gallons of larger ones. They are the best I ever ate.—Mary L. Hootman, Puente.

Sweet Pickles

In answer to Mrs. J. W. M. of Fresno, will say the following is one of the best sweet pickle recipes I've tried: To 500 small cucumbers allow

Drink
Coca-Cola
DELICIOUS and REFRESHING

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When writing advertisers, mention the Cultivator.

3 quarts cider vinegar, 7 ounces mixed pickle spice (or 2 ounces each cinnamon, allspice, cloves and a few small peppers), 3 pounds sugar, light brown or white. Let cucumbers stand in salt water overnight. Put cucumbers together with spices and sugar into cold vinegar. Heat and boil two or three minutes. Pack tightly in jars, fill with the boiling vinegar, and seal. If vinegar is too strong a quart of water may be added.—L. Denk, Encinitas.

Sweet Pickles

Wash small cucumbers and put to soak in hot salt water strong enough to bear up an egg. Let soak for 24 hours, then scald three times, letting them stay in the water until cold each time. Scald enough vinegar to cover them, add sugar and whole spices (as for any sweet pickles). Pour over pickles while hot and seal. I also add a small piece of alum to vinegar.—Subscriber.

Two Good Ones

Here are two very good recipes for sweet pickles, both excellent, but the first much simpler:

No. 1—Soak the cucumbers over night in strong salt water. In the morning wash and dry. For a quart of pickles take two and a half cups vinegar. Tie up in a cloth bag 1 level teaspoon cloves, 1 of allspice, cinnamon and celery seed. Mixed spices may be used instead. Heat to boiling the vinegar, spices and 4 tablespoons sugar. Put in the cucumbers and when they come to a boil let boil just two minutes. Can at once.

No. 2—Put the cucumbers in a stone jar and cover with boiling water. Let stand over night. In the morning wipe dry and put in fruit jars with 3 or 4 pieces of horseradish root. To 1 gallon vinegar add 1 cup sugar, 2 tablespoons mixed spices, 1 tablespoon grated alum. Let this come to a boil and pour over the pickles and seal up at once.—Laura Watson, Modesto.

Stuffed Sweet Pickles

Make a brine that floats an egg and soak in it for 12 days 12 large ripe or green cucumbers of uniform size. Remove the cucumbers and soak them in fresh water for 24 hours. Split the cucumbers lengthwise, remove the seeds and place them in a kettle with alternate layers of grape leaves. Over each layer sprinkle a little pulverized alum. Cover with equal parts water and vinegar and heat to boiling point. Remove the pickles and stuff them with seeded raisins and cubes of lemon. Use a lemon without the rind removed to a pound of raisins. Tie the parts of each cucumber together and place them in a jar. Sprinkle whole cloves and cinnamon over each layer. Make a syrup of 1 quart sugar to 1 pint vinegar and pour over the pickles. Each morning for nine days take off the syrup, reheat, and pour over the pickles.—Mrs. O. O. Carpenter, Earlimart.

Spiced Grapes

One-half gallon grapes, syrup of 1 quart sugar, 1 pint cider vinegar, 1 tablespoon mixed spices. When syrup has boiled thoroughly pour in grapes, cook 1 minute and seal (spices should always be bound in cloth).—Mrs. Maud R. Obarr, Santa Ana.

Peach Pickle

Select cling peaches of uniform size, peel and wash. 6 pounds peaches, 8 pounds sugar, 1 pint vinegar, ½ cup water, 1 teaspoon cloves (put one in each peach), few sticks of cinnamon. Make good rich syrup, drop in peaches, boil until tender, can, then pour syrup over and seal.—Mrs. Obarr.

Flaming Tokay Grape Sweet Pickle

Seven pounds grapes cut from cluster with scissors, leaving a stem stopper in opening. Syrup 3½ pounds sugar, 1 pint vinegar, ½ cup water, 1 teaspoon whole cloves, cinnamon. Boil grapes until hot through, then can.—Mrs. Obarr.

Sweet Green Tomato Pickle

Choose mature green tomatoes. Peel, prick, salt and drain over night. Boil syrup of 1 quart vinegar, 3 pounds sugar. Add mixed spices and ½ cup white mustard seed and tomatoes enough to be covered by syrup. Cook until tender.—Mrs. Obarr.

Watermelon Rind Sweet Pickles

Ten pounds watermelon rind. Trim carefully all outer rind and red. Cut in uniform sizes, boil in clear water until cooked but not soft. Make syrup

of 2 pounds white sugar, 1 quart vinegar, ½ ounce cloves, 1 ounce cinnamon. Pour this syrup boiling hot over rind three days in succession and seal.—Mrs. Obarr.

Satsuma Plum

Peel very thin skin off 7 pounds plums. Use 3 pounds sugar, 1½ pint vinegar (cider), cinnamon and cloves to suit taste. Bring this syrup to boil. Drop in fruit and cook until fruit can be pierced with straw. Lift fruit gently to jar. Cover with syrup.—Mrs. Obarr.

Crabapple Sweet Pickles

Nine pounds crabapples, cored or whole as you choose. Steam until just done.

Make syrup of 1 quart good cider vinegar, 2 pounds sugar (cinnamon bark and cloves in cloth). Pour syrup boiling hot over fruit for three days.—Mrs. Obarr.

Sweet Pickled Carrots

Select young carrots of uniform size. Boil until tender, cool and pack in glass jars. Fill jars to overflowing with hot syrup made by boiling together for five minutes 1 pint vinegar, 1 cup sugar and 2 tablespoons mixed spices. Seal the jars at once.—Mrs. Carpenter.

Sweet Crabapple Pickles

Select a peck of highly colored ripe crabapples, wash and cook them in the following syrup until almost transparent: 2 quarts vinegar, 3 quarts brown sugar, spice bag containing 1 tablespoon whole cloves, ¼ ounce cinnamon. Transfer the apples to glass jars. Cover with the boiling syrup and seal.—Mrs. Carpenter.

Dutch Pickles

One dozen green peppers, 1 dozen ripe peppers, 1 dozen green tomatoes, 1 dozen onions, 2 cups brown sugar, salt to taste, 3 cups vinegar. Take seeds out of peppers and grind or chop them, also onions and tomatoes. Cook until tender and seal.—Subscriber.

(Subscriber who sent this recipe asked us not to use her name in paper. But she also forgot to give us her address, so we ask her to mail address of one to whom she wishes subscription credit given, that we may be able to send the Cultivator.—Edit.)

MADE MADE WASHING FLUID

Here is a washing fluid vouched for by Mrs. F. P. Moore of Rucker, Arizona. Mrs. Moore gave the recipe for mixing and directions for using to members attending the last meeting of the Rucker Home Club. Here they are:

"Ingredients: Two pounds of unslaked lime, four pounds sal soda, one-half pound borax, 20 quarts or five gallons of water.

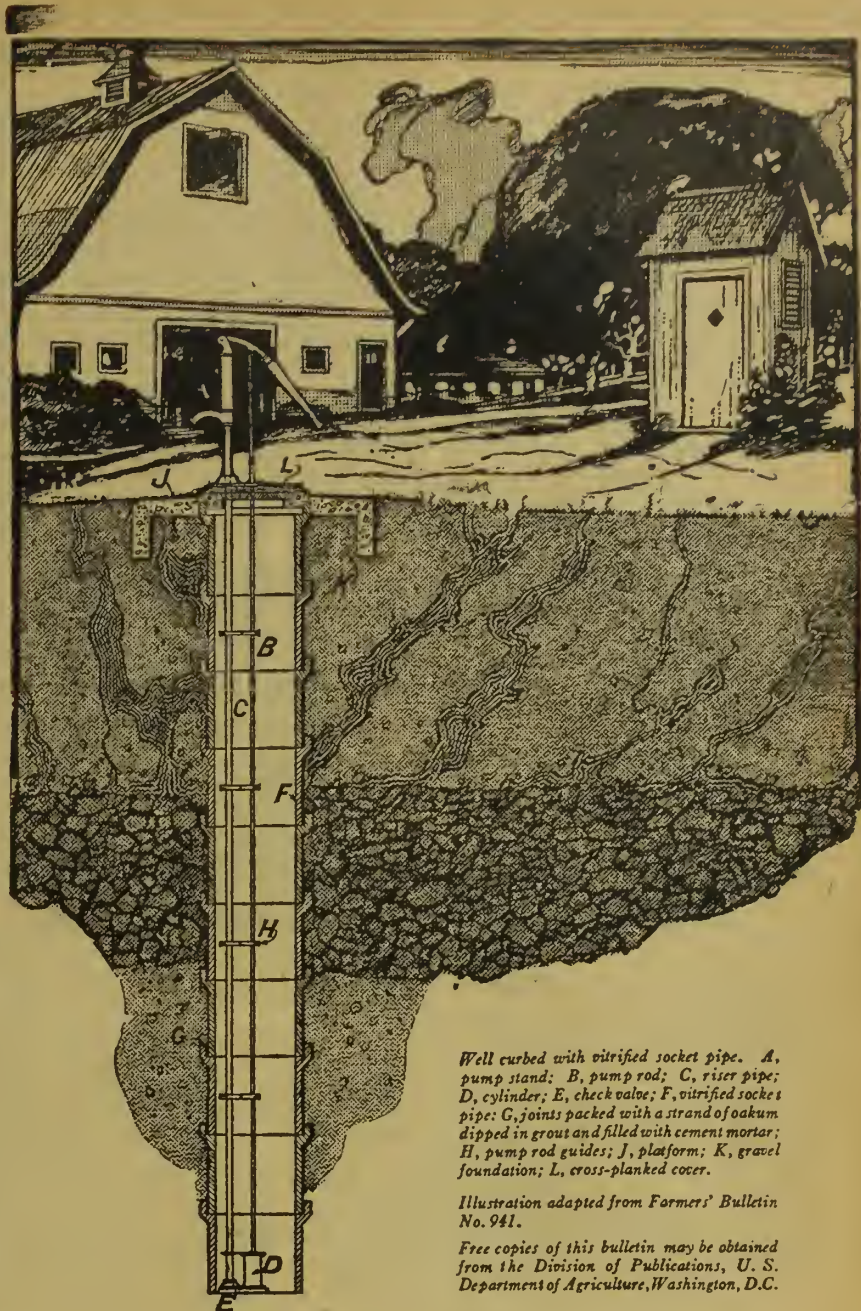
"Method of mixing: Mix all ingredients together and let boil 20 minutes to half an hour. Stir occasionally while boiling. Remove from the fire and let stand all night to allow sediment to settle. Next morning take off the clear liquid and bottle; the sediment may be saved and used for scrubbing floors, porches, etc.

"The above amount is sufficient for the average family for six months and costs about \$1.

"Directions for washing: Sort the clothes and soak them overnight in cold water. In the morning, fill a boiler with cold water to which add one-half cake of laundry soap shaved fine and one cupful of the washing fluid. Wring soaked clothes and place them in the boiler, putting in the least soiled clothes first. After the boiling point is reached let them boil 20 minutes. No rubbing is necessary. After boiling, the clothes are removed from the boiler and rinsed thoroughly in four waters, blueing being added to the last rinse water. Keep the first rinse water warm and add colored clothes, such as gingham, to this water and work up and down with the hands. No rubbing is necessary.

"If any clothing, such as men's overalls, have tar or grease on them, they can be cleaned by placing the garment on a board or table and scrubbing with a scrub brush and soap. Then boil them in the washing fluid, using proportions given above, for 20 minutes and they come out clean.

"If one is using a washing machine, one-half cupful of fluid may be added for each four gallons of water used in the machine. It greatly facilitates cleansing. This fluid is neither hard on the clothes nor on the hands."



Well cased with vitrified socket pipe. A, pump stand; B, pump rod; C, riser pipe; D, cylinder; E, check valve; F, vitrified socket pipe; G, joints packed with a strand of oakum dipped in grout and filled with cement mortar; H, pump rod guides; J, platform; K, gravel foundation; L, cross-planked cover.

Illustration adapted from Farmers' Bulletin No. 941.

Free copies of this bulletin may be obtained from the Division of Publications, U. S. Department of Agriculture, Washington, D.C.

TWO OUT OF EVERY THREE WELLS ARE POLLUTED!

Out of 51,544 wells on farms recently tested by the U. S. Public Health Service, more than 2 out of every 3 indicated impure water! Yet almost every farmer insisted his water was the best in his county. The common fault was dug wells, without watertight casings to prevent seepage from barnyards, privy vaults, etc., leaking into the water.

These figures are alarming. Yet it is hard to believe that your water which tastes, looks and smells so clean is exposing your whole family to typhoid, dysentery and other water-carried diseases—but neither did these other farmers believe it until the Health Officers found 2 out of every 3 wells to be unsafe.

Considering cleanliness, tightness, durability and cost, perhaps no lining is better than heavy, Vitrified Salt Glazed Sewer Pipe. Either socket or ring pipe may be used. Socket pipe leaves smoother joints inside than does ring pipe or drain tile, and the joints are more easily made tight, advises the U. S. Department of Agriculture in Farmers' Bulletin No. 941.

Provide safe water for your family! Write for booklet.

CLAY PRODUCTS ASSOCIATION

CHICAGO PITTSBURGH

VITRIFIED CLAY

Well Tubing



Los Angeles Markets

Los Angeles, August 11, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 63 cents.

Dairy Exchange prices last week on extras:

Aug.	4	5	6	7	9	10
'20	62	62	62	62	62	63

CHEESE

Brokers' prices:

California flats, 28@30 per lb.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 54 per dozen; case count Prod. Exch. closing price 51 per dozen; pullets, Produce Exchange closing price 47 per dozen; pewee pullets, 31. Dairy Exchange prices last week on extras:

Aug.	4	5	6	7	9	10
'20	54	54	54	54	54	54

POULTRY

Price to producers: Hens, lt., 20; heavy, 28; colored, 32; broilers, 29@32; roasters,

38; old roosters, 14; fryers, 32; ducks, old, 17; ducklings, Pekin, 3½ up, 20; others, 17; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47. Belgian hares, live, 13@17; old, 9.

LIVESTOCK

Los Angeles, Aug. 10.—Weighed and delivered off cars without food or water: Hogs (hard-grain, 125 to 175 lbs., 15.50; 175 to 225 lbs., 16.50.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50. Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, August 10, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market steady. Local: Early and White Rose, fancy No. 1's, mostly 1.25@1.50; No. 2's,

50@75c per lug; 100 lbs. sacked No. 1's, 2.50@2.75. Stocktons, 3.25@3.50.

Carrots: Supplies liberal. Market weaker. Sales to jobbers: New Stock: Burbanks mostly 3.00.

Onions: New Stock—Reds 1.40, Yellows 1.50, per 100 lbs. sacked.

Carrots: Demand and movement slow, market dull. Quality and condition good. Sales to jobbers: Stocktons: 100 lb. sack Yellows mostly 1.25, Reds mostly 1.15, Whites 2.00.

Garlic, lb., 20@25.

VEGETABLES

These are the actual prices obtained August 10 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 8@9; Limas, 5@6.

Beets: Doz., 35@40.

Cabbage: Supplies moderate, market steady, movement good, wide range in quality. Best mostly 3½ per lb.; per field crate, best 3.00@3.25.

Carrots: Doz., 35@45.

Celery: Doz. bunches, 1.25@1.40.

Corn: Local, 60@80 per box.

Cucumbers: Market dull; local, best, lug, 40@60.

Egg Plant: Lb., 5@7.

Lettuce: Local, cr., best, 1.00@1.50.

Peas: Northern, lb., 10@12.

Peppers: Bells and Chillis, lb., 6@7.

Squash: Local summer, large lugs, 60 @80; Italian, lug, 80@1.00.

Tomatoes: Local lugs, 60@80; poorer, 40@60.

Turnips: Per dozen, 30@40.

DECIDUOUS FRUITS

These are the actual prices obtained August 10 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: New Stock—5@8 per lb., according to size and quality. Boxes, Gravensteins, 3.00@3.50, according to size. Crabapples, supplies moderate, lug 1.00@1.25.

Apricots: Local, lb., 7@8.

Bananas: lb., 10½@11.

Berries: Blackberries—Supplies light, per crate, mostly 3.75@5.00. Raspberries crate. Strawberries—Local, supplies moderate, market steady, per crate, 4.75@5.00.

Cantaloupes and Melons: Cantaloupes—Market weak, supplies heavy, quality and condition wide range. Local: Tiptop, pink meats, quality and condition good, crates, 1.25@1.50. Watermelons, lb., 1@2.

Cherries: Supplies light, market firm; various varieties, best, mostly 15@24 per lb.

Grapes: Malagas, lb., 10@12; Thompson Seedless, 7@8.

Peaches: Local, best, lug, 1.60@2.00; Northern, lb., 4@5.

Plums: Lb., 7@10.

Pears: Bartlett's, best, lb., local, 6@8; Northern, 10.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 3.00@3.25; special packed brands, 4.00@4.25.

Lemons: Market dull, wide range in prices. Local stock: Packed, 3.50@4.00; loose, 1.25@1.75; lug, mostly 75.

Oranges: Supplies moderate, market steady. Valencia's, packed special brands, 126's, 6.00@6.25; 150's and 176's, 6.25@6.50. Local packed, second grade, 3.00@4.50. Packing house culls, 75@1.25 per lug.

GRAIN AND FEEDS

Grain Exch. prices bid August 10:

Corn: Yellow, No. 2, bulk, 3.15.

Barley: Carlots, on track, 2.50@2.57½.

Kafir: Eastern No. 3, 2.71¼.

Bran: Colorado, 51.50.

Milo: No. 3, carlots, 2.71¼@3.05; Eastern No. 3, 2.72½.

Wheat: Mixed feed, Northern, 60.00.

HAY

Alfalfa Growers of California report: All the alfalfa hay of the better grades listed with us this week found a ready market at prices averaging the same as last week. Demand for these grades is exceeding the supply and it looks as if it would continue to be the case from now on. Offerings by growers of these better grades have become comparatively smaller in volume than those of lower quality, as a result of which the discount on such inferior or damaged lots has widened somewhat. The tendency among growers seems to be just now to market their lower grade hay in preference to the better grades. It is difficult to determine definitely at this stage to what extent they are doing this, because they want to hold their better quality hay for sale later on, or whether the cause is the relatively lighter average production of first class hay. We know the latter to be the case in some of the important producing sections. Should the general final result be a comparatively smaller production of first class hay, as now seems probable, this would of course by and by stiffen the demand for the lower grades and they would therefore sell to better advantage than at this time of the year when there is still a fair supply of first class hay available to buyers. There were approximately 1,900 tons of hay of all kinds received on the tracks the week ending August 7 as against 2,000 tons received the week before. There were 500 tons left over unsold.

Choice Alfalfa 40.00
No. 1 Dairy Alfalfa 34.00
Standard Dairy 31.00
Stock Hay 26.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats 23.00@25.00
Barley 16.00@22.00
Alfalfa 24.00@30.00
Barley straw 8.00@10.00

WEATHER REPORT

Stations	Wk.	Season.	Norm.	Max.	Min.
Eureka	.00	.12	.12	62	52
Red Bluff	.00	.01	.00	104	61
Sacramento	.00	.00	.00	100	50
San Francisco	.00	.00	.01	75	51
San Jose	.00	.00	.00	92	52
Fresno	.00	.00	.00	106	64
San Luis Obispo	.00	.00	.03	86	50
Los Angeles	.00	.00	.00	88	61
San Diego	.00	.00	.00	80	67

FARMERS!

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United States Senate

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other crop growers in California.

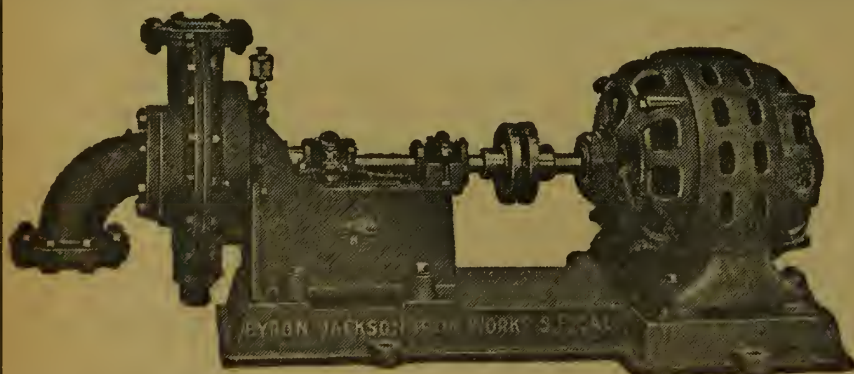
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2. Strict Government Economy.
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4. Cooperative Marketing Associations.
5. Water Conservation by Mountain Forestation.
6. Reclamation of Arid Lands.
7. Stopping of Japanese Immigration.

Vote for A. J. WALLACE

For United States Senate

Primaries, August 31



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Write us giving your water conditions and requirements.
Our New Catalog No. 60-B for the asking.

Byron Jackson Iron Works, Inc.

Los Angeles

San Francisco

Visalia

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Salt Lake

San Francisco Markets

San Francisco, Aug. 10, 1920.

BUTTER

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras 60½

Dairy Exch. prices Extras this week and year ago:

Aug.	3	4	5	6	7	9
'20	60½	59	59	60½	..	60½

'19 57 55½

Receipts week ending Aug. 9, 3,035 cwt.

CHEESE

Dairy Exchange quotations:

Jack, full cream 23@26

Cal. Y. A. 36

Ore. Trips 29½

Cal. Flats 32

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 59

Extra Pullets 52

Undersized 39

Dairy Exch. prices this week and year ago:

Aug.	3	4	5	6	7	9
'20	58½	61	61	58½	..	59

'19 62½ 60½

Receipts week ending August 9, 356,820 dozen.

POULTRY

Wholesale prices are:

Leghorns, 24@28; large, 35@36; roosters, young, 45@50; old, 18@20; broilers, 35@39; fryers, 38@40; turkeys, 37@40.

Ducks: Indian Runner, 21@23; Pekin, 21@23. Squabs, 50@55; pigeons, doz., 2.25@3.00.

Belgian hares, live, 17@20; Jack rabbits, dozen, 1.50@3.50.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 9½@10; do, 1,200 to 1,400 lbs., 9@9½; do, second quality, 7@8; thin, 6@7. Bulls and stags: Good, 4@5; fair, 3@3½.

Cows and heifers: No. 1, 8@8½; second quality, 6@7; common to thin, 2@4.

Calves: Lightweight, 10½@11½; medium, 9@10; heavy, 10@10½.

Lambs: Milk, 8½@9; yearlings, 8@9.

Sheep: Wethers, 7@7½; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 16; 150 to 225 lbs., 16½; 225 to 300 lbs., 16; 300 to 400 lbs., 15.

California Farm Bureau fat hog auction sales: Fresno, July 23, 13.45@16.80. Tulare, July 27, 14.00@16.80. Visalia, July 27, 14.40@16.40. Hanford, July 29, 10.00@16.85.

POTATOES AND ONIONS

Potatoes, per cental: Delta, 2.50@2.75; choice, fancy, 3.00@3.25; sweets, 10@15 per lb. for No. 1.

Onions: New reds, 50@60; yellows, 1.35@1.50 cr.; green onions, 1.25@1.50. Garlic, new, 10@12½.

VEGETABLES

Wholesale selling price:

Beans: Lb., String, 3@5; Lima, 8@10.

Cucumbers: Bay, 50@65.

Corn: Sack, 1.50@3.00.

Eggplant: Livingston, lug, 50@75.

Okra: bx., 1.00@1.25.

Peppers: Bells, lug, 50@75; Chilli, lug, 40@50.

Peas: Lb., green, 4@7.

Squash, Summer: Sacramento, lug, 40@60.

Tomatoes: 45@75 per large lug and 40@50 for small; rivers, 25@50.

FRESH FRUITS

Apples: Red Astrakan, 4½-tier, 1.00@1.75; 4-tier, 1.75@2.25; Gravensteins, 2.50@2.75 for 4-tier; 2.25@2.50 for 4½-tier; 2.75@3.00 for 3½-tier; Crabapples, 50¢ 1.00 per small box; Red June, 1.50@3.00; William's Favorite, 1.50@3.00; Alexander, 1.00@1.75.

Apricots: Imperial Valley, Los Angeles lugs, 4@8 per lb.

Bananas: Lb., 8½@10.

Berries: Strawberries, large, 75@90.

small, 50@65. Loganberries, red, 50@60 per drawer. Raspberries, 75@90 per drawer. Blackberries, 50@60 per drawer.

Cherries: Black, lb., 10@18, according to quality; Royal Annes, lb., 10@18.

Cantaloupes and Melons: Cantaloupes—Ponies, 90@1.25; standard, 1.25@1.75; flats, 50@75 per box; Honey Dew, crate, 75@1.25; casabas, nominal. Watermelons—Imperial Valley, 1½@2 lb.

Figs: 1.00@1.25 for white and Bruns-2.00@2.25.

Grapes: Malaga, 2.00@2.50 per crate; Dietties, 4.00@4.50; Seedless, 2.25@3.00.

Nectarines: Red, cr., 2.00@2.75; White, basket, 2.00@2.30.

Peaches: Per small box, 90@1.25; baskets, 75@1.25. L. A. lugs, 1.50@1.75; large lugs, 2.00@2.25.

Pears: Lug, 2.00@2.50.

Pineapples: Doz., 3.00@4.00.

Plums: Cr., 1.00@2.00.

CITRUS

Box: Lemons, standards, 2.00@4.00; grapefruit, 4.25; Valencia's, 5.00@6.00.

BEANS

California Bean Growers' Association, San Francisco, August 2:

At the present writing it is very difficult to state just what the market is, as some of the dealers are quoting ridiculously low, endeavoring to move some of their stock on which they are obliged to liquidate. The offerings for shipment are about as follows:

Pinks	6.40@6.65
Large Whites	6.00@6.25
Small Whites	5.75@5.90
Blackeyes	8.00@8.25
Bayos	10.00@10.50
Mexican Reds	8.00@8.50
Red Kidneys	14.50@15.00
Cranberries	7.00@7.25

DRIED FRUIT

Peaches—1920.

California Peach Growers, Inc., prices:

Practically peeled—
Cartons, 60 11-oz. per case..... 9.00
Cartons, 24 2-lb. per case.....10.20
Cartons, 10 5-lb. per case.....10.50
Apricots—1920.
California Prune and Apricot Growers,
Inc., prices:
"Growers" "Sunswet"
Choice@22½@24
Extra choice@24½@26
Fancy@26½@28
Extra fancy@@30
Fancy, Moorpark@@30
Extra fancy,
Moorpark@@33
Standards@18
Slabs@20
Flgs—1920.
Roeding Flg & Olive Co. prices to
growers: White Adiratics 7 cents net.
Mission figs at a basis of 6 cents.
Schedule announced White Adriatic,
bulk in 50 pound boxes: Standards, 9;
choice, 11; fancy, 13; extra fancy, 15.
Black Mission figs in 50-pound boxes:
Standards, 7; choice, 10; fancy, 12; extra
fancy, 14.

GRAIN
Wheat: 3.50@3.80.
Oats: Red feed, No. 1, 2.40@2.60; Seed,
2.85@3.00.
Corn: California Yellow, nominal; Cali-
fornia milo maize, 3.10@3.20.
Barley: No. 1 feed, 2.35@2.45.

HAY
Alfalfa Growers of California under
date of August 1:
No. 1 Dairy Alfalfa.....32.00
Standard Dairy29.00
Stock Hay26.00
Under date of August 7, A. W. Scott Co.
says:

Receipts past week 3,344 tons. Some
little is coming in upon consignment in
cases where no direct offers have been
made satisfactory to producer. The
market has gone off practically 2.00 a ton
on all grades. With an unusually light
demand in prospect and a fair sized crop
averaging up all over the state, indica-
tions are that lower figures will be
reached before warehouse and carrying
charges are made for the season. In-
terior demand is fair and there is more
business going on throughout the state
than in our local market. Export has
been practically confined to a few ship-
ments for government account on exist-
ing contracts.

We quote today wholesale prices in
carload lots as appear from dealers' trans-
fers upon the hay market in San Fran-
cisco (for prices to consumers charges
of cartage, commission and handling
expenses must be added according to condi-
tions):

Per Ton
Wheat Hay, fancy.....27.00@29.00
Wheat Hay (light 5-wire
bales)24.00@26.00
Tame Oat Hay24.00@26.00
Wild Oat Hay18.00@20.00
Barley Hay18.00@21.00
Alfalfa Hay, first cutting.....18.00@23.00
Alfalfa Hay, second cutting..22.00@26.00

Citrus Markets

Los Angeles, August 11, 1920.

Orange market strong without any spe-
cial feature.

Lemons are slightly more attractive to
the market though the foreigners are get-
ting theirs occasionally, one bunch sell-
ing as low as 65 cents. The weather has
warmed up somewhat which is aiding ma-
terially in the lemon situation.

Shipments

Shipments to date from Southern Cali-
fornia since Nov. 1, 1919: Oranges, 26,627
cars; lemons, 6,842; total, 33,469. To same
date last season: Oranges, 29,973; lemons,
8,586; total, 38,559. From Central Cali-
fornia to date this season: Oranges, 5,375;
lemons, 258; total, 5,633. To same date
last season: Oranges, 3,714; lemons, 251;
total, 3,965. Northern California this
season: Oranges, 261; lemons, 23; total,
284. To same date last season: Oranges,
244; lemons, 2; total, 246.

AT THE AUCTIONS

August 9

New York: 13 or., 1 grapefruit, 5 mixed,
1 lem. Val. 1.50-7.90, lem. 4.50-4.85, grape-
fruit 70-2.90, halves 65-1.75.

Boston: 11 or., 3 lem. Val. 3.80-7.80,
lem. 80-4.10, grapefruit 2.05-3.45, halves
50-1.75.

August 10

New York: 16 cars mixed. Val. 4.05-
7.75, grapefruit 1.50-4.45.

Boston: 6 or., 1 lem. Val. 4.10-7.45,
grapefruit 2.85, lem. 3.00-3.25.

St. Louis: 1 or., 1 lem. Val. 3.80-5.00,
lem. 1.95-2.20.

BETTER STATE FAIR

(Continued from Page 203.)

Patterson will come forward with a
high class lot of Percherons and Bel-
gians. Easton and Ward of Diablo
will dominate the Shire classes with
their usual high class showing. M.
Bassett of Hanford will exhibit Per-
cherons, as will Palo Alto Percheron
Farm, Palo Alto; L. A. Hall, Moun-
tain View; Romie C. Jacks, Monterey;
James Marwick, Santa Barbara; Thos.
Harrison, Santa Rosa, and others.
Merritt-Bowers Company, Tulare, will
show Belgians and the estate of Thos.
B. Dibblee will show Clydesdales.

**RHUBARB---Wagner's Giant
Plant Now**
August is a Good
Month to Plant

Growers who planted last July and August have
already harvested over 15 tons per acre netting
\$1000 eleven months from planting. For further
information, write J. B. Wagner, Rhubarb Specialist,
1550 East Villa St., Pasadena, Cal.

Secretary Paine expects the night
horse show program will hold greater
interest this year owing to the fact
that many new horses will come in
competition.

The sheep division continues light.
No satisfactory explanation has ever
been advanced as to why stronger
sheep classes are not presented in
this state with our many nationally
known flocks. C. Harold Hopkins,
Woodland, and Calla Grove Farm,
Manteca, will show Hampshires. Butte
City Ranch, Butte City; Thos. Bishop
Estate, San Ramon; G. K. Swingle,
Davis, show Shropshires. Bullard
Bros., Woodland and G. N. Merritt,
Woodland, show Rambouillets. Ital-
ian Vineyard Company, Guasti, has en-
tered Cotswolds.

There are many other features of
the fair that might be mentioned.
However, Cultivator readers should
make their plans to attend the forth-
coming fair. Old timers will find many
new features and the first time vis-
itor will find enough to keep him busy
the week through. The fair is a great
educational institution and if made full
use of one can learn an astonishing
number of things in a very short time.
The directors and the commercial and
civic organizations of Sacramento,
have completed many plans that will
add to the comfort of the expected
thousands. For a good time and a
profitable week attend the fair.

Sonoma County Fair

Santa Rosa

August 23rd to 29th

Many Big Track Events

Complete Live Stock Show, \$10,000 in premiums.
Two Days' Rodeo Carnival.
Four Days' Running and Harness Races.
50 Mile A. A. A. Auto Race for \$2500.00 purse.
High Class Dog Show, \$1000.00 in cash and trophies.
Night Horse Show, unrivaled by any in the State.
Show opens Monday, August 23rd, with the million dollar
parade, the greatest Stock parade ever attempted in California.
Come, bring your friends.

H. J. WALKER, Secy **Santa Rosa, Cal.**

Dog Show entries close August 19th. Send entries
to John Bradshaw, 528 Market St., San Francisco.

When Writing Advertisers Mention California Cultivator



The Oliver No. 7 Plow

An Oliver Orchard Plow also is made especially
to work with the Fordson.



Roderick Lean Automa-
tic Disc Harrow

Built in seven foot size. Other
sizes are also made for spe-
cial conditions. Complete line
of specialized tractor spike
tooth, springtooth and orchard
harrows.

Amasco
Tractor Drill

Accurately sows wheat, oats,
rye, barley, rice, peas, beans,
etc. Furnished in plain grain
or combined grain and ferti-
lizer styles, and with wood
or steel wheels.



How 100,000 Farmers Plow

The Fordson Tractor - The Oliver Plow

A well plowed field is the first require-
ment for a perfect seedbed. It is abso-
lutely essential for a maximum harvest.

Throughout the world progressive
farmers are doing their plowing in the
newer, better way. With reliable
Fordson power they are using specially
built Oliver Plows to turn a uniformly
good furrow.

Special Oliver Plows, in types to meet
any soil conditions, are designed and
built to work with the Fordson. That
is why the work measures up so fully
to what a good plowing job should be.
Oliver Plows will do for you what
they have done for 100,000 Fordson

farmers in America—make your plow-
ing easier and better.

To fully prepare your seedbed you
also will want to use the Roderick
Lean Automatic Disc Harrow which
was designed especially for the Ford-
son. With the ground prepared, the
Amasco Drill and the Fordson Trac-
tor make certain proper seeding. All
of these implements are automatic in
action, being controlled by the operator
from the tractor seat.

Farming the Fordson way with special
Fordson tools is the sure road to com-
plete satisfaction. See the Fordson
Dealer in your town.

Distributor of These Implements

William L. Hughson Co.

San Francisco, Oakland, Los Angeles and San Diego, Cal.

POWER FARMING BRINGS THE GREATEST PROFIT

THE STANDARD
SINCE 1852

SPERRY
ROLLER
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DRIFTED SNOW
CHOICEST
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FLOUR
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SPERRY FLOUR CO.
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IN EVERY HOME-
for every purpose

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles

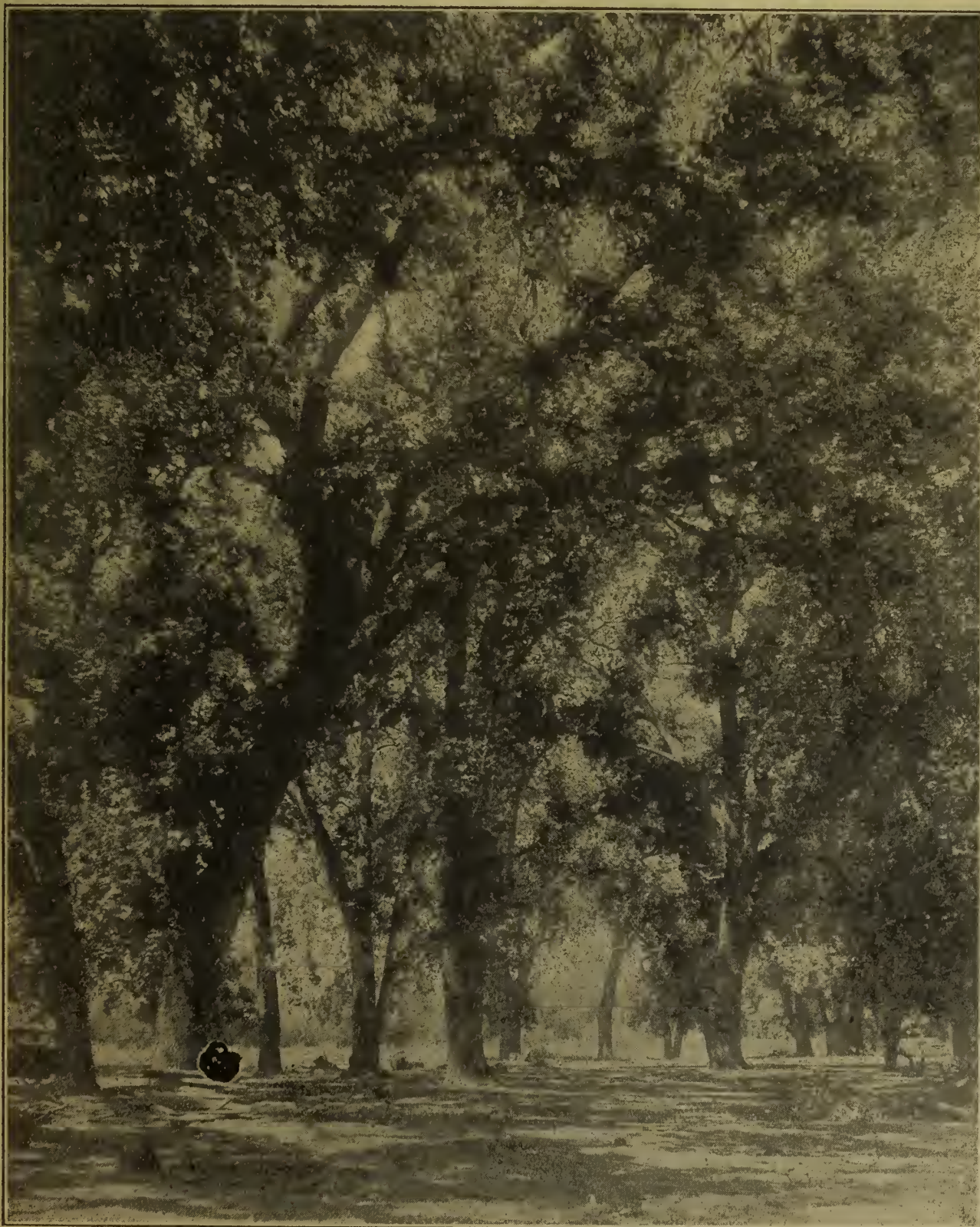
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San Francisco

Vol. LV

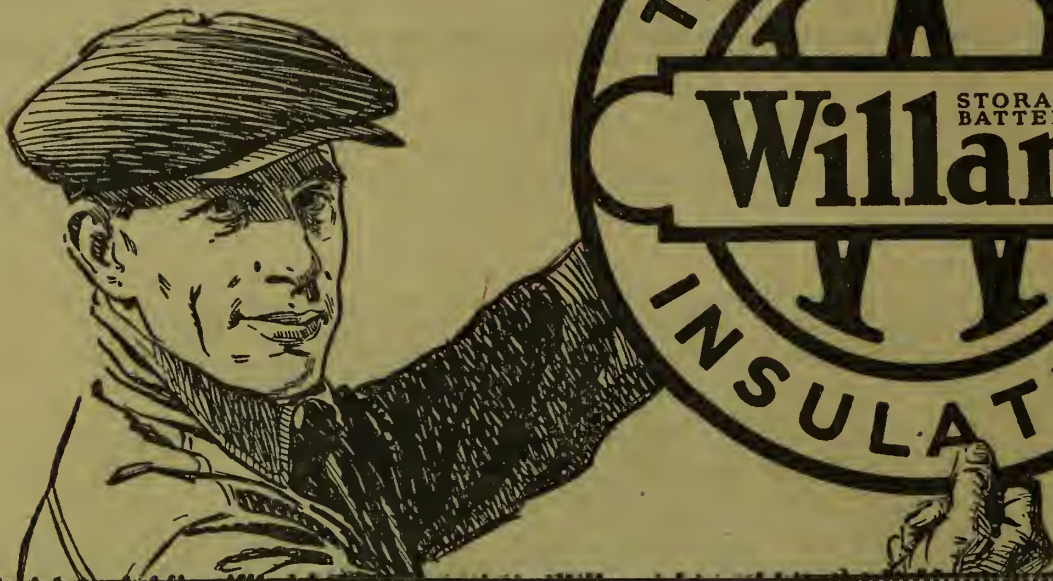
August 21, 1920

No. 8



A Shady Place in Sunny California

Willard STORAGE BATTERY



This trade-mark is branded in red on one side of the Still Better Willard—the only storage battery with Threaded Rubber Insulation.

Remember!

That in the ordinary storage battery the insulation is the weakest link.

That in the ordinary battery both plates and insulation wear out.

That with the ordinary battery the big expense and risk come when you have to tear down the battery and put in new insulation—perhaps with the result that you ruin the plates.

That in the ordinary battery, the insulation between plates carbonizes, causing leakage of current; and perforates, causing short circuits and permitting "treeing."

That the ordinary battery has to be shipped and stored wet or partly wet—aging and deterioration are almost sure to take place.

1 That in the *Still Better Willard* the Threaded Rubber Insulation is the *longest lived* part of the battery.

2 That in the Still Better Willard the wear is *cut in halves*—for Threaded Rubber Insulation does not wear out; it is not affected by the solution.

3 That with the Still Better Willard the Threaded Rubber Insulation prevents this expense and risk.

4 That with Threaded Rubber Insulation these faults, which greatly reduce the efficiency of the battery, *cannot occur*.

5 That the Still Better Willard with Threaded Rubber Insulation is shipped "*bone-dry*," not a drop of moisture in it. It begins service in your car as fresh as when built.

Willard Service.

Of the 191 passenger cars and trucks using Willard Batteries as standard equipment, 138 have adopted the Still Better Willard with Threaded Rubber Insulation.

138 Manufacturers Using Threaded Rubber Insulation

Acason	Giant	Parker
Acme	Glide	Peerless
All American	Great Western	Peugeot
Allis-Chalmers	Hahn	Phianna
American	H C S	Pierce-Arrow
LaFrance	Hurlburt	Premier
Apex	Hawkeye	Preston
*Apperson	Haynes	Ranier
Armleder	Henney	*Reo
Atterbury	Highway	Republic
*Auburn	Holmes	ReVer
Austin	Holt	Riddle
Bacon	Hupmobile	Robinson
Bell	Indiana	Rock Falls
Belmont	International	R & V Knight
Bessemer	(I. H. C.)	Rowe
Betz	*Kissel	Sandow
Biddle	Koehler	Sayers
Brockway	Lancia	Seagrave
Buffalo	Lexington	Selden
*Buick	*Liberty	Service
Cannonball	Luverne	Shelby
Capitol	Madison	Signal
*Case	Marmon	Singer
*Chevrolet	Menominee	Southern
Clydesdale	Mercer	Standard 8
Cole	Mercury	Standard
Collier	Meteor	Stanley
Colonial	(Phila.)	Studebaker
Comet	M H C	Stutz
Commerce	*Mitchell	Sunbeam
Commodore	Murray	Tarkington
Cunningham	McFarlan	Tiffin
Daniels	*McLaughlin	Titan
Dart	Napoleon	Tow Motor
Dependable	Nash	Transport
Diamond T	Nelson	Traylor
Dixie Flyer	Nelson &	Ultimate
Dodge	LeMoon	Velie
Dorris	Noble	Vulcan
Fargo	Northway	Ward
Fergus	Ogren	LaFrance
Ferris	Old Hickory	*Westcott
F W D	*Olds	White
Franklin	Oncida	Wilson
Fulton	Oshkosh	Winther
Garford	*Paige	Winton
G M C		Wolverine

*For Export

California Cultivator

Vol. LV, No. 8

Los Angeles, August 21, 1920

One Dollar Yearly

Lack of Uniformity in Fumigation Results

By H. J. Quayle Before Pomona Fumigation School

THE keynote of successful fumigation is attention to details. In firing a charge of hydrocyanic acid it is just as important that everything first be set right as it is that everything be set right before firing an artillery piece. There must be the right sort of ammunition and in the proper amount. It is almost as useless to direct a gun with two mile range against a three mile object as it is to direct a dose of cyanide that is insufficient to reach and kill the insects in all parts of the tree. As to the sort of material, that is attended to by the manufacturers, and we can trust them to supply us with uniform material. Like carrying on a military campaign, fumigation must be carried on at the proper time, the condition of the enemy and the weather considered.

Dosage

The question of dosage has received a great deal of attention by Woglum and other workers and it is still an important question. Lack of uniformity in results in some cases is due to too little gas liberated under the tent. This is particularly true in the case of certain of the scales like the Citricola or gray scale. A 75 per cent schedule may give satisfactory results with this scale in some cases, more especially early in the season, but a 100 or 110 per cent schedule is certainly to be recommended for the best results. The same scale may require more gas in certain districts than in other districts. This is strikingly illustrated in the case of the red scale at Corona. The schedules in general use have not been satisfactory for the red scale in that district, and what seems to be the same situation is appearing in certain parts of Orange County. That red scale at Corona is actually more difficult to kill than the same scale in other sections I think we have abundantly proven after five years of investigation. A special schedule for the red scale under Corona conditions has been worked out and this schedule was used throughout last year in practically all of the work against the red scale in that district. The schedule amounts on the smaller trees to 120 per cent and on the largest trees to 160 per cent. We have found it necessary to increase in greater proportion the dosage of the larger trees, since it has been on the larger trees with heavy foliage that poorest results occurred.

Incidentally, we have been experimenting with an absolutely gas proof tent and find that with such a tent the dosage with the smaller trees may be reduced $66\frac{2}{3}$ per cent, while to effect the same results with the larger trees the dosage can be reduced only 50 per cent, which bears out the same point with large and small trees. We have also determined by comparative tests that the greater amount of foliage there is on the tree the greater amount of gas is required, other things being equal.

Season for Citricola or Gray Scale

It is not sufficient to use a high

dosage merely for the best results on the gray scale. It is necessary to do the fumigation work early in the season, preferably before the first or middle of October. Just as soon as the hatch is completed and the fruit is sized sufficiently, fumigation may start for this scale. This will be about the middle of July. The earliest work should be done on Navels and later on Valencias. Fumigation against the gray scale may continue later than October 15 with good results, but good results are less certain after that date.

Season for Black Scale

The fumigation season for the black scale depends upon the hatch of the scale. Where the hatch is uniform the results should be satisfactory.

The hatch of this scale varies greatly in different groves in the same district and it is not always possible to select a proper time. I know of no way of overcoming this difficulty excepting two fumigations in a season. Another point in connection with the black scale is that scales in the proper stage to be fumigated are not killed satisfactorily in certain districts. I have had some experience with this in the Charter Oak district and am not prescribing, at least just now, the solution of that difficulty.

Season for Red Scale

In most sections I believe there is no special difficulty in killing the red scale if a high enough schedule is used, but in the Corona district the

best results can be secured at a certain season. Our work there has shown that there are two stages when the red scale is most resistant to gas. These are the mature, young producing stage and the period of the second molt, and of those two periods they are most resistant during the second molt. The season of greatest activity of this scale is from June 1 to January 1 and at this time more or less are in various stages, including the second molting stage. The scale is most dormant from January 1 to June 1 or 15, and it is during this period that best results have been secured in the Corona district. It is not possible to do all of the work against this scale at the period mentioned, but only where previous work has shown great difficulty in securing

(Continued on Page 219.)

A Stock Resistant to Blight

By A. L. Wisker

EVER since Dr. F. C. Reimer pronounced the Chinese pear seedling, *Pyrus usuriensis*, the "most blight resistant species known," after years of patient testing under scientific conditions at the Southern Oregon experiment station of the Oregon agricultural college, practical orchardists have asked the question, "Will it make a good union with Bartlett?"

It is now safe to say that the cultivated type of this species makes as good a union with Bartlett and other of our commercial varieties as does the Jap seedling, or the old practically discarded French seedling. On Loma Rica Ranch we have several thousand Bartletts on *usuriensis* roots, both buds and grafts, which are as perfect

in appearance, as uniform in diameter above and below the union, and as strong at the union when effort is made to break them, as any other pear stock that I have ever seen. The greater part of this stock will be planted in Loma Rica orchard next spring, but it will only be a part of the acreage allotted to pears on this root. (Some graft unions are shown in the accompanying picture.)

We shall plant 10,000 husky, vigorous *usuriensis* seedlings in the orchard and in the fall will bud the branches to Bartlett and other desirable varieties, thus securing trees proof against blight in roots, trunk and main limb crotches—the greatest measure of blight protection possible to obtain. A few seedlings planted in orchard rows have already been budded in this fashion during the past week, and our one regret is that we cannot put *usuriensis* roots under all our old trees.

The Nevada County mountain districts have been so nearly blight free for so many years that orchardists felt the danger from this disease was practically negligible, but the expense and loss of the past few years has convinced many that our scientific authorities are right in their belief that blight hits every pear district sooner or later and that the safety of pear growing depends on making pear trees as nearly blight proof as possible.

By budding or grafting in the branches the most vital parts of the tree remain of the blight proof seedling. Should blight attack the Bartlett top it will be much more readily detected and much cheaper to eradicate it than under the old conditions where blight frequently had to be fought underground. If one of the Bartlett limbs is killed down to the point of union with the seedling grafting will soon restore it. All in all, the fact that *usuriensis* is now shown to be an acceptable stock for our commercial pears will lead to some important changes in the propagation of pear trees and will result in marked decrease in the injury heretofore done by one of the worst tree diseases known to horticulture.



Bartlett Scions on the Wild Stock

Showing the graft union of the Bartlett on the root stock of *usuriensis*, or wild pear of China.

Agricultural News Notes of the Pacific Coast

Northern California

Draymen of Colusa County have formed an association.

Sonoma County holds its fair at Santa Rosa, August 23-29.

The farm school at Davis opened its fall session Monday of this week.

The new fruit dryer at Placerville, Eldorado County, is ready for business.

The floor space of the Glenn County fair at Orland has been doubled this year.

Lassen County reports the housing situation acute, especially in Susanville.

Surprise Valley, Modoc County, reports excellent crops of grain, alfalfa and potatoes.

The state land colony at Durham plans to hold another fat hog auction September 9.

The almond crop of Northern California is expected to be only about half of last year's.

Hop pickers on the Horst Ranch near Wheatland are being paid \$1.25 a hundred pounds.

Glenn County expects to have a good rice crop. Harvest will begin about September 10.

Orland, Glenn County, shipped out its first carload of watermelons August 3. The car was sent to Portland.

Resolutions adopted by the California state board of health recommend sterilization of canned ripe olives at 240 degrees Fahrenheit for 40 minutes.

The farm bureau of Eldorado County announces that it is not in politics and that office seekers are not warranted in claiming to be farm bureau candidates.

A representative of the California Cattlemen's Association is securing new members in Lake County. A membership campaign has just been completed in Napa County.

Agreement has been reached to furnish water to the Fernley and Hazen reclamation districts of Nevada, not by taking water direct from Lake Tahoe, but by cleaning out debris and vegetable growth in the outlet.

A complete survey has been made of the Lookout-Bieder irrigation project near Alturas, Modoc County, and of the storage possibilities of the Pit River canyon. The findings have been favorable and it is hoped soon to form an irrigation district.

A meeting of representatives of more than 25 irrigation and development organizations of the Sacramento Valley was held in Sacramento last week to attempt coordination of effort of all water users in one program of development and conservation.

State olive growers and health officials of San Francisco recently held conference to consider best action to take in canning practices and equipment to give assurance to the trade as to the perfect safety and healthfulness of the California ripe olive.

No decision has been rendered in the Lake Tahoe-Nevada contest. The Nevada growers have shown that their crops are in a serious situation and that water from the lake is necessary to save them. Californians have maintained their willingness to permit the water to go providing there is no injury to nearby property in California.

Central California

Turlock is shipping sweet potatoes as far east as Iowa.

Lodi, San Joaquin County, will ship 10,000 cars of fresh grapes.

Visalia cannery is running on Elbertas with about 300 employees.

Japanese gardener at Denair was fined \$25 for selling green cantaloupes.

Alfalfa growers of San Joaquin Valley are planting extensively to hairy Peruvian alfalfa.

Figs this year will open around six and seven cents, practically half last year's price.

Cotton growers recently met at Lindsay and discussed the matter of shortage of gins to handle the coming crop.

Santa Cruz County apple growers find that it is costing 7½ cents per box for putting iron straps on all export boxes.

Bee Inspector Burdick of Inyo County is making a campaign on foul brood and has served notice for a thorough cleaning up.

Alfalfa growers of Tulare County have been selling baled alfalfa at \$28.50 f. o. b. This is the record for high price for midsummer.

Monterey County Livestock Association recently held a meeting at Salinas. There was a large attendance of members of the state association.

The last Tulare fat hog sale under direction of the California Farm Bureau Marketing Association resulted in the toppers going at \$16.80, 30 cents lower than the preceding sale.

The San Joaquin Valley planted about 27,000 acres of cotton, but it is feared not much more than half of the planting will be harvested owing to water shortage and inexperience.

Turlock farmers report Japanese making farm leases months earlier than usual. The inference is that they wish to forestall any restrictive measures which may result from the fall election.

Fresno prices for picking raisin grapes, per 22 pound tray: Muscats, 2½ cents; Thompsons, 4 cents. The price for picking, curing and putting in sweat boxes is \$27 for Muscats and \$22.50 for Thompsons.

The Turlock irrigation district has closed its season, which was 18 days longer than last year. The geological survey reports that 313,125 acre feet of waters of the Tuolumne River were wasted in run-off when ditches could carry no more.

Central California papers are calling attention to the fact that because of bad advice by men with academic minds rather than minds stored with practical knowledge there are some serious failures in cotton growing in the San Joaquin Valley this year that could have been avoided if the growers had followed the advice of experienced cotton men.

Advisory basic prices for grape picking have been named by the directors of the Valley Fruit Growers Association. Prices for picking grapes, based on a 22 pound tray, are 4½ cents for Muscats and 4 cents for Thompsons. The ton rate for Muscats is \$27 and for Thompsons \$22.50. This represents an increase of about one-half cent per tray over last year's prices.

Southern California

San Dimas reports largest crop of Navels since 1916-17.

Escondido is planning for Grape Day celebration, September 9.

Talbert, Orange County, now has four dumps in operation.

Cotton growers of Palo Verde Valley are appealing for warehousing of cotton.

Lankershim cannery is running full handed on peaches. Prices for fruit around \$90.

Elsinore apricot growers are receiving returns from early shipments of dried apricots.

Oxnard sugar factory is in full swing day and night. Seven hundred men are employed.

The second annual fair of San Diego County will be held at Balboa Park, September 22-25.

Hemet will ship about 800 tons of dried apricots. The output is much smaller than last year.

Calexico, Imperial County, shows an increase of 680 per cent in its population during the past ten years.

Blythe cotton growers are organizing and planning an advertising campaign to secure pickers and other help.

Articles of incorporation have been filed by the Perris Valley Cotton Growers Association of Riverside County.

Los Angeles County supervisors are advertising for bids for construction of flood control dam in San Dimas Canyon.

Anaheim sugar factory is running with 300 hands. The output of the factory will be 50 per cent greater than last year.

The Alamitos Beet Growers Association met in annual meeting and elected board of directors. The president is W. A. Draper.

A light rain visited the Palo Verde Valley and wiped out the greater number of the aphids which have been infesting the cotton fields.

Santa Ana Walnut Growers Association, the largest local association of walnut growers in the state, has just completed new packing house costing \$200,000.

Corona citric acid factory will increase its capacity so it will be able to handle 1,000,000 pounds of acid yearly and 12,000 to 15,000 pounds of lemon oil.

The livestock entries at the coming Riverside fair have been so liberal that the management is now asking how they can be supplied with sufficient accommodation.

The recent Colorado River Conservation Conference held in San Diego brought together representatives from Imperial and other California sections, also from Yuma, Phoenix, Colorado, Utah and Wyoming.

Sugar factories announce that they will use as a basis for initial payment 12 cent price of sugar. This is 50 per cent higher than last year's payment but rather shocking to the grower who is now paying 25 cents.

San Dimas, Los Angeles County, has a local cooperative ranchers' organization for handling ranch work. By this means small ranches have the advantage of tractors and up to date farm implements at the minimum of investment.

The Coast and General

Polk County fair, Dallas, Oregon, October 7-11.

Oregon state fair, Salem, September 27 to October 2.

Tillamook County fair at Tillamook, Oregon, September 14-17.

Grays Harbor, Washington, farmers recently held all day picnic.

The state of New York is investigating an alleged poultry trust.

Marshfield, Oregon, recently held livestock show which has stimulated interest in pure breeds.

The annual snake dance of the Hopi Indians in the northern part of Arizona was pulled off August 15 and 25.

The weather bureau reports: "Weather ideal in Arizona for cotton. Warm nights and moderately warm days with high humidity."

The first bale of cotton of the season of 1920 for the Salt River Valley of Arizona was brought in by S. S. Bradshaw of Phoenix, July 29.

Jackson County, Oregon, farm bureau has purchased immense warehouse for general farm storage purposes and for the benefit of its members.

California planted this year nearly 300,000 acres to all kinds of beans, nearly half the planting of last year. Colorado has planted 74,000 acres to Pintos.

Dairymen in the Globe district of Arizona raised the price of milk August 1 five cents a pint. The new price is 15 cents a pint and 25 cents a quart.

Carleton, Oregon, Grange has saved money for its members by buying binder twine and by establishing two gasoline stations for the use of its members.

The division of forestry of the Hawaiian Islands is planting large numbers of red mahogany, red cedar and other trees on the reserves on the island of Oahu.

Rains during the latter part of July helped out range conditions to some extent in the higher ranges of Arizona. Rains, however, throughout the state have been somewhat spotted and not as abundant as common.

A committee from Frank Luke Post, American Legion, of Phoenix, has requested that 80,000 acres of the Parker Indian reservation be thrown open for filing to ex-service men. The Parker reservation is on the Arizona side of the Colorado, and there is a considerable area of irrigable land.

Stanley P. Clark, extension agronomist of the Arizona university, has been assisting Dr. Kearney of the U. S. bureau of plant industry in rogueing the fields which have been selected for the seed crop next year. This plan of rogueing was begun in the early days of cotton growing under the direction of E. W. Hudson.

Engineers have made tentative plans for the building of two dams in the Colorado River canyon for the development of electric power. This power, it is estimated, would enable the railroads throughout northern Arizona to use electric power instead of steam. It would furnish cheaper power for the mines and permit the development of several million acres of land by making available cheap power for pumping.



It is well that there are some folks in the world with a taste for statistics. Without them, between the poultrymen who never keep accounts and the consumers who are certain all poultrymen are profiteers, and the pessimists who wail that the poultry game is a losing game at the best, we should have no solid ground on which to set our feet.

One statistician who is helping to bring order out of the chaos of conflicting guesses is F. D. Cornell, who has for several years worked out the statistical tables for the Poultry Producers of Southern California. Mr. Cornell's latest charts are interesting reading and make quite clear the status of the poultry industry in Southern California in this year of grace 1920.

Mr. Cornell assumes for purposes of calculation that the average California hen lays 120 eggs a year. This seems a low estimate, but is based on a large number of reports and agrees exactly with the figures given by the University of California. Since we know from the records of the four U. C. demonstration farms in Los Angeles County that three of these farms averaged over 170 eggs per hen and that all four averaged over 160 eggs, and since we also know that many other producers are averaging over 140 eggs per hen, we are forced to conclude that these must be balanced by a considerable number whose average is less than ten dozen eggs a year. It is these low producing hens that are keeping the average production down and lowering the standing of the whole industry, and it is the owners of these low producers whose buildings are plastered with "For Sale" signs and who are declaring there is "nothing in it."

The hen distributes her production over the year as follows: January, 8.25 eggs; February, 12; March, 15.75; April, 16.75; May, 15.75; June, 12; July, 11.25; August, 9; September, 6.25;

The Poultryman's Profit

By Jean A. Koethen

October, 4; November, 3.25; December, 5.75. In October, November and December as a rule eggs are produced at a loss, for hens must be fed, no matter how few eggs they lay. In September, 1919, eggs were produced at a loss of .0159 per hen, but in September, 1918, there was a gain of 0.91 per hen.

By the terms "loss" or "gain" per hen per month is meant the difference between the cost of keeping the hen for the month and the amount received for her eggs. It cost in 1917 21.74 cents to feed a hen a month, and the overhead was ten cents, making a total cost of 31.74 cents per hen per month. The average of the Los Angeles market per dozen eggs for 1918 was 51.16 cents, but there were three months in which the market value of the very small number of eggs produced was below the cost of keeping the hen and three others in which the average income was but slightly in excess of her keep. These are matters which must be kept in mind by boycotting consumers who insist that because they pay as high as 75 or 80 cents at certain seasons the poultryman must be rolling in wealth.

The average of the Los Angeles market for 1919 was a shade higher, since it reached 54.64, while the cost of keeping a hen a month was only 32.79 cents, but let us remember that 1919 was the one "big year" for the poultryman in at least ten years and will be possibly a bigger year than any for ten years to come. It came at the climax of a series of had years during which producers had dropped off one by one till only the fittest were left. In 1920 the industry finds 25 per cent more producers in the busi-

ness and a demand no greater than before.

Cost of Feed

The average cost of feeding a hen for a month in 1919 was 22.79 cents, about a cent more than in 1918. It cost 21 cents in January, 25 cents in August, and 23 cents in April and December. This fluctuation in cost of feeding from month to month is due partly to the fact that a hen eats more when she is laying heavily, but more probably to fluctuations in the price of feed. It cost \$2.73 to feed the average hen the whole year. This is a lower figure than many had supposed and was probably realized only when feed was bought under the most favorable conditions. Another set of figures before me in the report of ten commercial poultry farms which were operated as demonstration farms by the University of California last year gives the average cost of feeding a hen as \$2.83, which is probably nearer what it cost the average producer.

For the first four months of 1920 the average food cost of a hen per month was 30 cents, being 35.99 in January, 28.45 in February, 28 in March and 27.56 in April. At least progress was downhill for those months. Let us hope that these figures mean the peak of high feed prices has been reached. A further examination of the feed figures for the four months reveals the fact that wheat, barley and milo all dropped more or less in price, the drop being most noticeable in barley, which dropped from \$4.08 to \$3.59, while "egg food," which I suppose means ground grain, held its own, and meat went steadily up from \$6.13 to \$6.75. In April it cost 37.56 cents, including overhead, to

maintain a hen, while the income she brought in was 55.81 cents. This is ten cents less than the income per hen in April, 1919, but nearly three cents more than that in April, 1918.

Count Your "Overhead"

What do we mean by "overhead" in the poultry business? Just what is meant in any other business—the various expenses outside of the actual cost of the article produced. Mr. Cornell classifies the various overhead expenses of the poultry business as interest, taxes and insurance, death loss, replacement cost, repairs, labor, and incidentals, which include hauling, freight, stationery, etc., and finds that in a year they total \$1.20 per hen, or ten cents per month. Obviously no poultryman can look his business squarely in the eye without counting these necessary expenses. If he figures that because he paid out \$1,000 for feed and received \$2,000 for eggs he has made \$1,000, he is going to find himself sooner or later in a deep hole. Possibly it is because producers have been a little careless about keeping account of these insignificant trifles that they have sometimes been betrayed into boasting of their profits. This little item of \$1.20 per hen, which Mr. Cornell says is "probably too low in most cases," means \$1,200 a year in a flock of 1,000 hens and is nearly half the cost of feed. The biggest item of overhead is the labor cost, which is defined as "value of labor used in excess of proprietor's fair time, to include excess labor by proprietor and his family." This, if I understand it, means that the proprietor counts in his hours or days at a fair remuneration, as any other workman would, and considers his profit for the year as his labor income, but that his extra time nights and Sundays and the additional labor of his family are counted under overhead. If we are to arrive at any fair conception of the poultryman's profit it must be by counting in everything that other bus-

(Continued on Page 232.)

Among the Washington Navels

By Ernest Branton



THE Redlands citrus section of San Bernardino County never looked better than it does today. The writer recently traveled miles and miles of that territory by automobile and walked through miles of bearing orchards as well. Except for an occasional gophered tree well up in the foothills, the whole orchard section appears like a vast sea of emerald green. The trees are of very deep color at present and not one orchard was visited but was carrying a sufficient crop of young oranges, well distributed. The "drop" this year was very light; the outlook is full of promise.

Upon asking H. H. Ford, a prominent banker of Redlands and himself an owner of fine Navel groves, where were the more typical and interesting orchards that should be visited, he replied: "I see a man now in the bank on business that owns one of the most profitable orchards of its size and a ranch of such unusual interest that you should visit it." So we were made acquainted with W. H. Featherston, bundled into his automobile and driven through Redlands' famous groves of Washington Navel oranges. Nearly all these were on comparatively level ground and orchards, trees and size and set of fruit so uniform that except for their extreme beauty they would prove monotonous.

On Sunshine Heights

After a time we turned northward and began to climb until we were 800 feet above the city of Redlands and six miles to the northeast, on what is known as Sunshine Heights or "the green spot." Here we first visited the orchard of E. J. Post, the oldest one in that section, planted some 25 to 30 years ago. Then on to the Featherston ranch of 290 acres and complex character. Of this about 200 acres is tillable and 100 acres in citrus trees in variety, though but one lemon tree remains of many acres. All have been topworked to Navels of which there are 20 acres 25 years old down to 15 acres of eight year olds and a few younger trees. There are also 15 acres of full bearing Valencias and a three year old orchard of the same in a black peat soil, the older being on that heavier, redder soil that gave "Redlands" its name. In 20 year old trees there are two acres of St. Michael, six of Mediterranean Sweet, many scattered trees of Marsh Pomelo and six acres of fine "Crafton Late," a budded seedling. From the latter trees Mr. Featherston has received as good returns as from any he has, yet still favors the Washington Navel for future planting.

So much for varieties; now for orchard practices. Soil washed to the

lower ends of orchards is being hauled back to original place. Four men with two teams haul 50 full loads a day. Four years of this work has proven its value by improved condition of trees and increased yield of fruit. Mr. Featherston said: "It has paid me in crop production more than two dollars for every one expended and I believe all can afford to do it, even when oranges are lowest in price. It places a fine mulch on top of roots near the surface and reduces soil depth where trees are becoming too deep set." On other plats there is a crop of Whip-poor-will peas, which has been found the best summer cover crop of several given trial. However, sweet clover in the adjoining Post orchard promises well.

Odd Natural Deposits

During the past four years Mr. Featherston has hauled 3,000 loads of the blackest peat into his orchards, with splendid results. Trees of bad color, general condition and light yield have been made to equal the best. On the tops of two benches these peat deposits cover about three acres each, one with peat four to five feet deep and the other more than ten feet. Though on hilltops the peat marshes have a "lip" of hard soil and over this lip the water trickles and in winter

the decomposed peat washes to the lower lands, covering the hard reddish brown soil with a layer of soft mealy black. These upland marshes, close together, are the "green spot" seen from Redlands and so often asked about by first time visitors. On one side and merging into the peat beds is an inexhaustible supply of light gray soil running more than 50 per cent in sulphate of lime. Of this Mr. Featherston says his neighbors may take freely, without price. In some sections similar deposits are being taken out and shipped to orchards throughout the southern end of the state. Aside from water stock in a neighborhood system this ranch has two tunnels of fine water running 16 and 30 inches respectively and more is being developed. Though Valencias are bearing well in these orchards, they grow too large, return to original green color for June and July and are not so satisfactory as the peerless Navel. Though Mr. Featherston planted Valencias again three years ago, he thinks he made a mistake, excusable because of inexperience. He will probably topwork them to Navels. With Californians at present running heavily to planting of Valencias, with a restricted area where the best Navels may be grown, he thinks the latter should be planted wherever known to do well, for, as Dr. Webber said, "With a greater per cent of both acid and sugar than is possessed by the Valencia, the Washington Navel is the world's best orange."

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and LIVESTOCK and DAIRY JOURNAL

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We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

MUTUALLY PROFITABLE

California mutual fire insurance companies have been in existence for a score or more of years. It's the regular California habit of cooperation. One or two of these companies have suffered under immense losses and still live, and in the matter of averages the mutual insurers are getting off with little more than half the expense paid by those who prefer profit making institutions.

MOUNTAINS BURNING

Coincident with the deer season is the mountain fire season. The number of hunters and smokers drawn to the mountain districts seems to be responsible for many a column of smoke. The heat in many sections of California during the past three weeks has been intense, and dry tinder of the watersheds, especially in the timber lands, once lighted, makes a fire almost impossible of control. Literally hundreds of fires have been started in three or four of the northeastern counties of the state. Volunteer fighters have been plentiful and most of these fires have been stopped before great damage has been done, but a few of them have raged for days and have added to the insufferable heat and to the awful loss.

BEAN MEN ORGANIZING

Eastern growers of beans are meeting this week in Chicago, "called for the purpose of forming a National Bean Association." The state which produces nearly half the beans of the country, California, seems to have no representative on the program. Therefore, we are guessing that the organization of California's two associations has inspired Eastern bean growers to form their national in order to secure the benefits which California has had in a small measure and now hopes by a more perfect organization to have in fuller measure.

FARM LABOR ORGANIZING

It is rumored that there is to be a convention of fruit workers of the Pacific Coast held some time this fall. The hint is given that if such convention is held it will be under the direction of representatives of the American Federation of Labor. If the American Federation of Labor proposes to introduce its methods of controlling the employer into fruit growing sections, the fruit grower should rouse himself to a full consideration of what this will mean to him. The manufacturer who can bank his fires and wait until a labor supply can be secured is comparatively independent; the farmer whose year's profits, in fact, very existence, depend upon harvest operations which shall be completed almost on the minute, will be absolutely helpless if his labor supply is to be under the control of an outside party who knows nothing and perhaps cares less as to the steps necessary to the farmer's welfare.

KNOCKING BONDS

It seems that the treasury needed more funds to pay some of the bills which were pressing as the result of the enormous horde of employees in Washington and elsewhere. The bond issue habit offered the suggestion, and bonds, or rather "treasury certificates," were offered. The need was great, so the highest interest paid by our government in several scores of years—six per cent—was named. The 150 millions wished was oversubscribed by more than 50 millions. Naturally Liberty Bonds feel the impact of such financing, and people who stood by the government, but forced at this time to dispose of their bonds, will see with dismay present quotations on the government's paper bearing 4 1/4 per cent.

We are not in favor of any effort by legislation to force back par values on our depreciated bonds, but we are most decidedly in favor of our own government refraining from pounding the life out of them.

IT PAYS

The quarantine, which is sometimes desperately aggravating and prevents possibly a real advance in horticultural practice, is not entirely without advantage. For instance, reporting as to the chestnut trees of the state of Pennsylvania, Clifford Pinchot, state forester, says:

"Chestnut trees will disappear for the present. . . there may be a time when chestnuts again will grow in Pennsylvania." But this will not occur in your lifetime nor mine. It is stated that "no living chestnut trees now exist east of the Susquehanna River" and that there is no hope of saving the few trees left in the north-east section of the state.

A tragedy in tree life which is du-

plicated, though usually in miniature, in other sections of the country. If the Atlantic Coast had been as carefully policed in horticultural matters as has the Pacific Coast, those New England and other Eastern states would not be deprived of one of their most loved and most valuable trees.

BROKEN RICE

A large proportion of the output of the rice mills has always been what is termed "brewer's rice," a finely broken portion of the grain which is not desired in the market and which seems to be a necessary evil of the rice industry. The breweries offered an outlet. Today they have no use whatever for this product.

While in Sacramento some time ago we witnessed the milling of rice from the raw product as it comes from the field to the finished product ready for the table. We noted the removal of the hulls, the removal of the bran, the rice polish, even treating with glucose of a specially high grade whole seed product. Among these various products was brewer's, or finely broken, rice. In searching for an outlet the millers had made investigation as to breakfast food possibilities. A test, or sample, package gave opportunity to try out this new breakfast food. The broken rice was broken somewhat finer or made into a rather coarse meal. This makes a "mush" or breakfast dish similar in consistency or appearance to Germea.

It's good. (Smothered in raspberries, sugar and cream, it's perfect.) We could make several breakfasts a week from this product, and if all the rest of America would do likewise, we could settle the brewer's rice question. But a requisite to its universal use is the spending of some two dollars worth of advertising for each one dollar's worth of product. If the rice growers have the two dollars their fortunes may be made.

COSTING MILLIONS

President Howard of the American Farm Bureau Federation says: "The railroad tangle, with its resulting tie-up in grain movement, is costing the farmers of this country hundreds of thousands of dollars daily."

It sometimes looks as if the railroad management and the administration at Washington were playing horse with the farmer. Only a few days ago it was stated that as high as 25 per cent of last year's crop of grain still remains in local elevators. This, with the new crop clamoring for transportation, creates a condition which is causing the farmer these millions of loss. Warehousing interests are taking advantage of the situation by making excessive storage charges. The banker is not helping out by lowering interest rates, at least not so that anyone knows of it. It is estimated that this extra cost, in excess of a normal year, amounts to at least ten cents per bushel. Most of this excess cost will be borne by the farmers. Then another loss to be borne by both producer and consumer is the higher freight rate forced by delay in shipment and higher price which must be paid for inefficient labor.

President Howard continues: "One of the most lamentable features of the whole situation is the effect it all may have upon next year's crop. With much of last year's crop still on the farm, with little prospect of moving the present crop within the year, and with the local banks clamoring for liquidation of loans, there is little to encourage heavy seeding for the com-

ing fall. Preparation for the next crop will start within a month, and prediction of heavy cuts in acreage are general."

RECLAIMING PALESTINE

The Zionist organization of America is appealing for American foremen to take charge of various units in Palestine which shall aid in the agricultural reclamation of that land. The situation was most difficult because of the barrenness of the land and the political conditions prior to the war. Soil conditions have not improved, but with English troops there, political conditions will be materially better. The effort now will be to establish poultry and dairy farms and thus reclaim the land from barrenness. It is expected that the colonists will be practically all Jewish.

DAIRY EXPERTS

At the recent meeting of the California Dairy Council held at Hanford the following resolution was adopted:

"Be it resolved, that it is the sense of this meeting that the dairying industry of the state of California is of sufficient importance to entitle it to have the undivided service of one or more specialists in dairying in the agricultural extension service of the University of California college of agriculture, and that we, by this resolution, do respectfully request the dean of the college of agriculture of the University of California and the director of agricultural extension to give this question careful consideration and to detail a definite number of men to this work. It is the sense of this meeting that more constructive work can be done and more rapid improvement accomplished through the development of dairy departments in the county farm bureaus and by the continuous full time work of a few men of the extension service than can be realized from the present unorganized condition of the dairymen and the part time effort now possible to devote to the industry by the overworked farm advisers."

The above resolution points out a real need in the dairy industry in this state and the Cultivator sincerely hopes that the regents and the faculty of the college of agriculture lend their whole hearted support in an effort to correct a situation that has been permitted to exist too long.

The dairy industry of California represents a vital and important branch of agriculture, and because of the basic importance of the industry and because of the present unsatisfactory condition surrounding production in the average herd, great results could be obtained if the industry were accorded the services of a strong corps of dairy experts.

We deem it of high importance that the University of California act on the above resolution and that whatever action is taken be such as to attract men of outstanding accomplishments. Better one such man than several of lesser caliber.

STATE FAIR JUDGING PROGRAM

Secretary Palne has announced the following program as the probable schedule of judging:

Monday—Shorthorn cattle, Holstein cattle, Poland China swine, Berkshire swine, Hampshire sheep.

Tuesday—Hereford cattle, Jersey cattle, Ayrshire cattle, Guernsey cattle, Duroc-Jersey swine, Chester White swine, Tamworth swine. Finish sheep classes not judged on Monday.

Wednesday—Draft horses, miscellaneous livestock classes.

Lost, Starch; Red Spider Responsible

By Fred K. Howard.

SOUNDS queer, doesn't it? Many of us do not think of starch as being connected with the fruit business at all; still, it wasn't so many years ago that it took "starch" to stay in the fruit business. Now, when fruit is selling for good prices we are losing the starch, and the red spider is responsible. The loss of starch in fruit growing means in the long run the loss of fruit. Loss of fruit means loss of money. Poor quality of the fruit is also money lost, and the red spider is responsible for a great deal of the poor quality fruit delivered each year. The cooperative organizations are saying a great deal about quality these days and everyone realizes that good quality fruit is essential to the future success of the industry.

If you should make a survey of the fruit districts of the San Joaquin Valley today you would find ample evidence of the work of this "pesky little brute," as one grower termed the red spider. A serious infestation of the sort commonly observed in all sections of the valley during late July and August, happening with equal seriousness year after year as it often does, makes one wonder how trees can continue to live and bear fruit worth delivering to the packing house under such adverse conditions. True, the crop is usually harvested before the infestation becomes really serious, but while this season's crop may escape injury, we still have next year to reckon with. The error seems to be that too few growers realize the importance of starch and the part played by the leaves in the life of the tree, and how they function to produce fruit. By a very complex and little understood process the green coloring in the leaves has the power of transforming the crude materials taken up by the roots, and the gases from the air into starch.

This starch is the great essential of plant growth. Without it new wood could not be formed. The roots could not push out after more supplies of crude plant food in the soil and new buds for the next season's crop could not be formed. Starch can only be manufactured in the green leaves of the plant; the greener the leaves, the better they function. Is it any wonder that the trees which suffer every year from a combination of spider injury and lack of water fail to produce paying crops of good quality fruit? Many growers spray diligently every spring for they know full well what will happen to the crop should the trees become affected with blight or curl leaf, but they entirely neglect spider control, apparently because they cannot actually see it affect the crop. These same growers will irrigate with care and see to it that the moisture content is always right when the fruit is on the trees, but allow the soil to become bone dry after the harvest. This combination of circumstances is the cause of the leaves turning a sickly yellow and one by one dropping to the ground until here and there we can see leafless limbs. The dropping often continues until the trees become entirely defoliated, and because of a lack of water in the soil the tree cannot recover sufficiently to put out new leaves until late in the season, too late to fully mature new buds or to store sufficient reserve starch to insure a vigorous new growth the following spring. The problem of after harvest care in the San Joaquin Valley is indeed a serious one. Each year sees this pest making a little more headway in all districts and, in spite of repeated warnings of the horticultural officials and farm advisers, little is done in the way of control on a large scale. Almonds, peaches, prunes and even grapes come in for a full share of injury, and the pest is so widespread and general that it is impossible to even estimate the many thousands of dollars lost by growers each year. One good irrigation after the fruit is off is practiced by a great many growers with a great deal of success and will go a long way toward helping the trees to withstand the effects of spider injury. To be entirely effective some other control method is essential. Just what method should be followed will depend

largely on the equipment available, and should be decided by the grower himself. Liquid sulphur sprays have proven very effective provided the application is thoroughly made. Some growers have had good success with a simple cold water spray applied with a power machine during the early evening. The cost of such an application is very low and if repeated applications should prove necessary it would undoubtedly still prove a cheap method of control. Dry sulphur is probably the best and cheapest remedy yet found for this pest. It is not to be expected that one careless application of anything is sufficient, for we have a real pest to fight, a pest which is much more serious than it is usually credited with being. No matter how many applications are necessary, the increase in the fruit crop will take care of all spraying bills.

CALIFORNIA APRICOT AND PRUNE GROWERS

Prices for 1920 crop prunes, named by the board of directors of the California Prune and Apricot Growers, Inc.: Sunsweet quality, 20-30's, 25 cents a pound flat; 30-40's, 17 cents bulk basis; 40-50's, 15½ cents bulk basis; 50-60's, 13 cents bulk basis; 60-70's, 11½ cents bulk basis; 70-80's, 10½ cents bulk basis; 80-90's, 9½ cents bulk basis; 90-100's, 9½ cents bulk basis. Growers' quality was set a half a cent a pound less than Sunsweet.

In giving out the prices, H. G. Cockendall, general manager of the association, said:

"Last year's prices brought the grower members of the association the highest prices and the greatest prosperity they have ever known. Today's prices are indisputable proof that this cooperative marketing association is able to guarantee its grower members prosperity even in the face of very unsatisfactory selling conditions.


"The tendency in all markets is downward, not upward. On top of a financial situation which prohibits any speculation on the part of buyers, millions of pounds of prunes which were exported to Europe last fall are being shipped back to this country and thrown on the domestic market. Yet, in spite of these conditions the association has been able to name prices to the growers higher than last year's record prices.

"Even in the districts where only the lower priced prunes are grown today's prices insure the growers in these sections a return equal to that which will be received by the growers who produce the larger sizes. This is because the growers of the lower priced fruit produce a much larger tonnage per acre than the growers who raise the larger and higher priced sizes.

Several of the large citrus growers of Porterville have tried as an experiment a summer cover crop of cantaloupes, some planting between six and eight rows as a test. They claim they had A-1 results, getting a heavy crop and fewer falls. Claim it cools the ground and gives moisture to the trees. They say they will plant their whole orchards next year to cantaloupes as a summer cover crop, not so much for marketing but as a protection for their trees.

The Consolidated Canneries of California canned in Porterville this season 700 tons of apricots. Will also can 2,000 tons of peaches and 250 acres of tomatoes. This is from the Reedley-Porterville section. They are running to their full capacity, doing all their canning in Porterville. They are not running their cannery at Bakersfield.

A Mr. Myers of Coachella Valley from nine acres of grapes netted \$6,000. This crop brought nine cents per pound f. o. b. cars Coachella. The last car of grapes has left the Coachella Valley, approximately 60 cars having been shipped. It is anticipated that the average price will be five cents per pound.



BEST TRACTOR EARNINGS

During the first six months of this year the C. L. Best Tractor Company's net earnings have been \$404,399.56.

After provision for Federal taxes this is more than five times the dividend requirements on the total new issue of preferred stock before any returns from the doubling of the plant's capacity.

There are no bonds or other mortgage indebtedness.

**BEST CUMULATIVE
PREFERRED STOCK
YIELDS MORE THAN 8%**

Save writing a letter for complete information by placing your name here:
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SAN FRANCISCO OFFICES 433 CALIFORNIA ST.

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LOS ANGELES SAN FRANCISCO SEATTLE

KROGH PUMP AND MACHINERY COMPANY

147-159 Beale St., San Francisco, Cal.

Krogh Pumps Are Absolutely Water Balanced
No End Thrust Possible No Set Collars Used

The No Trouble Pump



Krogh Direct Motor Driven Pump

Fitted With Ring Oiling Bearings
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We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.

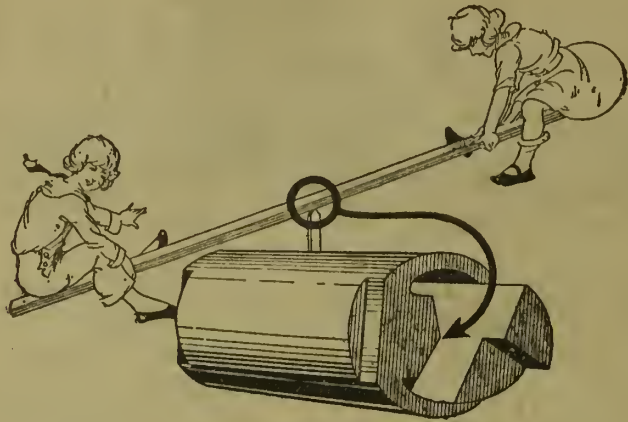
San Fernando Valley Fair and Market, Inc.

September 15, 16, 17, 18, 1920

Great Auction Sale of livestock and farm products. Over 100 ranches combined in the sale. Best stock in the county. Best DUROC-JERSEY swine in the state. Other breeds in the sale. FINE DAIRY COWS—40 HORSES—MULES—100 SHEEP. Big sale of MILK GOATS. POULTRY ranches selling out stock.

Great Program of Amusements Day and Night
Big premiums and special rewards for entries of products of the home and farm and poultry ranch.
For Premium Lists, Sales Catalogs and all information address
CHAS. L. SCHUFELDT, Manager
Owensmouth, Cal.

When Writing Advertisers Mention California Cultivator



Just Like the Old "Teeter"

*Rocking principle that doubles
life of track unit*

Simply a case of track links turning back and forth on an *edge*, like the balance of a scale, instead of on a link pin which rubs its entire surface at every turn.

This "rocker joint" is an exclusive Best feature. It requires no grease or oil—collects no grit to cut the joints. It makes a track that will outwear any other type. You can realize the advantage of this, especially when operating at full capacity during the busy season. Track links are made of manganese steel, the toughest metal known to science.

All the other features of the Best Tracklayer have been worked out with the same care, and are the result of long years of tractor-building experience. Motors are built in our own plant. 36 Timken, Hyatt and roller bearings reduce friction to the minimum and assist lubrication. Three-point suspension relieves mechanism of jolts and twists. Independently controlled tracks enable tractor to turn in its own length. Correct design gets power to drawbar with least waste. Working parts entirely housed and easily accessible. No belts or chains—all gears. Only 7 grease cups—10 minutes to grease-up.

The remarkable success of the Best Tracklayer can be attributed to these superior features of design, material and workmanship. If you are interested in tractors send for our catalog.

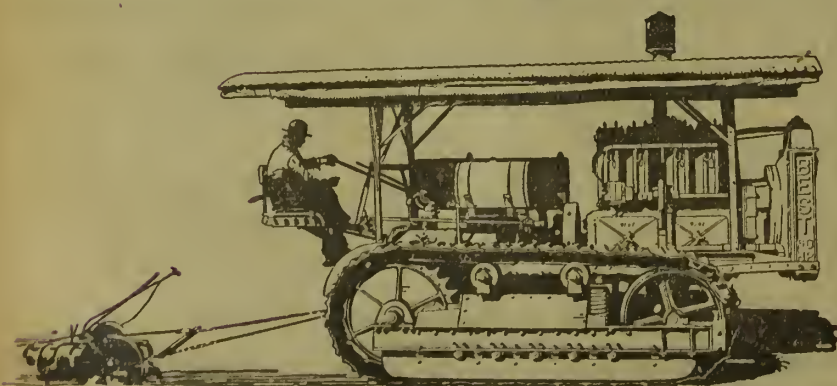
C. L. Best Gas Traction Co.

SAN LEANDRO

CALIFORNIA

BEST TRACKLAYER SIXTY

60 H. P. at Pulley
35 H. P. at Drawbar



The Pioneer Citrus Orchard

By Ernest Brauntón

In 1974 Nathan W. Blanchard of Santa Paula planted 71 acres of seedling oranges. Three years later a part of this was budded to lemons. The remainder continued as seedling oranges until six, seven and eight years ago when they were top worked to Valencias. These gnarly old patriarchs presented quite a problem, for the number of buds to a tree ranged from four to 14. Having such a prodigious root system, the buds grew vigorously. In

tral leaders and some cutting out must be done. Up to the present the need of such work has not been apparent.

But the lemon trees hold the record. Five of the larger trees were recorded at each picking and it was found they had averaged 28 boxes to the tree and the best one bore 33½ boxes of marketable lemons! That was some crop! These trees have been pruned very little, some of them not at all. The so-called "sucker wood," about which we have harped so much, has seldom appeared and has been little noted. After years of examination of citrus orchards throughout the southern end of the state, the writer is almost ready to declare: "There hain't no sich animal." We force the sucker wood into growth by injudicious pruning, as is proven by some of these old orchards that scarcely know the shears and never the saw. The Blanchard orchard is not of the low growing bush type that has been slashed off on top as by a gigantic scythe, nor are the trees lofty enough to present picking problems. They have "jes growed" naturally, like Topsy, and have given the best returns of any lemon trees in the state. Some day, the writer predicts, all pruning will consist of annual thinning, with an occasional cutting out of an abnormal growth. Nature is sufficient, invites aid, but never a combat. The whole Blanchard citrus area is 150 acres, of which 90 acres are in Valencias, and some of it is of very recent planting. A. S. Knick, the superintendent, is in favor of little or no pruning except to shape the young tree. He says that where a branch seriously interferes with proper development he does not hesitate to cut it out, but he does not seek an excuse to make a general pruning each year or even in a series of years, but lets nature take its course, with slight guidance in the right direction.



A Pioneer Tree

N. W. Blanchard ranch at Santa Paula, June 1920. Seedling orange planted, 1874 and topworked, 1912. James D. Culbertson standing by tree.

1919 one of the eight year old tops bore 22 boxes of Valencias and the average for the whole lot was eight and a half boxes to the tree. Some of these trees now have too many cen-

Don't Pick Peaches Green

The recent issue of the "Associated Grower" discusses the unwisdom of sending out green dried chips for dried peaches. It sours the consumer and does not leave a kindly feeling for the producer. The "Grower" says:

Peaches Should Be Fully Matured

Of the many features entering into the successful drying of peaches, so that they can be readily peeled after their delivery to the packing house, the most important is to be found in the method pursued in picking the fruit. Some growers have in the past gathered their fruit by shaking it down from the trees. The result of this has been that a considerable number of immature peaches could invariably be found in lots that were handled in that manner, for even a gentle shaking of the trees will cause a number of green peaches to fall to the ground together with the ripe fruit. This method should absolutely be discontinued and all fruit picked by hand, for we shall never achieve for our product the reputation for high quality we all strive for so long as our fruit contains a large percentage of immature specimens.

A peach that is not fully matured when it was gathered off the tree cannot be peeled successfully after it is dried and the quality of our Blue Ribbon Practically Peeled Peaches now depends very largely upon the care taken by our growers in the harvesting of their fruit.

The picking of the fruit by hand will eliminate most of the immature specimens but it will not eliminate all of them. Windfalls or green fruit gathered through the faulty judgment of a picker will occasionally find their way into the boxes before they are hauled to the cutting shed, and those should be carefully culled out by the cutters and placed upon separate drying trays, and when cured they should be delivered to the packing house in separate boxes.

Fruit Properly Cured

All fruit should be properly cured

when it is delivered to the packing house. While this has always been an important feature in the peach industry, now that nearly all of our peaches are peeled, it is imperative that our growers place their fruit in that condition before they consider it ready for delivery, for our peeling machines can not handle the peaches successfully unless they are perfectly dry when they are placed therein. If it should be found during the drying process that some peaches are not quite dry, while the balance on the tray are ready for the sweatbox, those pieces should be picked out and redried and they should not be mixed with the other fruit under the supposition that the dry fruit absorbs the surplus moisture from the others.

AVOCADOS AT SAN MARINO

On the San Marino ranch of H. E. Huntington there is a total of 1,329 avocado trees, the first lot set out in orchard form in California. This orchard consists of 486 trees planted in 1910, budded in 1911 and all frozen below the buds in 1913. They were rebudded in 1917 to Fuerte, Sharpless, Spinks, Linda, Queen and Knight, and interset with budded trees of promising seedlings which have fruited on the ranch. Some of these may later be named and the budwood distributed.

On this large ranch of 485 acres these are several small orchards and groups containing in all about 25 named varieties and a like number of seedlings that have fruit and are considered sufficiently valuable for crop or experimental purposes to be retained, for the present at least. One small orchard contains 19 varieties sent as pot plants by the United States department of agriculture. These were budded from wood sent from Guatemala by Wilson Popenoe, the government plant explorer who is now in quest of avocado and other fruit trees in Costa Rica. It is expected that in this collection of 19 some will be found of equal or greater value than any we now grow, for they are Guatemala's best.

Have You Seen That New John Deere Plow?

Because it is built of new-process John Deere steel, the No. 40

weighs less than the average horse-drawn sulky plow;

pulls extremely light—a real fuel saver;

stands the strains under all conditions -- its beams are guaranteed not to bend or break.

Due to the self-adjusting hitch—an exclusive John Deere feature—bottoms run true and level at all depths—they neither “nose in” nor “hop out” of the ground.

Its John Deere bottoms insure good work.

YOU have been hearing for some time, no doubt, that John Deere was building a new plow especially for the Fordson tractor.

Perhaps you are one of the many farmers who asked that John Deere build such a plow.

Perhaps you are one of the many who have gone to John Deere dealers with the query: “When can I see that John Deere plow built especially for the Fordson?”

John Deere specialists took their time in building the plow. They had the John Deere reputation to consider, first of all. They knew that farmers expect especially good performance from a John Deere plow. Their task was to give the user the benefit of such performance behind his Fordson tractor—to fit a John Deere-quality plow to the Fordson as carefully as a good tailor fits a suit of clothes to a customer.

The plow is now ready. It has been branded with the famous John Deere trademark of quality. It is called the John Deere No. 40.

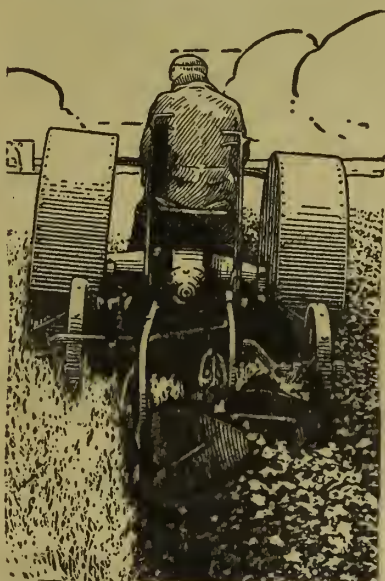
Here Are Features That You have been Wanting

Imagine a two-bottom tractor plow that is lighter than the average horse-drawn sulky plow—

It's Built Especially For the Fordson Tractor

—a tractor plow that pulls so light that it soon pays for itself in lower fuel consumption, greater acreage per day, minimum wear on the tractor—in all the factors that mean lower plowing cost per acre—

—a tractor plow that has this desirable light weight and light draft plus tremendous strength—beams that are guaranteed not to bend or break; frame construction that stands all of the strain of utilizing the tractor's power under all conditions.



The No. 40 fits the Fordson. The No. 45 is built for use with ANY “two-plow” tractor.

Those are important features of the No. 40 that you are sure to appreciate.

Beams, braces and axles are made of a new process, John Deere steel that combines the desired lightness with the necessary strength.

It's the Plow with the Self-adjusting Hitch

The No. 40 has a self-adjusting hitch—an important advantage in plowing with the Fordson.

When you adjust the plow for depth with the depth lever, the hitch point auto-

matically regulates itself to the correct line of draft.

That means that the bottoms run true and level at all depths, doing uniformly good work all the time.

It means that there is no undue wear on shares because of bottoms “sledding” or “running on their nose”; no worry or loss of time over hitch adjustments.

The self-adjusting hitch is exclusively a John Deere feature. Any plow for use with the Fordson needs it, but—no other plow has it.

John Deere Bottoms do Good Work; Wear Well

The No. 40 is equipped with genuine John Deere bottoms—the bottoms that scour, wear well and make good seed beds.

These bottoms include both steel and chilled types in a variety of shapes to meet different requirements.

The shares are quick detachable—loosen one nut to remove a share; tighten the same nut and the share is on tight.

The power lift of the No. 40 is simple, strong and positive. It works perfectly. The lifting parts move only when the plow is being raised or lowered—practically no wear.

This is the Plow the Fordson Needs

If you are planning to buy a Fordson tractor, it will

pay you to investigate the No. 40.

The tractor will give you pulling power. It will be up to the plow you buy to apply that power. Remember that, no matter how well a tractor may do its part, the plowing outfit is no better than its plow—just as no knife is better than its blade. You need the best plow you can get.

The No. 40 may be on display in your town now. If it isn't it soon will be. Get acquainted with it thoroughly before you buy your tractor.

The best place to judge the No. 40 is in the field. Watch it at work and see for yourself how wonderfully light it pulls; how simple and strong the hot-riveted frame construction is; how the self-adjusting hitch keeps the bottoms running true and level at all times, and how the bottoms scour, pulverize and turn the soil in that John Deere way—the way the practical farmer wants it done.

Another Plow for ANY “Two-Plow” Tractor

If you are planning to buy a “two plow” tractor other than the Fordson you will be interested in the John Deere No. 45. This plow is exactly like the No. 40, except that it has a flexible hitch and rear furrow wheel. It has the fuel-saving light draft, the strain-resisting strength, and the seed bed-making qualities of the No. 40. It is adaptable for use with any standard two-plow tractor.

Ask us to send you free booklets describing these lighter, stronger plows for “two-plow” tractors. Drop us a postcard or letter today. Ask for booklets F-17.

JOHN DEERE MOLINE, ILLINOIS

TEAGUE TREES

Stand Supreme For Growth and Productiveness

You can't afford to buy anything but the best if you expect remunerative returns from your grove.

CITRUS TREES

Ours are the best that can be produced and always give satisfaction. Why take chances on inferior stock?

AVOCADOS

We still have a few extra fine field grown trees of the recommended varieties ready for immediate delivery.

FEIJOAS

Every garden should contain at least two plants of this delicious fruit. Will grow any place in California. Send for our new descriptive price list.

The R. M. Teague Nurseries

Box A

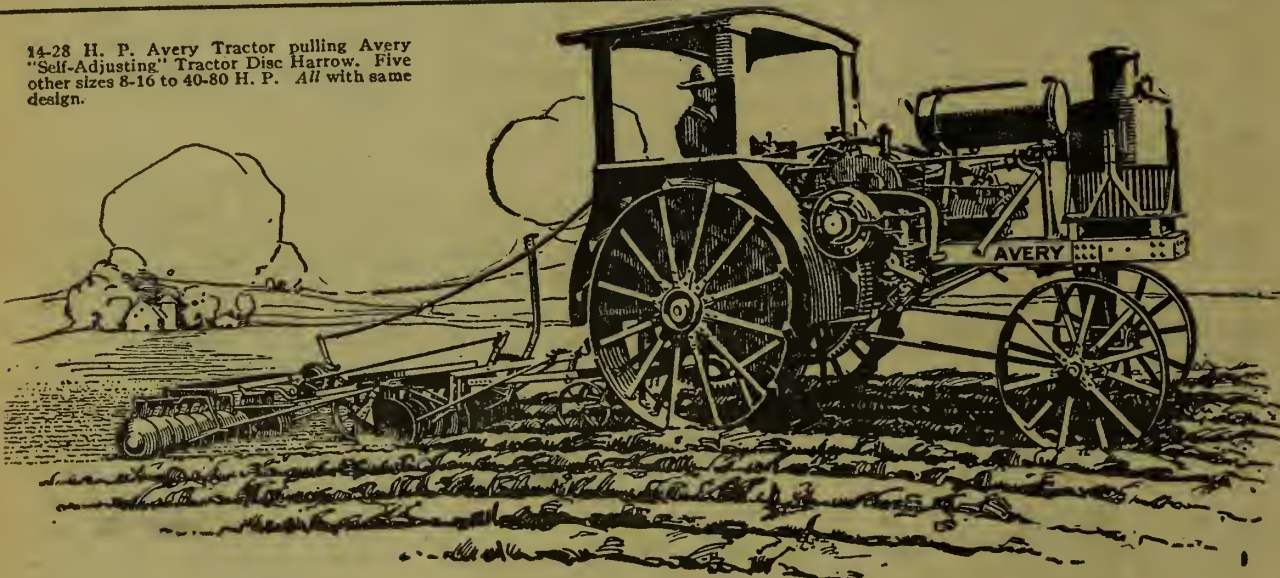
San Dimas, California

Founded in 1889 by R. M. Teague



The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

14-28 H. P. Avery Tractor pulling Avery "Self-Adjusting" Tractor Disc Harrow. Five other sizes 8-16 to 40-80 H. P. All with same design.



Get Your Avery Now When You Need It Most

Fall time is indeed tractor time—the time when the advantages of power farming are many—the time when an Avery will mean most to you in getting your work done in the right way. With an Avery now, you can get your fall plowing, discing, harrowing, seeding all finished double quick—also have your own power for threshing, silo filling, shelling corn, grinding feed, road work and other power jobs.

You may have said, "Some day I will have an Avery." Why wait till "some day" when having an Avery right now would mean so much to you in speeding up your work, getting it done in the right way, and insuring a big next year's crop.

A Size for Any Farm

You can get an Avery in just the right size to fit your needs best. Also "Power-Lift" Moldboard or Disc Plows to fit any size Avery Tractor and "Self-Adjusting" Tractor Disc Harrows and "Power-Lift" Tractor Grain Drills. All these tools are operated from the tractor platform—real one-man outfits.

When you get an Avery you put speed and certainty into your farm work. Five sizes of Avery Tractors from the 8-16 to 40-80 H. P. have the low speed, heavy-duty "Draft-Horse" Motor—the motor that gives years of service with minimum upkeep cost. Has Renewable Inner Cylinder Walls, Adjustable Crankshaft Boxes, Valves in Head, Centrifugal Gasifiers that burn all the kerosene, and many other exclusive features.

The power is delivered through the "Direct-Drive" Transmission with only three shafts and straight spur gears between the motor and the drawbar. Belt pulley is mounted direct on the crankshaft—you get all the power of the motor in the belt. That's why the Avery is the real puller in the belt and at the drawbar.

Write for Catalog

Get your Avery now when you need its service most in getting a good crop started for next year. See your local Avery dealer or write us for catalog showing complete Avery line of Tractors, Tractor Drawn or Tractor Driven Machinery

Avery-ize your farm—"A Good Machine and a Square Deal."

AVERY COMPANY, 3908 Iowa St., Peoria, Ill.

Branch Houses, Distributors and Service Stations Covering Every State in the Union

AVERY

Motor Farming, Threshing and Road Building Machinery

Surveys Grape Growing in South

R. L. Nougaret of the viticulture service of the department of agriculture has just returned from a trip to the grape growing sections of the San Joaquin Valley and southern counties. The object of this tour was to investigate local conditions of those various grape districts and by holding meetings with the grape growers make them acquainted with the special conditions brought about by the enforcement of prohibition laws which so radically affect the wine grape industry and which coincidentally have a direct bearing upon the table grape as well as the raisin industries.

Another message presented to the grape growers was the seriousness of the grape phylloxera infestation throughout the state and a warning as to the care which should be taken in new grape plantings and replanting.

Briefly stated, the main observations made on this occasion can be summed up as follows: Imperial County possesses the unique advantage of producing the earliest grapes of the state. The shipments of Thompson Seedless were over by June 15 and those of Malaga just beginning at this date. Small shipments of Persian No. 2 grapes had preceded the Thompsons. Grapes ripening so early command

very high prices, both on local and Eastern markets, and this advantage predicts a future for Imperial as a grape producing county. The condition of part of the small acreage of grapes now in existence should be a warning to those intending to plant vines that a careful investigation of the soil should first be taken in consideration. A few of the older vineyards are showing signs of deterioration due to mineral salts brought to the surface by irrigation. Drainage might possibly overcome this defect, but thorough experiments should be made to prove this.

Coachella Valley in Riverside County is also a wonderful producer of early fruit and vegetables.

SEPTEMBER COVER CROPS

By Ernest Branton

The planting of winter cover crops will range throughout September. A few will plant during late August and probably an equal number in early October. Vetch is often sown later than melilotus and an occasional planting is made up to November, but 95 per cent of cover crops will be sown in September. A few may drill the seeds in but a dozen orchardists lately interviewed will all sow broadcast, no matter what seed is planted.

As to what to plant, it appears that a decided majority would plant purple vetch, but no seed supply is available. One orchardist, with soil in the best of tilth, said if he could be assured of a favorable season he would plant bur clover, as he was convinced that it is best of all. But ordinarily it starts too late and in unfavorable seasons does not make satisfactory growth. A careful canvass would indicate that orchardists will plant a little heavier acreage of vetch this year than melilotus, as compared with last year's planting. Farm Adviser Hodgson also so reports after talking with scores of farmers. A prominent seedsman told the writer that advance orders show a 25 per cent change in favor of vetch over melilotus.

E. F. Underhill of Glendora said: "I shall plant 45 acres of vetch about September 15, and C. F. Gordon, above my orchard, will plant 100 acres about the same time. In a season of light rainfall melilotus does best generally, but in gravelly soil the larger seeds of the vetch seem to insure a better stand than we can get with melilotus. Those having heavy soil favor melilotus. I shall broadcast the seed following my next irrigation, shall then furrow for irrigation, leave the furrows open and then distribute well about two tons of bean straw to the acre. Some will use three tons of the straw to the acre. This is on loose, light soil only, a necessary mulch."

Other orchardists in the district were also interviewed. One with heavier soil and larger trees than are possessed by the Underhill orchard will sow 20 pounds of melilotus per acre, broadcast, furrow for irrigation and leave the furrows open. He is primarily after humus and says the native malva, *Malva parviflora*, comes up each year with the vetch, grows often to six or even eight feet high with stems as large as a two year old orange tree. He says this weed does more to break up his heavy soil than any crop that grows on it. He will sow melilotus September 5-10, but a neighbor will sow a small orchard to hairy vetch. He said fumigation in that district was generally unsatisfactory last year, but that *Scutellista cyanea* was working well on black scale and had exterminated a light infestation of brown scale. Nearly all in that neighborhood were cultivating August 5, and many will sow cover crops following the next irrigation 30 days later.

BE CAREFUL WITH ARSENATES

California pears received on the Boston market are reported as showing appreciable traces of arsenic. The forwarding of fruit bearing visible evidence of arsenical spraying may subject the goods to the danger of confiscation under municipal or possibly federal law. Rejection or condemnation of California pears under these conditions may have a very serious effect on the market outlet. Packers should be equipped with cotton gloves so that pears showing



Avery Six-Cylinder Model "C". A small tractor making a big hit. The Avery 5-10 H. P. is similar to this model but smaller.



Avery Motor Cultivator Harvesting—one of the most useful power machines ever built for farm work. One and two row sizes.



Avery Separators are the Champion Grain Savers. Hyatt Roller Bearing equipped.



Avery 40-80 H. P. Special Road Tractor. Built in five sizes—make better roads at less expense.

cessive amounts of dried spray materials might be handled so as to remove any conspicuous amount of foreign material.

FARM CENTERS WILL MEET AT STATE FAIR

Members of the farm centers from every county in California will be entertained at the state fair by the farm centers of Sacramento County. The arrangements are in charge of Farm Adviser Leonard and Horticultural Commissioner Brosius of Sacramento County. It is proposed to have each farm center in Sacramento County act as host one day each, thus insuring diversified entertainment for the visitors.

Matters of interest to farm centers throughout the state will be the topics for daily discussion. University speakers and practical farmers will address the meetings and every possible problem interesting to the tillers of the soil will be presented for solution. Letters have been sent to all farm centers and Farm Bureau Day, Saturday, September 11, promises to be a big event.

CANNING DEMONSTRATION AT WALNUT CREEK

Recently an interesting and instructive demonstration on home canning was held at the home of Mrs. M. E. Small Jr., Walnut Creek. Miss May Secrest, food specialist from the University of California, demonstrated the cold pack method of preserving fruits and vegetables, the fruit being canned without the addition of sugar. Sixty ladies from all parts of the county were present and expressed themselves as being deeply interested and having received valuable information from the demonstration. If the movement inaugurated by the ladies of Contra Costa County for the stationing of a farm home demonstration agent in the county is successful it will mean that similar demonstrations, not only on home canning but also on all other subjects of particular interest to the farm women, will be a regular thing in all parts of the county. The salary of the home demonstration agent is paid by the state university and the United States department of agriculture jointly, and the county is required to pay only \$1,500 per annum to cover necessary expenses in connection with traveling and office maintenance. Such an appropriation means an increase in taxation of only two cents on \$1,000.—A. M. Burton, Contra Costa County Agent.

TOMATO CROP IN MEXICO

Because of the unfavorable season and the prevalence of various pests, the tomato crop in the state of Sinaloa has been disappointing. Growers had anticipated a crop three times that of last year, which was the best year in the history of the industry, but they will do well to secure crops equal to last year's production, which amounted to about 700 carloads.

LACK OF UNIFORMITY IN FUMIGATION RESULTS

(Continued from Page 211.)

good results. In the case of oranges the season cannot be prolonged in the spring beyond the time of the setting of the fruit. During the winter season, December, January, February, and more or less of March, daylight work is preferable.

Machine Delivery

Our own fumigation work at Corona was more uniform than the commercial work and we were unable to account for this. The same tents were used and the same procedure apparently followed. The only difference between our own work and commercial work was in the manner in which the charge was expelled from the machine. In the commercial work three or four strokes of the pump were all that were given, while in our work enough strokes were made to completely discharge the dosage. This led Mr. Knight to test the machines by making three or four strokes for from eight to 12 successive charges and comparing the delivery with that when the complete charge was expelled regardless of the number of

strokes. When but three or four strokes are given there is great variation both below and over the amount that should be expelled. The supposition has been that what liquid was left in the supply pipe after three or four strokes would be expelled with the following charge. But our tests of the machines have shown that while in a single throw or in an entire grove the total amount expelled is the same, the dosage is not uniform for all of the trees.

The machines were tested with gasoline and with water. Gasoline was chosen because its specific gravity approximated that of liquid HCN. Using a liquid lighter than water made no difference with one of the machines but it did make a difference with the other. Type A machines when completely discharged gave 100 per cent delivery regardless of the specific gravity of the liquids used. On the other hand, when not completely discharged Type A machines showed a considerable variation. The amounts delivered varied from 41 per cent minimum to 125 per cent maximum, or a difference of 83 per cent. This difference in itself might account for failure to kill the scales. Type B machines, while not showing such a marked variation, the highest being 20 per cent, were never entirely accurate, whether completely discharged or not. Uniform fumigation results can only be attained as the factors responsible for variation are determined and so far as possible eliminated. Variation in machine delivery can be eliminated by making enough strokes

of the pump to completely discharge the dosage measured. Whether as much variation in delivery will occur with the improved machines to be used this year we have not yet determined, but our recommendation is that enough strokes of the pump be made to practically expel all of the charge.

Not Due to Liquid HCN

The point has been raised in some quarters that the lack of uniform results is due to the use of liquid HCN. We have been testing that matter since the liquid first came into use three or four years ago and have found no evidence whatsoever to support the contention that the use of liquid HCN is less efficient than the pots or portable generators, providing the equivalent amount is used. This amount, according to our investigations, is 20 cubic centimeters of the liquid to correspond to an ounce as called for in the older schedule, or what amounts approximately to that used today. If there is much discrepancy it is a

shortage in the case of the larger trees. In order to remove any doubt as to efficiency of the liquid we again carried on a series of tests with the liquid and pots last year in the Corona district and the results verified our previous work in that what difference there was was in favor of the liquid rather than of the pot method, that is, the results were more uniform where the liquid was used.

Inefficient Labor

One of the more general causes of erratic or poor fumigation results is inefficient labor during the past two or three seasons. Careless kicking in of the tents and neglect or indifference as regards other operations has been observed frequently, and on account of the general labor conditions it has been very difficult for the fumigation foreman to overcome this entirely. There are other minor causes, such as fumigating in too strong a wind, holes in tents escaping notice, fumigating over rough ground and in cover crops, and so on.

Your Soil Needs Humus and Nitrogen Bacteria

Melilotus Indica Supplies Both

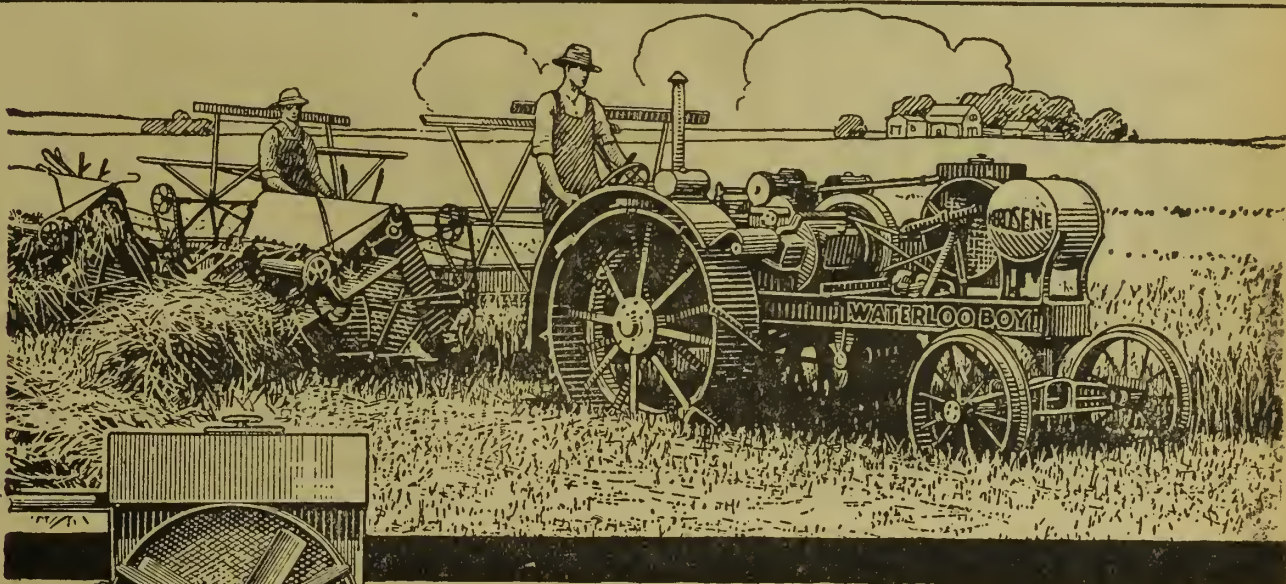
Now is the time to plant it. Buy only seed that has a quality test tag on every sack. It protects you against seed of low germination.

Buy from your local dealer or from

Aggeler & Musser Seed Co.

Look for the Tag

Los Angeles, Cal.



Uniform Cooling Keeps The Engine on the Job

THE cooling system of a tractor gets its real test during the heat of harvest and early fall plowing.

It is then that you can rely upon the Waterloo Boy—the pump, fan and radiator system of cooling always keeps the engine on the job.

WATERLOO BOY
BURNS KEROSENE COMPLETELY

To secure uniform power you must have uniform cooling. The pump, fan and radiator system used on the Waterloo Boy positively assures uniformity in circulating cooling water.

It holds the engine at the right temperature for proper lubrication, and maintains sufficient heat to insure complete combustion and full power from the fuel.

An even temperature is maintained at all operating speeds because the speed of the pump and fan is automatically controlled by the speed of the engine.

You get a big radiator on the Waterloo Boy. It holds thirteen gallons. You won't find it necessary to stop in the field every few hours on a hot day and fill it.

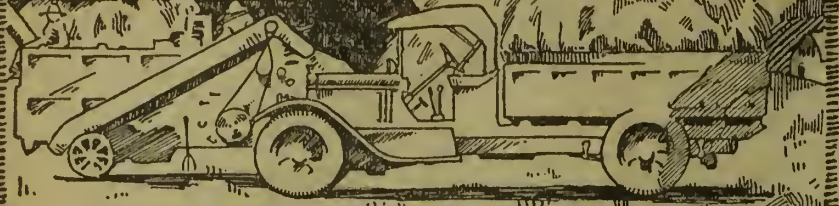
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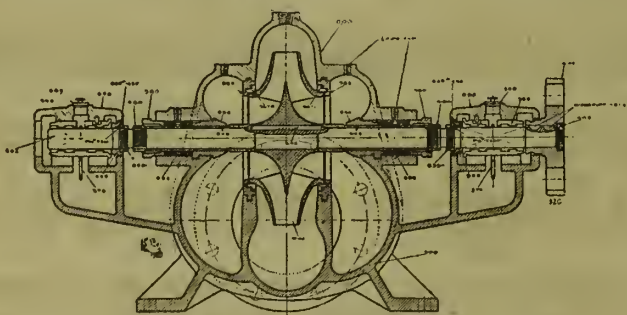
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Horsepower

By L. J. Fletcher



HAT is horsepower?

Horsepower can not be measured in pounds pull or in miles per hour, but is made up of both. Contrary to popular opinion, the unit horsepower was actually derived from the amount of work a horse can do.

Force is defined as that which tends to produce motion, while work is force moving a certain distance. Power is the rate of work.

Force is measured in pounds, while work, being a product of a force in motion, is measured in foot pounds. For instance, if a man lifts a 100 pound box from the ground to a platform three feet high, he does 100 pounds by three feet, or 300 foot pounds of work. Power is measured in horse power.

In using horses for raising coal from the mines in England it was determined that the average draft horse, weighing about 1,500 pounds, could raise 150 pounds of coal while walking at the rate of 2 1/2 miles per hour and keep working at this rate all day. Two and one-half miles per hour is equal to 220 feet per minute. So the mechanical horsepower, as it is called, really originated with horses and is equal to 150 pounds by 220 feet per minute, or 33,000 foot pounds per minute.

If a tractor is exerting a draft (or pull) of 2,000 pounds while plowing, it is doing work. The amount of power developed, then, depends entirely upon the speed. If moving two miles per hour the horsepower developed would be 176 feet per minute (equivalent of two miles per hour), multiplied by the force, 2,000 pounds, and this product divided by 33,000, giving 10.7 horsepower. However, if the speed of plowing was 2 1/2 miles per hour the power developed would be 220 by 2,000 divided by 33,000, or 13.3 horsepower.

The term "actual horsepower" is sometimes used. This is an attempt to confuse power with force, or, in other words, to compare simply the amount a tractor can pull with that of an equal number of horses, regardless of the speed of either. The horse has one big advantage over the tractor, and that is, when sufficiently urged the average horse can for a short time exert a pull equal to one-half to three-fourths of his weight. Horses tested for maximum horsepower, or effort, often develop from six to seven horsepower for from ten to 15 seconds at a time.

The horsepower rating of a tractor is usually given in two numbers, 10-20, 12-25, 30-60, etc. The first number represents the draw bar horsepower or is the indication of the amount of work the tractor can accomplish when pulling plows, harrows, etc.

The second number is the horsepower of the motor in the tractor, or the belt horsepower. It is commonly called the brake horsepower because in testing the tractor a large brake is attached to the pulley wheel and the amount of power determined. This is the horsepower available for operating such belt driven machines as pumps, threshing machines, ensilage cutters, etc.

It is interesting to compare the belt horsepower capacity of a tractor and a horse. The tractor when pulling a plow uses up about one-half the power of its motor in moving itself, thus the rating 10-20, etc. However, when it is doing belt work it is not moving itself, so all of the power of the motor goes into useful work.

Since no one has yet perfected a stationary attachment for a horse, he must move himself when being used for operating belt driven machines. Thus while the tractor is nearly twice as efficient when doing belt work, the horse is less efficient on the "belt" than the "draw bar."

This accounts for the early use of the gas and steam engine for stationary work, and the more recent use of tractors for field road work.

While the work involved in testing a tractor for draw bar horsepower is slight, few tractor users possess an instrument for determining the amount the tractor is pulling. Often, when a rancher complains of his tractor not pulling enough, tests have shown that due to poor adjustment or condition of the plows, or character of the soil, the tractor is developing more than its rated horse power or is actually overloaded.

Increased Production

By G. H. Hecke

For the next three or four years the increased production of agricultural staples will determine largely the restoration of world affairs to former placid conditions. This is a matter of cold fact. Europe, at best, must have four years to recoup her depleted agriculture. Argentina may produce some surplus beef and hides; Australia her usual quota of fruit and mutton; Canada, grain and dairy products; but it is the old guard, the American farmer, whose timely and well ordered activities until the year 1925 will determine the real world struggle of providing the actual agricultural products required to sustain the needy millions of all nations and races—no longer bounded by formal lines, but including the Orient and Occident alike.

As in every crisis in the past we must be prepared for untoward physical conditions which may only serve to aggravate and intensify a distressed situation. Unheralded climatic conditions, early or late frosts, excessive drouth and unforeseen crop failures, not alone in this state and country, but indeed in the farming centers of foreign countries, are neither improbable nor unlikely. Speaking for California agriculture, we may say generally that in the past we have been blessed with years of plenty, when compared with uncertain, disastrous agricultural ventures in other parts of the world, and now, without a vestige of pessimistic forecast, but with forethought and prudence, farmer and business man alike should prepare for "the seven lean years." That the lean years may fail to materialize for us will be a matter of good fortune and would serve to release for inland use and for export such of the foodstuffs

in excess of our own needs as could be spared, beans, rice, cereals, dried fruits, animal and dairy products, cotton, etc.

A market is waiting for every pound and ton of such staples that California can produce, and at values which will equal those of former years, provided the labor now concentrated in better paying city work will permit intensive production.

In order to secure the maximum results from our agricultural activities it is necessary and indeed vitally essential that a better and closer understanding be promoted and fostered between the farmer interests and our city business, since it is only through the well being of each that the other may hope to reap the benefits that properly should accrue.

We must come to realize that this matter has now assumed the aspect of a national issue, and no expense of county, city, state or even the nation will be too great if it will insure an ample supply of staples to meet the world's demand for the coming four years.

MARIOUT BARLEY

Prediction that Mariout barley introduced by the agricultural experiment station of the University of California eventually will replace the common barley over large areas to which it is adapted, as already it has in Yolo and Solano Counties, is made by authorities at the college of agriculture, based on returns of a recent census by G. W. Hendry showing that 40,000 acres have been grown to Mariout by 400 growers in 25 counties of the state.

Mariout barley is leading common barley in yield this season by more

than four sacks per acre. While not regarded as superior under all conditions, the value of Mariout has been well proved on dry light soils, in hot, dry localities, and for late planting. Of the million and a quarter acres of land usually planted to barley in California, it is estimated that approximately 800,000 acres of it is better adapted to Mariout than to common barley. Had all of this area been planted to Mariout the value of the barley crop would have been greatly increased, according to Professor Hendry.

Growers in the Sacramento and San Joaquin Valleys and in Southern California send reports of yields of Mariout and common barley that make most interesting reading. The Cultivator gives a few of these reports in following text:

E. Clemens Horst Company of Los Molinos, Tehama County, averaged 33 1/3 sacks of Mariout per acre as against ten sacks per acre for common barley under similar conditions.

A. H. Eager of Red Bluff, Tehama County, secured a yield of 19 4/7 sacks per acre of Mariout as compared with 10 1/3 sacks per acre for common barley.

H. H. Dopkins of Arbuckle, Colusa County, reports six sacks per acre for Mariout and three for common.

S. A. Mealey of Gridley, Butte County, reports 30 sacks per acre for Mariout and 23 sacks per acre for common barley.

J. P. Samuelson of Durham obtained 29 sacks per acre from Mariout and 14 sacks per acre for common barley.

P. W. Doty of Turlock reports Mariout at 34.6 sacks per acre and common barley at 28 sacks per acre. Mr. Doty states: "I find three very distinct reasons for raising Mariout here. First, it ripens two weeks earlier than common barley, making it exceptionally well adapted for double cropping land. Beans can be put in early in June. Second, it stools well and with very sturdy straw which is not coarse and brittle, and, third, the percentage of shattering in the field is small as compared with common barley."

J. G. Henwick of Modesto reports Mariout to have yielded 25 sacks per acre and common barley 21 sacks per acre, and states: "I believe Mariout barley is best suited to conditions here on account of early maturing, which means about 15 days, and especially for double cropping on irrigated land. I seeded 500 pounds and threshed 230,000 pounds. I will sow it again this fall."

F. W. Voorhies of Ripon, San Joaquin County, grew Mariout and reports a yield of 25 sacks per acre. Common barley under similar conditions yielded ten sacks per acre.

A. W. Norcutt of Sanger, Fresno County, planted 28 acres of Mariout which yielded 16 1/2 sacks per acre. Common barley yielded only ten sacks per acre.

W. K. Chestnutwood of the Stockton state hospital at Stockton put in 50 acres of Mariout, which yielded 30 sacks per acre. He had no common barley with which to compare it, but thinks Mariout better adapted to his conditions.

Robt. F. Schmeiser of Corcoran, Kings County, planted 1,280 acres of Mariout under adverse conditions in the Tulare Lake bottom, which yielded four sacks per acre. Common barley under the same conditions gave no yield.

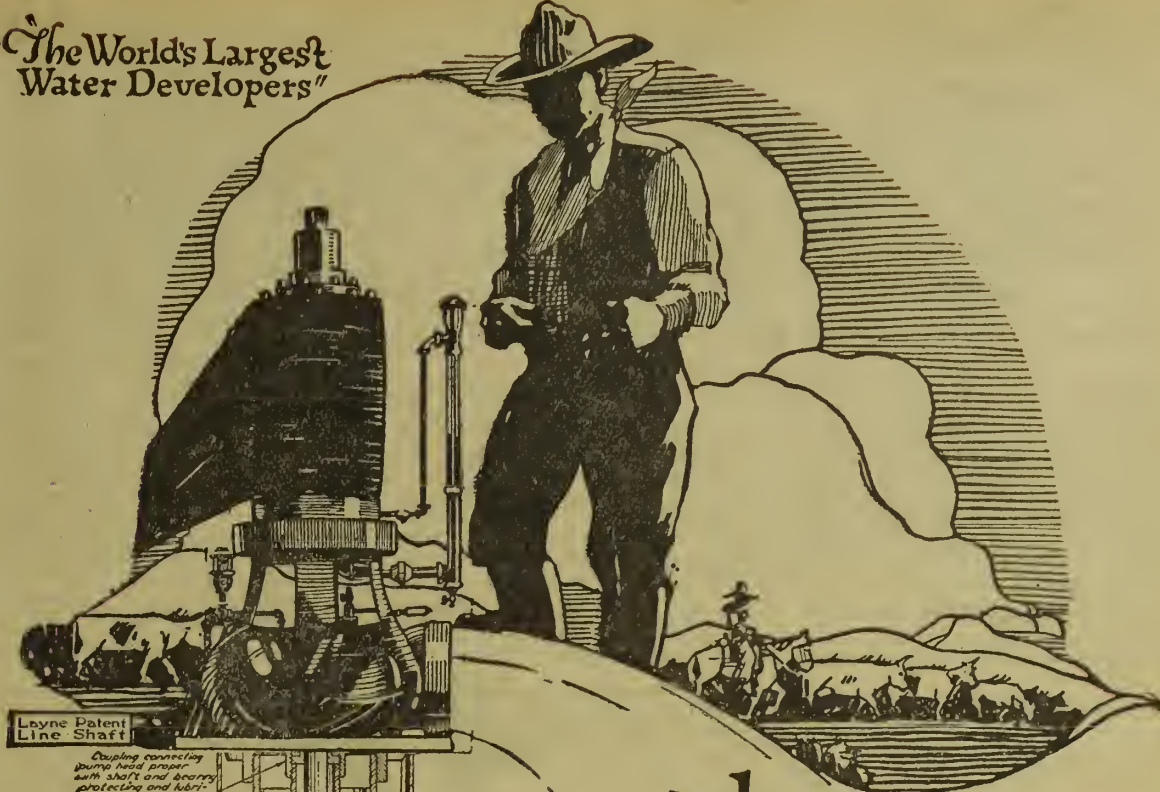
H. L. Roberts of Beaumont, Riverside County, reports yields of 25 1/2 sacks per acre from Mariout and 17 sacks per acre from common barley. Says Roberts: "I think Mariout is the coming barley, but believe I planted too early (November 10, 1919), and it headed out so quickly that it was frosted some."

C. V. Storm of Winchester, Riverside County, reports yields of 25 sacks per acre from Mariout and 14 sacks per acre from common barley.

Geo. Dawson of Del Mar, San Diego County, reports Mariout to have yielded 20 1/2 sacks per acre and common barley 17 sacks per acre.

Chas. Madsen of Lompoc, Santa Barbara County, reports Mariout at 14 sacks per acre and common barley at nine sacks per acre.

Donald C. Ingersoll of Encinitas, San Diego County, reports Mariout to have yielded 23 sacks per acre and common barley 15 sacks per acre, and concludes that Mariout is a wonderful crop for the light mesa soil of San Diego County.



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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Summer Pruning Apricots

Would you advise dormant pruning or summer pruning on six year old apricot trees which are much too bushy and where much wood will have to be cut out? Work to be the new style of thinning out only?—Subscriber, Etiwanda.

In answering there are probably two main points to consider: (1) During the early part of the season most of the organic food which is manufactured by the leaves is immediately utilized in the formation of new wood, twigs, branches, additional leaves and in the development of the fruit. This is, of course, of much importance. Nevertheless, the apricot tree has practically no excess food which it

can store up for the next spring's growth until some time after the crop is removed and length growth has largely ceased. Neither has it been able to complete the development of strong plump fruit buds for the next year's crop or to increase the stored plant food reserve. The flowers which bloom, the leaves which push out, and the first early growth which will be made this next spring will all be done at the expense of the plant food, sugars and starch, which will be manufactured by the leaves and stored in the tree largely throughout the late summer months and early fall after the time of fruit harvest. (2) The apricot, however, matures its crop fairly early in the summer and produces as a rule a great abundance of leaves. These leaves, in addition to manufacturing plant food, also permit the loss of a lot of water by evaporation through minute openings upon their surface. In dry years the limiting factor may, therefore, not be insufficient leaf area for the manufacture of plant food, but too much soft, tender, succulent tissue which evaporates large amounts of water. This may result in suffering on the part of the tree from lack of water to such an extent that the normal function of the leaves in the manufacture of plant food may be interfered with. With the apricot, then, under some conditions, judicious summer pruning may be understandingly practiced. Indiscriminate summer pruning may severely weaken the tree and is to be avoided. The removal of mature limbs which have ceased length growth, or of leaves that are healthy and firm, reduces the amount of plant food that may be "digested" and stored during the remainder of the season. Furthermore, if summer pruning is severe enough to induce the production of late new tender twigs and leaves this draws upon the stored plant food and results in a thinner, weaker sap just when the tree should be storing instead of using up stored food. Such a late growth does not have time to ripen up or mature properly and is quite likely to dry out or be otherwise injured during the winter. Proper, conservative summer pruning consists in removal of any surplus, tender succulent water sprouts that are growing where they are not wanted. Any permanent limbs that are becoming excessively long and continuing length growth too late may be checked by lightly clipping them back. Dead, broken or diseased parts should be removed. So long as the trees can obtain sufficient water to supply their leaves it is not, as a rule, desirable to reduce the leaf surface at this time of the year. If drouth is severe and the trees are evaporating more water than can be supplied and give evidences of distress, the evaporating surface may be reduced by judicious thinning out of the rank growing water sprouts, or the more tender, succulent parts which are least needed. In general, one can state, "Don't do heavy pruning in the late summer. Wait until winter and the leaves are off."—E. L. Overholser.

Rabbits Destroy Trees

Will you suggest some practical method for controlling or eliminating rabbits, which are seriously damaging a young citrus orchard of mine? I have the usual protectors around the trunks but they reach up above these and chew the crown of the tree. Poisoned barley is not effective, though used very extensively. Have caught a few cottontails but none of the "jacks," which are doing the damage. Wire fencing for 20 acres is nearly prohibitory as to price.—Subscriber, Upland.

Of course the best of all protection from jackrabbits is rabbit proof fence. Next best is perhaps organizing the neighborhood in a rabbit drive. Poisoning, using watermelon rind or some similar bait is only partially successful. If a drive can be staged during midwinter months there is possibility of disposing of both meat and fur to slight advantage. Meantime wrap the trees higher if possible. Newspapers have been found very satisfactory. The rustle of the paper seems to frighten them away. Another preventive of injury to trees is the use of bacon rind or the fat of pork rubbed over bark or trunk. Any animal fat or blood freshly applied on the tree



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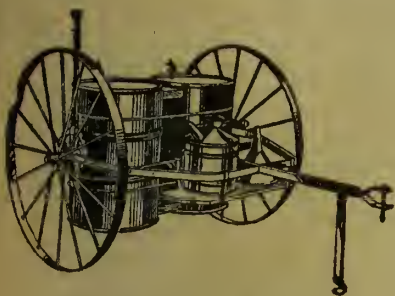
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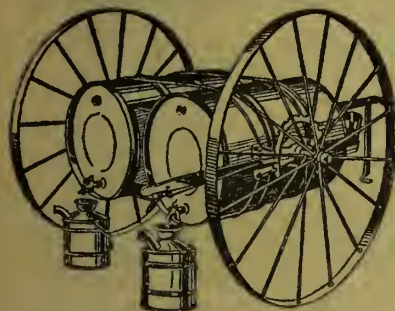
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seems to be repulsive to the rabbit. A heavy application of lime-sulphur wash is also effective. Wood veneer protectors or chicken wire fencing, gunny sacks, corn stalks, or other similar substances also afford protection.

Sulphuring Thompson Seedless

Will you please tell me how to sun dry and cure Thompson Seedless grapes for raisins. Is it advisable to use sulphur, and if so, how is it used? —Subscriber, Anaheim.

I should judge that Thompsons could be dried in the sun at Anaheim without the use of sulphur. Sulphur is used in some cases to make bleached Thompsons, but it spoils the real raisin flavor. If weather conditions are such that the drying operation must be hastened, it would be better to dip the fresh fruit in a one per cent hot lye solution for a short time. After they have been carefully rinsed in fresh water they may be spread on trays and dried in the sun in the usual way. When the surface of the fruit which is exposed to the sun becomes dark colored it should be turned so as to expose the other side of the bunch to complete the drying. Some of the fruit will dry more quickly than the rest and the moisture content is evened up by packing in boxes and allowing it to go through a sweating process.—F. K. H.

Red Spider on Berries

How can I get rid of red spider affecting berry plants? The plants give me no fruit whatever.—T. Tokuyama, El Monte.

Sulphuring with a good dusting machine is the best method. This should have been done much earlier in the season. However, some of next year's red spiders may be kept away by thorough dusting at this time. This work should begin in April of another season and before the spiders make their appearance.

Drilling Granite

Is it possible to drill through hard blue granite?—Subscriber.

Yes, the diamond drill will negotiate any form of granite.

Bean Blossoms Blight

Please tell me why my Kentucky Wonder beans do not produce. They look green and healthy, bloom well, but the blossoms drop off. I keep them well watered and cultivated.—Subscriber, Upland.

This appears to be mildew. Beans should be sprayed (dusted) with sulphur just before the blossoms appear, and if mildew is persistent or generally prevalent in the district dust again when green beans are nearly ready to pick. Better also irrigate and sprinkle after sundown or at least late in afternoon.

Roses and Oranges

Kindly let me know what can be the matter with my rose bushes. The canes seem dry and lifeless and there is no new growth. They bloom, but each bloom gets smaller. Treated them for rust early part of season with Bordeaux mixture, and the rust has left. I water them well every seven or ten days, also sprinkle the foliage; also have sulphured them before sunup about four times this summer, Bordeaux about three times and once sprayed them with atomic sulphur and arsenate of lead (liquid), but a veil or web forms over the bushes just the same. The roses are out in the open, 15 feet from house, and clean cultivated; not a weed near. Also, after watering I cultivate the soil. Have used these same methods on young orange trees, but the leaves curl up and get thick and tough as fast as they grow out.—Subscriber, Glenn.

The leaf curling symptoms would suggest the presence of aphid and if so spraying with 40 per cent nicotine sulphate, diluted according to directions on the package, would easily control them. But with the eight sprayings mentioned, added to frequent sprinklings with water, it is not probable aphid could multiply fast enough to cause the condition described. Is it not possible that soil conditions are at fault?—E. B.

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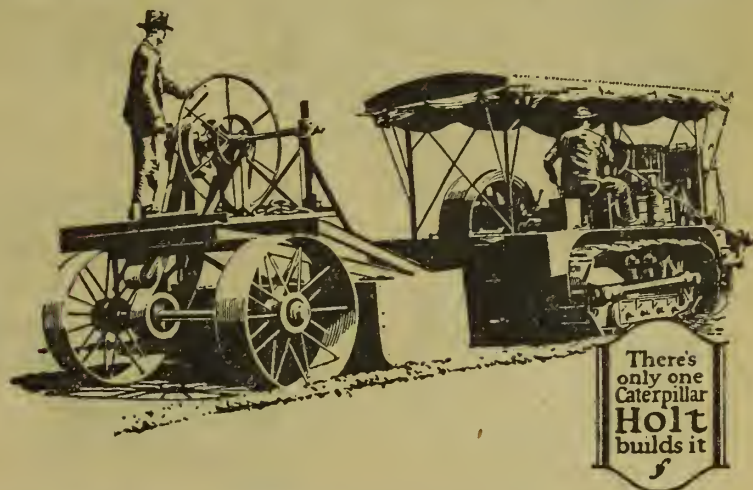
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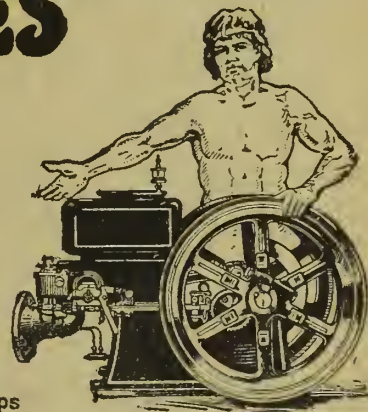
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R.F.D.B. Box 74
Hanford, Kings County, Cal.



California Wonder

Hairy Peruvian Alfalfa Seed

(FANCY)
Others Sell It! (You Pay the Commission)
We Grow, Reclean and Sell
Every Sack With This Certification Tag!

Fancy
Smooth
PERUVIAN
(Certified)

Fancy
COMMON
or
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on request.

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ARIZONA CERTIFIED ALFALFA SEED

This certifies that the alfalfa field of *Morton*

located in *Yuma Valley* has been examined by me in cooperation with other representatives of the Arizona Experiment Station and that this field is commercially pure **Hairy Peruvian**

No warranty is given as to identity, purity or viability of this seed.

J. W. Longstreth
County Agricultural Agent,
Yuma.

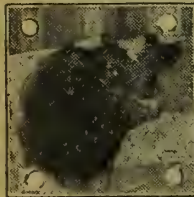
Yuma Valley alfalfa seed is noted for its quality.

The crop this year is very short, less than one-half normal.

You should order now, not only for this reason but to get it pure from the grower.

We Guarantee Identity of Every Sack. Grower's Initials on Each Sack. Fields Personally Inspected by J. W. Longstreth.

Yuma Valley Produce Growers Assn., Yuma, Arizona



SHORTHORN STEERS PAY

Week after week Shorthorn steers are topping the principal markets. For instance, at four of the leading markets, Chicago, Kansas City, Omaha and Denver, Shorthorns made the top for the entire week two weeks in succession recently. At all of these markets, mind you, Use a good Shorthorn bull and grow Shorthorn beef. You get added weight and quality both,—and get pay for both.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION

13 Dexter Park Ave.,

Chicago, Ill.

CARRUTHERS SHORTHORNS Bulls For Sale

Just now this herd can supply a number of exceptionally high class young bulls that are just the sort for range improvement. They are well bred, thick fleshed, heavy boned, and good colors—and they are priced to sell.

Carruthers' bulls will be found on many of the best ranges in the West—there is a reason.

We also have Berkshires.

Visit the farm or write for prices.

W. M. CARRUTHERS
Live Oak California

Ormondale Ranch Shorthorns Redwood City, Cal.

HERD SIRES

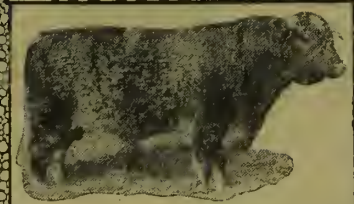
Boquhan Guinea Stamp, the great imported Young Broadheads bull. Golden Goods Jr, sire of LITTLE SWEETHEART, Grand Champion International Show, Chicago, 1919.

Bulls and heifers for sale.

Duroc-Jersey hogs for sale.

James McDonnell, Supt.

CALEDONIA SHORTHORNS



Imp. Caledonia

Caledonia Shorthorns constitute one of the choicest collections of the breed owned in America. Our herd bulls, Imp. Caledonia, Gainford Matchless, grand champion at the 1919 San Francisco show and Pine Grove King stand out prominently in the West. Our females represent choice Scotch and American families, and are noted for their type and quality. We can at all times furnish foundation material and bulls suitable for any herd or for the range. Our prices are moderate and every animal is guaranteed. Visit our farm and herd. Send for special bull list.

CALEDONIA FARMS
WEST SACRAMENTO, CALIF.
Office—57 Post St. SAN FRANCISCO.

Large Premiums



PRIZE money of \$55,000 announced in premium lists mailed last week to 3,500 livestock breeders and exhibitors from Missouri River points west, together with the comprehensive entertainment and educational features planned, is creating tremendous enthusiasm in the Los Angeles Livestock Show, October 2-10, according to E. W. Murphy, president of the association.

"Letters pouring in reserving display space prove that Los Angeles is receiving the cooperation of the entire West in staging a really great exhibition," says Mr. Murphy.

Some of the world famous farm animals to be exhibited at the show include: Jumbo Sensation, a Duroc boar, valued at \$15,000, of Tu-Tuck-A-Nula Ranch, Van Nuys, owned by Mrs. R. E. Whitley; four Durocs, worth \$32,000, from the Diamond Bar Ranch, Spadra; King Korndyke Pontiac Acme, the prize Holstein bull, costing \$41,000, owned by Anita M. Baldwin; and a herd of 28 Guernsey cattle, which have proved their superiority at national stock shows, from the Edgemoor Farm, Santee, Walter H. Dupee, owner.

A high grade horse show is being arranged by Directors R. L. English and T. H. Dudley and Manager C. R. Thomas. Premium lists offering \$7,500 in cash prizes are expected to bring here the finest exhibition horses in the West. Already several carloads are promised from Seattle, Portland, Tacoma and San Francisco. The show will be managed by T. T. Strain of Portland. Prof. E. A. Trowbridge of the Missouri state college will judge the horses.

Each of the eight classes draw prizes of \$125. Championship stakes are \$500.

A synopsis of premium list for the Livestock Show follows:

Cattle entries close September 5.

Beef Breeds

Shorthorns: First prize, \$50; second, \$40; third, \$30; fourth, \$20; fifth, \$10. Champions and grand champions, \$50 to ribbon. Herds, \$70, \$60, \$50, \$30. Groups, \$70, \$60, \$50, \$30, \$20.

Herefords: Prizes, \$25, \$20, \$15, \$10, \$5. Champions, \$25 to ribbon. Herds, \$35, \$30, \$25, \$15. Groups, \$35, \$30, \$25, \$15, \$10.

\$750 will be added to the above classes by the American Hereford Cattle Breeders Association.

Wednesday, October 6, American Polled Hereford Breeders Association will hold a public action sale of high class registered Polled Herefords.

Aberdeen-Angus: \$25, \$20, \$15, \$10, \$5. Champions, \$25 to ribbon. Herds, \$35, \$30, \$25, \$15. Groups, \$35 to \$10.

Special premiums are offered by the American Aberdeen-Angus Breeders Association: First prize, \$30; second, \$20; third, \$14; fourth, \$10; fifth, \$10.

Fat Cattle: \$40, \$30, \$20, \$10.

Beef Cattle, Car Lots: Steers or heifers, 15 head, over 18 months old, first prize, \$400; second \$300; third, \$200. Registered bulls, car lots, any breed but not mixed, over 12 and under 30 months old, prizes, \$400, \$300, \$200.

Dairy Cattle

Holstein-Friesian: \$20, \$15, \$10, \$5, \$5. Champions, \$20 to ribbon. Herds, \$25 to \$5. Groups, \$20, \$15, \$10, \$5; five cows in milk, \$25, \$20, \$15.

The Holstein-Friesian Association will add 20 per cent to every award made in classes 1 to 13 and in herds. Also a silver cup for best exhibitor's herd of registered Holstein-Friesian.

Jersey, Guernsey and Ayrshire: \$20, \$15, \$10, \$5, \$5. Champions, \$20 to ribbon. Herds, \$25 to \$5. Groups, \$25 to \$5.

The Ayrshire Breeders Association will present a silver medal to the exhibitor winning the most money in single classes on animals bred and exhibited by himself.

Dairy Shorthorns and Dutch Belted: \$15, \$10, \$5, \$4. Champions, \$15 to ribbon. Herds, \$20 to \$10. Groups, \$15 to \$10; five cows in milk, \$25 to \$15.

Brown Swiss: \$15 to \$4. Champions, \$15 to ribbon. Herds, \$20 to \$10. Groups, \$25 to \$10.

Horses, Asses and Mules

Entries close September 5.

Percherons, Belgian, Shire, and Clydesdale: Stallions, \$25 to \$2; mares, \$25 to \$2; champions, \$20 to ribbon; groups, \$20 to \$4; grand display, \$20 to ribbon.

Light Horses, Standard Bred: Stallions, \$20 to \$4; mares, \$20 to \$4; families, \$25 to \$10.

Thoroughbred Horses: Stallions, \$20 to \$10; mares, \$20 to \$10.

Jacks and Jennets: \$20 to \$4; foals, \$10 to \$5; groups, \$20 to \$10.

American Saddle Horses: Stallions and mares, \$20 to \$4; families, \$25 to \$10.

Arabian Horses: Stallions and mares, \$20 to \$10.

Swine

Entries close September 5.

Berkshire, Poland-China and Duroc-Jersey: Boars and sows, \$10 to \$2; champions, grand champions, herds, groups, fat barrows, \$12 to \$2.

National Duroc-Jersey Record Association offers special prizes of \$25 to \$8, to which the Livestock Show will add \$25 in each section.

Hampshire: Prizes, \$12 to \$2 in all classes, to which \$254 will be added by the American Hampshire Record Association.

Chester White and Yorkshire: Prizes, \$12 to \$2 in all classes.

Boys and Girls Pig Club Specials—Duroc-Jersey, Berkshire and Poland Chinas: Boars and sows, \$6 to \$2; sow and litter, \$10 to \$6. Fat hogs, \$10 to \$2.

Sheep

Entries close September 5.

Rambouillet, American or Delaine Merino, Corriedale, Shropshire, Hampshire, Southdown, Cheviot, Dorset Horns, Cotswold, Leicester, Romney, prizes \$12 to \$4; fat sheep, \$15 to \$5; car lots of 35 head of sheep, \$100, \$75, \$50.

Goats, Milk

Entries close September 5.

Anglo-Nubian, Saanen, Toggenburg, American Anglo-Nubian, American Saanen, Angora, prizes \$10 to \$4.

Poultry, Rabbit and Pigeon Department

Entries close September 15.

Premiums: Poultry and rabbits, first, \$2; second, \$2; third, \$1. Exhibition pens, poultry, first, \$5; second, \$3; third, \$2.

Special and sweepstakes prizes in poultry department, \$20 to \$5; rabbit department, \$20 to \$2; pigeon department, \$10 to \$5; commercial poultry, \$10 to \$1.

Livestock Insurance

The fall fair and exhibition season is at hand. THE HARTFORD LIVE STOCK INSURANCE COMPANY will insure your show stock (horses, mules, jacks, cattle, registered milch goats, and registered swine) against death from any cause, while at home or on the road, including the hazards of transportation. Policies broad and liberal; rates reasonable—yet adequate to insure prompt settlement of claims. Before shipping see the Hartford Agent in your town or address

Roland C. Drake, Asst. Gen. Agt.
Hartford Building,
San Francisco, Calif.

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By buying fertilizers on a unit basis and not a cost per box basis, you are losing a money making, labor saving, crop increasing advantage.

Agricultural Chemical Works

518 I. N. Van Nuys Building

Los Angeles, Cal.

Telephones: Pico 3619; Home 66022

Milk Costs in Northern California

B. F. McLeod, cost accountant for the Northern California Milk Producers Association, has submitted the following semi-annual report covering the cost of milk production for the six months ending May, 1920, in ten dairies owned by members of the association:

Twenty dairymen promised to keep accurate accounts of feed, etc., and report same each month, but only ten of them have furnished the necessary data to make it possible to carry on this work. The basis used in this work is as follows:

The interest allowed on investment is six per cent, which is only allowed on the stock, dairy buildings, equip-

ment and land actually covered by the buildings and corrals. Five dollars per cow for the number of cows milking during the month, plus ten per cent of the net milk credits is allowed for labor. This basis seems to suit equally well both large and small dairies. Records cover ten dairies ranging from ten to 125 cows. The average number of cows in the ten dairies is 400. For depreciation I have allowed 15 per cent on stock, five per cent on buildings and ten per cent on equipment. Actual amount paid for insurance and taxes is used.

The credits include: Calves born, at actual value; manure at \$10 per cow per year; milk used on the ranch;

sacks and hides sold, as well as all milk sold. A permanent record is kept, including complete account of feed used, average production and but-terfat test of each dairy.

Three of these dairies fed hay, concentrates and silage, and their average production per cow was 732 pounds per month. The other seven fed principally hay and no concentrates, and their average production per cow was 592 pounds per month.

The average feed cost per month for all was \$13.85 per head per month. While the two dairies that have made the best showing in every way—one of which, No. 6, feeds approximately 33 per cent hay, 47 per cent concentrates and 20 per cent silage, and the other, No. 1, feeds 63 per cent hay, 35 per cent concentrates and 12 per cent silage—have shown an average feed cost per head per month of \$13.82, which seems to show that the average production may be increased and the cost of production may be reduced by proper feeding.

The fact that during the month of April the cows had plenty of green pasture greatly reduced the cost at

that time, but as the average production is increased from the same cause, making the supply greater than the demand, the net amount received is also much lower during this month.

The following shows the average cost of milk per 100 pounds and the average net amount received for same:

December, 1919—Average cost per 100 pounds, \$5.20; net amount received, \$3.42.

January, 1920—Average cost per 100 pounds, \$6.07; net amount received, \$3.57.

February, 1920—Average cost per 100 pounds, \$5.54; net amount received, \$3.08.

March, 1920—Average cost per 100 pounds, \$4.24; net amount received, \$2.84.

April, 1920—Average cost per 100 pounds, \$2.73; net amount received, \$2.79.

May, 1920—Average cost per 100 pounds, \$3.52; net amount received, \$3.08.

Average for the six months: Cost per 100 pounds, \$4.55; net amount received, \$3.13.

Silo Filling Time

Corn canning time, that period when a portion of the corn crop is prepared and sealed in the silo, will soon be here. Every silo owner should see that the structure is in best condition to receive the succulent corn crop.

As the farmer gives the silo the thorough "once over" he must look out, first of all, for proper protection for the interior, according to United States department of agriculture specialists. The annual application of a mixture of coal tar and creosote, both inside and out, adds greatly to the life of a wood silo, as it protects the wood against decay. The coal tar creosote solution is relatively inexpensive and the cost of treating the silo with this material is so slight that no silo owner should allow his silo to stand without this protection. It is also essential that he tighten loose hoops in order that no cracks or crevices allow air seepage. If the hoops have been kept tight, however, during the period that the silo is empty, they should be loosened just before filling to prevent buckling or breaking of hoops due to swelling when the dry staves absorb moisture from the green silage.

In the case of wooden silos it may be advisable to cement around the bottom of the silo where the foundation joins the superstructure. In the case of old silos it will be profitable for the farmer to go over them carefully to look for cracks, and wherever he finds them to seal with tar and oakum, wood filler or other effective material. If the bottom of the silo has decayed slightly the owner may saw off whatever amount is necessary, and then, by the use of blocking, gradually lower the silo to the foundation again, cementing around the base as previously described.

When the silo is air tight and able to stand the most rigid inspection, the owner may consider the actual work of filling. A wise precaution is to place several feet of straw in the bottom of the silo to act as a protective blanket between the bottom of the silo and the feed, as ordinarily silage juices collect there unless proper facilities for drainage are provided and the straw acts as a valuable absorbent for this excess of moisture which otherwise might damage the bottom silage.

In the actual operation of filling the silo it is of paramount importance that no air pockets be left; this is prevented by sufficient tramping. It depends largely on the diameter of the silo how many men should be used to tramp the ensilage, but even in silos as small as 12 feet in diameter, if sufficient help is available, at least three men should be used, with an increase in the force as the size of the silo increases.

The proper sealing of the silo also is important, because where the silo is correctly topped off there usually is a minimum loss of the succulent feed. A good plan is to snap the ears from the last three or four loads of corn that are run into the silo. Straw or coarse hay may also be used as a topping. Then oats may be sown over the top of the contents after it has been thoroughly moistened, if neces-

sary, although as a rule the corn, if cut at the proper stage, is moist enough without extra watering. The oats sprout and form a dense blanket which prevents the ensilage from spoiling.

PREPARE GILTS NOW FOR SPRING BREEDING

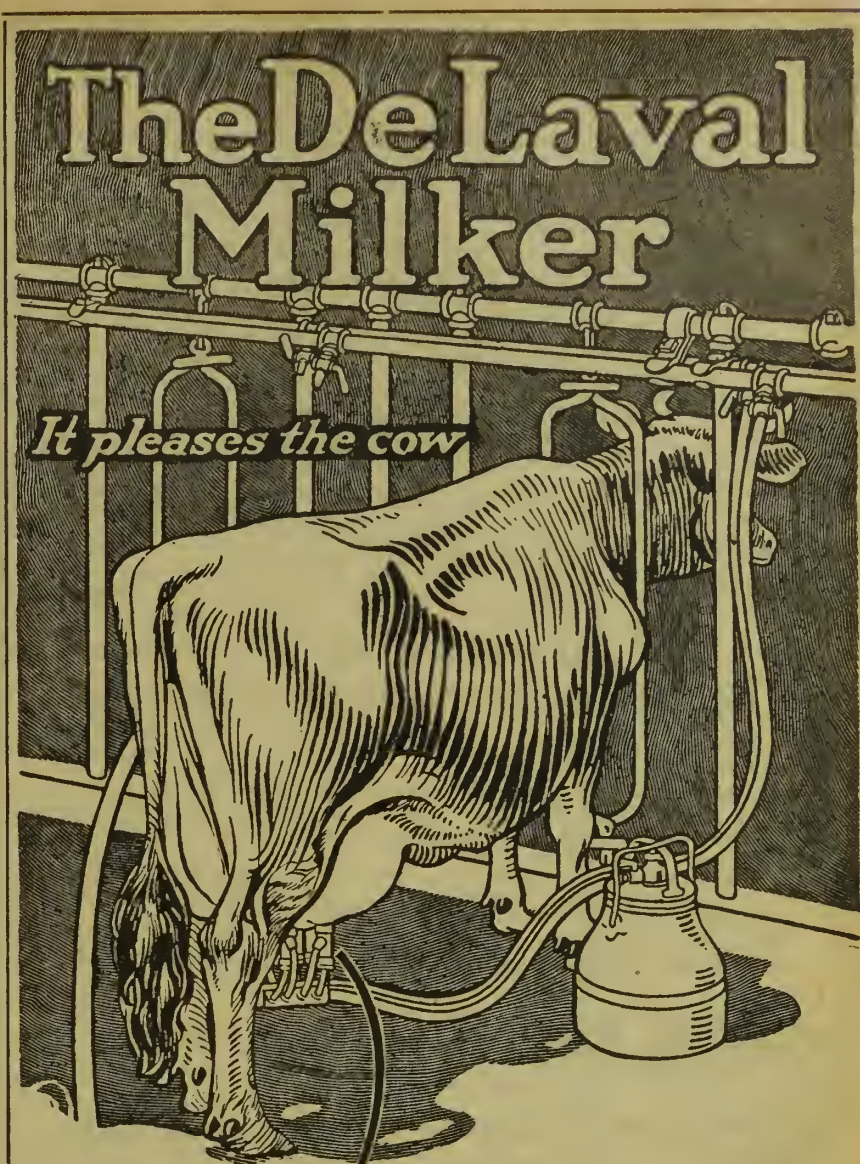
Help the gilts now to develop and get in condition for breeding next spring. By August, in practically all sections of the country, the gilts farrowed last spring and selected for future breeding work are weaned and ready to be primed for next season's work.

A brood sow to be conditioned properly should be in such flesh at breeding time that she will gradually increase her weight according to normal and natural development from that period until the date of farrowing. In order to maintain her in desirable condition, she must be supplied with plenty of protein. Whole oats fed in a self feeder is an excellent nutrient for growing gilts. In addition, the young females should have access to good forage crops such as alfalfa, clover, rape, rye, or any of the other small grains. A small allowance of corn is also advisable. Shorts or middlings can be fed with considerable success. A combination recommended by specialists of the United States department of agriculture consists of a mixture of shorts or middlings, oats supplied in self feeders, corn in limited quantities and succulent pasture ad libitum.

Gilts should not be allowed to fatten materially, as ordinarily a fat sow is a poor breeder and mother. On the other hand, a well grown gilt which is not allowed to store up surplus avoirdupois makes a satisfactory brood sow for the following year if she is properly handled, other conditions being equal.

NEW BERKSHIRE SALE RECORDS

Three world's record prices were broken at the recent Berkshire sale held at the Gossard Breeding Estates in Indiana. Epochal Laurel, an 11 months old Berkshire boar, sold for \$6,500, a new world's record price for a Berkshire boar at public auction. He was bought by Cyril Maitingly of Indiana. This boar is a son of Laurel Champion, out of a daughter of Epochal. The second world's record was made when the sow, Epochal's American Mayflower 6th, brought \$3,900. She went to Paul Fitzsimmons of New Hampshire. This sow was a big winner at the largest state fairs and at the National Swine Show last year, and is a sister to Epochal's Thor, the first prize junior yearling boar at the National. Epochal's American Mayflower 6th was safe in pig to Laurel Champion. The third world's record broken was that for the average price at any public sale of Berkshires. This sale averaged \$665.30.



Simple and Sanitary Teat-Cups

The simplicity of construction of the De Laval teat-cups is plainly shown in the illustration. They are easily

taken apart and put together, and very easy to clean and keep clean.

The rubber lining is simply a straight piece of rubber tubing. It is small enough to fit the smallest teat and is held in the metal casing, which is large enough to fit the largest teat. Hence the De Laval teat-cups are self-adjusting. They are made in only one size, which fits all teats.

The liner is made of pure rubber, scientifically correct in construction and design, producing a massaging action on the teat between suction periods.

A flexible rubber mouthpiece is formed by the top of the liner in such a way that no metal touches the teat.

The De Laval Milker is faster, more economical and more reliable than any other method of milking. The sanitary features are of special importance. It is quickly and easily cleaned, and is used by many dairies in A. R. O. work and where certified milk is produced.

An additional insurance of lasting satisfaction to users of De Laval Milkers lies in the De Laval Company's well-known facilities and reputation for service.

Write to Nearest De Laval Office for Milker Catalog
Mentioning Number of Cows Milked

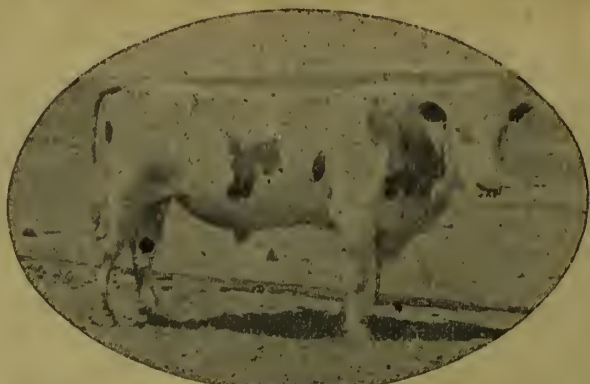
DE LAVAL DAIRY SUPPLY CO.

THE LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST

61 Beale Street

San Francisco, Cal.

WHO WILL OWN HIM?



There are only two cows in the world that have ever produced over 33,000 pounds milk in one year—Tilly Alcartra and Zarilda Clothilde 3d De Kol. There are only four bulls of service age in the world having dams that have produced over 33,000 pounds milk in one year.

COLONY ZARILDA NEWMAN

is one of the four, and he will sell at public auction, to the highest bidder in the Complete Dispersal of the WM. M. BRAY HERD

50—HIGH CLASS REGISTERED HOLSTEINS—50

State Fair Grounds, Sacramento, Cal., Thursday, August 26, 1920 at 10 A.M.

The offering consists of 47 females and 3 bulls, a splendid herd of young, healthy cattle of exceptional type and backed by some of the breed's greatest production.

A large number of granddaughters of MARGIE NEWMAN, the former world's record milk cow, will be in the sale, including a great 7 year old cow that made 31.60 lbs. butter in 7 days from over 740 lbs. milk as a junior 4 year old. Also a large number of young cows and heifers out of dams with official records up to over 31 lbs. butter in 7 days.

The foundation of this herd originally came from a federal accredited herd and a herd under federal test. It has passed two federal tests and one by a state authorized veterinarian without a reactor. There has never been a case of abortion in the herd.

Every animal positively guaranteed to be a breeder; every animal over six months old tuberculin tested and sold subject to retest by the buyer.

Catalog free on request. Write for one.
Management

California Breeders Sales and Pedigree Co.

J. M. Henderson, Pres. C. L. Hughes, Sales Manager,
Sacramento, California.

Auctioneer—Col. Ben A. Rhoades, Los Angeles.

Allana Farm, Dixon, Cal.

—Sells—

40---Registered Holsteins---40

at Public Auction

Thursday, September 23, 1920

This sale is held to adjust the existing partnership between J. P. and W. W. Phillips, and will include the entire herd excepting only one heifer and a few heifer calves.

King Pietertje Korndyke Ormsby

the first son of Sir Pietertje Ormsby Mercedes ever offered at public sale in the west will be a star attraction, and an opportunity for some owner of a high class herd to secure a son of the greatest sire of long time producers and show winners yet developed in any breed.

Catalog of sale on request.
Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Calif.
Auctioneer—Col. Ben A. Rhoades, Los Angeles.

Holstein Bull Calves For Sale Very Reasonable

Sired by Sir Veeman Korndyke Pontiac and out of yearly record cows. Write for prices, photo and pedigree.

BURR FARM

Box 220, Route 2. East 26th and Downey Road, Los Angeles

The Victory Herd of Holsteins

Holsteins of known value, headed by Sir Piebe De Kol Sexls Pontiac, a son of King Sexls Pontiac Count, acknowledged one of the breed's greatest sires, and our junior herd sire, King Pontiac Alcartra Prilly, whose dam made 36.61 lbs. butter out of 805 lbs. milk in 7 days, now on yearly test. A young bull from this herd is a profitable investment.

HILLCREST FARM, H. E. Spires, Mgr., Caruthers, Cal.
Duroc-Jersey Swine of Highest Quality

Home of King Korndyke Pontiac Mead

Bargains in Bull Calves from Tested Dams.
Top Herd in U. S. for Fat Production of 100 cows.
LOS ANGELES COUNTY FARM HOLSTEINS

HONDO, CALIF
3 Miles South of Downey on Downey-Long Beach Blvd.

Shire Horses

FOR SIZE BONE and QUALITY
More is required of horses than ever before hence the need of more size, weight and power. Large geldings never were higher. Shire geldings usually top the market. Use Shires to raise larger and better horses.

For information on Shires write,
W. G. Lynch, Secretary American Shire Horse Association, Tonica, Illinois.

California Breeders

have sold more than \$500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

CALIFORNIA BREEDERS SALES & PEDIGREE CO.,

C. L. HUGHES, Sales Mgr. Sacramento, Cal.

Practical Disinfecting

Realizing the necessity for uniformity in methods and a more thorough knowledge of the germicidal properties of various disinfectants, the division of animal industry of the state department of agriculture recommends the following procedure.

When a barn or stable is to be disinfected, three factors should be considered: First, the preparation of the building so ordered as to be able to get to the bacteria with the disinfectants; second, the application of a disinfectant that is actively germicidal; third, an effective method of applying the disinfectant.

Making Ready

A certain amount of essential preliminary work should be done to get the building in shape for maximum results. The walls, ceiling, partitions, etc., should be thoroughly swept to remove all dust and cobwebs. Any adhering filth should be removed by scraping and scrubbing vigorously all such areas with a strong lye solution and a stiff brush. All soft or porous wood that might absorb disease germs should be burned. Manure and all other refuse from the stable and barn should be removed to a place to which animals do not have access. It is better to burn it or saturate it with a solution of chloride of lime in the proportion of six ounces of the lime to one gallon of water. When this is not possible it should be spread thinly over the ground and exposed to sunlight and air which will in time render it harmless. In either case, however, livestock should not be permitted to come in contact with it.

If the floor is of earth, it is practically impossible thoroughly to disinfect it, but much good can be accomplished if about four or five inches of the surface soil be removed and disposed of in the same manner as the manure. The dirt used to replace that removed should come from an uncontaminated source. In all cases, if possible, a concrete floor is recommended for the reason that it is sanitary and durable.

Selecting Disinfectant

With the field of operation now prepared, the next consideration is the selection and preparation of a disinfectant. The germicidal strength and properties of solubility of this agent should be known and when applied must not be dangerous to animal or man.

There are thoroughly dependable dips and disinfectants manufactured by reliable concerns which are available. While some of these are proprietary articles, their effectiveness, ease with which they are used and the fact that full directions are given on the package make them most attractive to all stock owners. Chemists have made most thorough investigation and fitted these products to almost every situation which may arise on the stock ranch. These are often advertised in the columns of the California Cultivator and may be had from dealers in livestock supplies.

Applying

The best method of applying the disinfectant is by means of a strong spray which will not only cover but will penetrate cracks and crevices. After the disinfectant has been applied, the walls, ceilings, partitions and pillars should receive a coat of limewash. This is prepared by adding four ounces of chloride of lime to each gallon of water. Wagons used for hauling infected litter, dirt, etc., should be thoroughly cleaned and disinfected.

Watering Troughs

Since watering troughs play an important part in the transmission of disease, they also should be thoroughly disinfected in a most thorough manner. Each trough should be emptied and thoroughly scrubbed. This done, the trough should be filled with either of the previously mentioned disinfecting solutions and left covered for 24 hours. At the end of this time disinfection should be complete. The solution is then drawn off and the troughs thoroughly rinsed to remove all traces of the disinfectant.

Harness

Harness and other leather should be

cleaned by scraping and washing. All such materials should be immersed in the disinfecting solution for a period of six to eight hours. They should then be rinsed in clear water and dried, after which they should be oiled in order to prevent them from cracking or becoming brittle.

Brushes, cars and currycombs may be factors in transmitting disease. They also should be cleaned and washed thoroughly and soaked for six to eight hours in the disinfectant.

VIVE LA FRANCE SETS HIGH MARK FOR PERSISTENCY

Vive La France 319616 sets a new record for persistency for all breeds by producing 15,271.8 pounds milk and 1,039.29 pounds fat in her fourth official year's test. In her four tests Vive has produced a total of 3,596.85 pounds fat, which exceeds the first four made by Tilly Alcartra by 577 pounds fat, and those made by Sophie 19th of Hood Farm by 843 pounds. With four yearly records averaging 900 pounds fat, Vive La France has outdistanced these two leading contenders for persistency honors by a wide margin. Her four records to date are: Milk 9,210.4 pounds, fat 633.29 pounds, at 2 years; milk 12,744.8 pounds, fat 892.63 pounds, at 3 years 2 months; milk 14,925.7 pounds, fat 1,031.64 pounds, at 4 years 7 months; milk 15,271.8 pounds, fat 1,039.29 pounds, at 5 years 11 months; totals, milk 52,152.7 pounds, fat 3,596.85 pounds.

It was on completing her second record that Vive La France first became a prominent character in the Jersey world, as her record of 892 pounds fat was a new high record for a junior three year old Jersey. Her next record won her two championships as the senior four year old breed champion and also as world's champion Jersey, which honor she held for almost a year. Vive's latest record comes within eight-tenths of a pound of regaining for her the Jersey world's championship, which is now held by

Best for Every Farm Use The Guarantee Proves It



Red Seal Dry Batteries

Under every condition, regardless of weather, and no matter how rough the going Red Seal Dry Batteries will keep your tractor running at par.

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Thousands of tractor owners will use no other! Best also for farm engines, autos, door bells, hand lanterns, telephones, etc. Study the label! Insist on genuine Red Seal Dry Batteries.

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Under our plan, every dealer's supply of Red Seal Batteries is always fresh. Call for them by name. Ask your dealer also for our famous handbook for engine owners, free to users of Red Seal Dry Batteries.

Manhattan Electrical Supply Co., Inc.
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SICK ANIMALS

BOOK about Sick Horses, Cattle, Sheep, Dogs and Poultry, mailed free. Address Dr. Humphreys' Veterinary Medicines, 156 William St., New York.

Plain Mary 268206 with 1,040.08 pounds fat to her credit.

It was not until she had been on test for seven months that the possibility of making a world's record by Vive was considered. There is little doubt about her ability to beat this record had she been accorded, during the entire year, the treatment prospective record breakers receive, and had she not been exhibited at the Pacific International Exposition last November. She showed her class by winning the grand champion ribbon at the exposition, although this resulted in a considerable decrease in her fat production.

During the year 26 supervisions of Vive La France's test were made. Twenty-two supervisors, coming from four states, made these tests. In making new production records, Vive La France has not been neglecting her duty as a reproducer. She has carried a calf an average of 194 days during each of her four records and will have had five calves before reaching the age of seven years.

Pickard Brothers of Marion, Oregon, are the breeders and owners of Vive La France. She is a daughter of the gold medal bull, Golden Glow's Chief, the sire of 40 R. of M. daughters, whose ten best daughters average 738 pounds fat. Her dam is Sugar-in-the-Barrel, and although never officially tested, she was a very heavy producer. Including Vive La France, Sugar-in-the-Barrel has four daughters in the R. of M., two of them being full sisters to Vive.

Vive La France's last test is her first as a mature cow and what future records may be forthcoming time only will tell.

A MONSTER AUCTION SALE

One of California's greatest breeding farms will go under the auctioneer's hammer on October 19, when Rosamaines Rancho, owned by Stalder Bros., Riverside, will be sold to the highest bidder. On the same day, following the sale of the ranch, 50 registered Duroc-Jersey hogs, all of the registered Percheron mares and stallions, some high class work horses, a herd of grade dairy cattle, 2,000 White Leghorn hens, and all of the implements and equipment will be sold. On the two following days, October 20 and 21, the entire high class herd of registered Holsteins, numbering 150 head, will be dispersed. This is the largest farm auction sale ever made in the West, and there is already evidence that the sale will attract buyers from as far back as the Middle West. C. L. Hughes, sales manager of California Breeders Sales and Pedigree Co., will handle the sale, with Col. Ben A. Rhoades on the block.

Veterinary

Sow Has Enlarged Teat

I have a sow that has an enlarged teat. It is about six months since she had young pigs, so I don't think it could be milk fever, for it only started a month ago. It is the first teat behind the forelegs and is about the size of a goose egg and shows full of pus. There was a stake about nine inches high in her corral and I think she bruised herself on that.—Subscriber, El Monte.

The trouble has probably been caused by a bruise, as you suggest. Similar trouble is also found in the sow's udder when the sow is not dried up properly at the time she weans her litter. It should be lanced and washed out well with a good disinfectant. If you prefer not to lance it, it might be possible to paint it with iodine thoroughly, which would no doubt relieve the swelling. This can be done also before lancing. The lancing should be done so that the cut will come at the bottom of the swelling in order to let the wound drain well, which will cause it to heal more rapidly. The above treatment, if carried out, will no doubt relieve the condition.—G. E. G.

Oxnard, Ventura County, has 500 Mexicans topping beets.

Lee Union-Alls

*The most
popular
work
garment
in America*



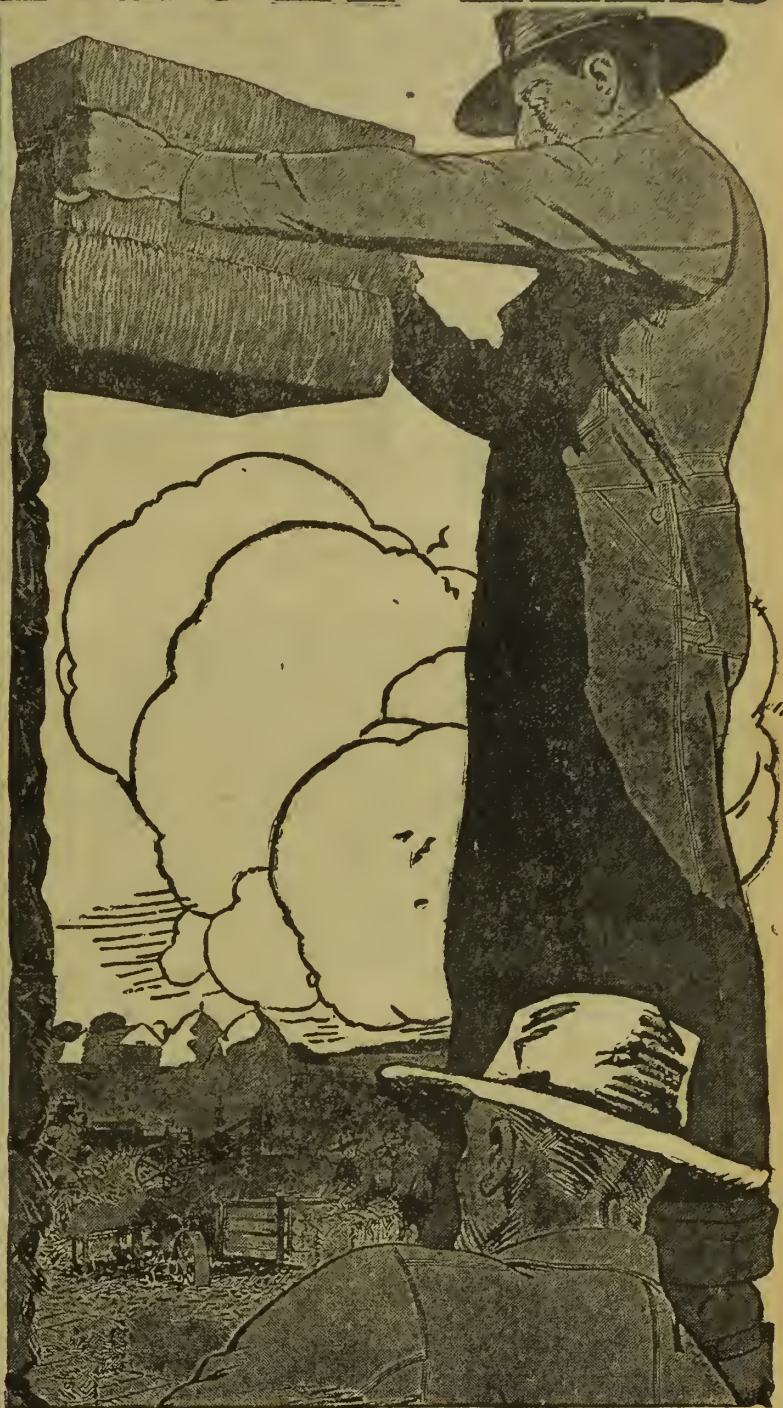
*THE original
one-piece suit
and the standard
of quality in work
clothing. Do not
be deceived by
imitations and
"just-as-good's."*

*Remember There Is Only
ONE Union-Alls—the LEE*

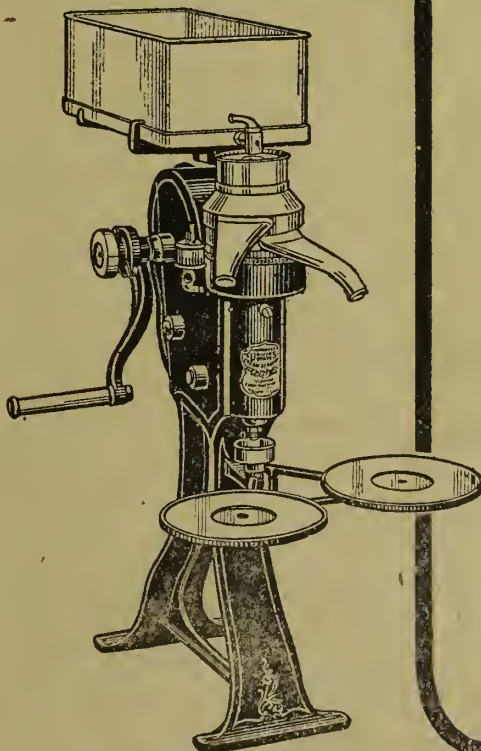
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Perfection—

Is it too much to expect?

A machine may be said to have reached perfection when, through mechanical and engineering excellence, it renders a degree of service in money- and labor-saving never before attained.

Years ago, the United States Cream Separator reached the peak of perfection as a money saver, by winning in open competition the world's record for close separation—a record that still stands.

The perfecting of the United States Disc Bowl is the last big achievement in cream separator building. With this notable refinement, the labor-saving features of the United States challenge and welcome all comparisons.

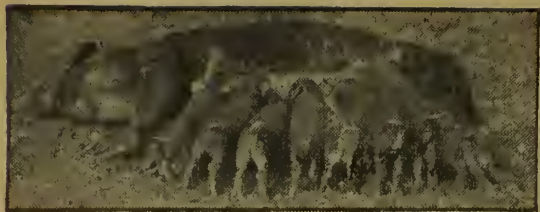
Those who know the ease of operation, the simplicity of cleaning, say the United States represents perfection in the most important detail of milk handling.

Write for literature today—but be sure to have the United States dealer near you show the machine itself.

Vermont Farm Machine Corporation

Bellevue Falls, Vt. Chicago, Ill.
Salt Lake City Portland, Ore. Oakland, Cal.

When Writing to Advertisers Say You Saw Their Ads in the California Cultivator



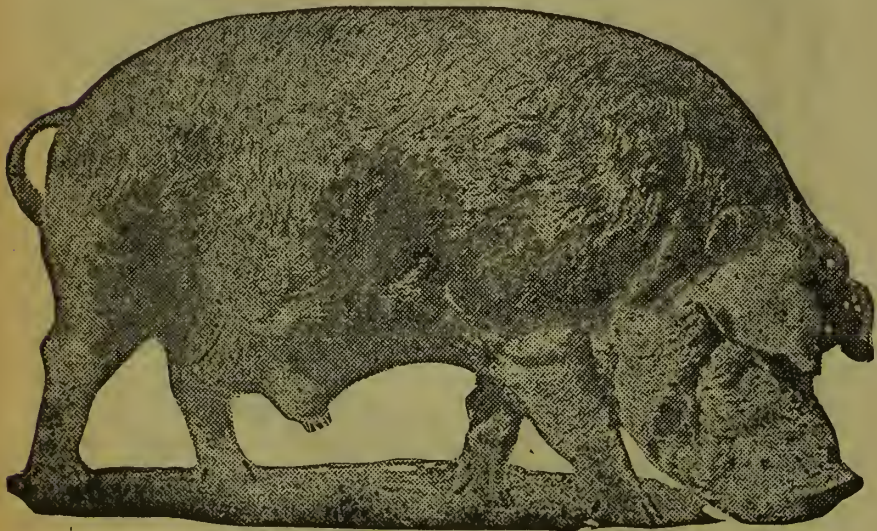
MORE PORK IN LESS TIME

Duroc-Jersey hogs have a tendency to put on great amounts of pork at an early age. They are easy-feeding animals, and raise large families. These hogs were introduced less than 50 years ago, and yet in 1918, 51% of all the hogs marketed in the country were "Duroc-Jerseys." They are uniformly red in color. Increase your profits by raising Duroc-Jersey hogs.

Write for "DUROC-JERSEY HOGS ARE PROLIFIC AND PROFITABLE"—sent free to hog-raisers by the largest swine record association in the world. Over 12,000 members. The National Duroc-Jersey Record Association. Dept. 130 Peoria, Ill.

Diamond Bar Durocs

Double Your Dollars



ACE OF PATHFINDERS

This great boar headed the World's Grand Champion Duroc herd at the 1919 National Swine Show; also the first prize get of sire herd. All animals in both herds are owned by us.

He was Grand Champion at the Los Angeles Livestock Show and stood second to the world's grand champion at the National.

He is by Pathfinder, out of Hiawatha, by Crimson Prince, and, besides his show ring record, he is considered one of the greatest sires of the breed.

Buy These Breed Improvers

Now that we have decided not to hold a summer sale, we are ready to offer at private sale the greatest array of Duroc breeding and individuality ever put before California buyers. We have culled closer than ever this season, and every animal not fully up to the high Diamond Bar standard has been sent to the fattening pen. And those that remain—say, man, they are real ones!

SENSATION STRAIN BOARS AT SPECIAL PRICES

We have four or five January yearling boars of the Sensation strain ready for service which we are offering at especially attractive prices.

No matter whether you want a foundation herd, new blood for an established herd, or simply a boar to breed up a grade herd, we can satisfy you from the Coast's largest Duroc herd. While quality is high, our prices are reasonable, and every animal is sold under a guarantee of complete satisfaction. Call or write.

Diamond Bar Ranch

Fred Lewis

Owner and Manager

SPADRA

Los Angeles Co.

R. K. Walker

Hog Department

Cal.

The Greatest Duroc Boar of His Age! Choice Wonder 3d

a winner at the 1919 Iowa State fair, sired by the great boar, Mahaska Wonder, and a litter mate to the first prize junior boar of Iowa, heads our herd. He is the largest, heaviest boned, best footed boar in the state and he is being mated to the sows that have made this herd famous for futurity winners. Get your order in early for his pigs. Prices are most moderate. Satisfaction guaranteed.

JUNE ACRES STOCK FARM

V. F. Dolcini, Davis, Cal.

GEORGE W. BELL

A BUSINESS AUCTIONEER

When in need of high class auctioneering service I would be glad to have breeders and farmers correspond with me. I have had years of experience, know values and know pedigrees. I am selling for many of the leading breeders of California and am prepared to deliver the same results that have attracted this custom. Terms reasonable. Write, wire or phone.

GEO. W. BELL

Tulare, California

GOOD FEEDING AND CARE GET REWARD

Benefits resulting from good care and feeding of dairy stock are brought out clearly in the April reports of Minnesota cow testing associations.

There are 13 cows in each of two herds in a certain county association. One, the highest producing herd in that association, returned an average of 52.3 pounds of butterfat to the animal. The other, the lowest producing herd, returned an average of only 13.1 pounds of butter fat per cow, or 39.2 pounds less per cow than the average production of the leading herd.

"The high herd was fed silage and grain three times a day and hay twice. All feeding and milking were done in a thorough and regular manner. The rations consisted of liberal quantities of bran, corn, oats, oatmeal and cornmeal. Sixteen pounds of silage of poor quality and containing no corn was fed twice a day to each cow in the low herd. The hay, which was also of poor quality, was fed in a rack in the yard. One and one-half pounds of ground oats were fed. Regularity was not observed and the barn was not kept sanitary. The cows were turned out for the greater part of the day.

While the owner of the highest producing herd had the biggest feeding expense, his comfortable and contented cows returned him almost four times the butterfat produced by the low standing herd.

RECEIPTS FROM DAIRY TRIPLED

Keeping daily records of the milk yield of each cow where there is no cow testing association is a profitable practice. This is shown by reports on herd records received by the United States department of agriculture.

An instance where a herd has been greatly improved without increasing its numbers (by more than one cow) is found in a report from Oklahoma. The dairyman's cream checks for a given month amounted to \$78.42, the cream being obtained from a herd of 27 cows. One year later, after doing herd record work, he was able with a herd of 28 cows, just one more than he had at the earlier date, to sell cream to the value of \$223.60, or nearly three times as much—a pretty good return for care given to culling the herd and improving the management.

While the current prices for butter fat have increased somewhat, they have not trebled in a year, so it is obvious that there has been a large increase in the productiveness of the herd.

INSPECT SILO BEFORE FILLING

Before filling is started the silo should be examined for openings in the walls where air might enter and spoil the silage, and for rough places which might prevent proper settling of the corn. The hoops on stave silos should be tightened sufficiently to close all cracks, but they should not be tight enough to buckle the staves. The staves will absorb some moisture from the silage and the hoops should be released somewhat a few days after the silo has been filled to prevent the swelling staves from buckling or breaking the hoops. If the surface of the wall has become roughened a thin coating of rich cement will make them smooth. Metal silos may be prevented from corroding by an application of paint.

A careful inspection of the cutter, engine and corn binder previous to starting work will sometimes save unnecessary stops and repair bills. All machinery should be put in good running order, and enough teams and wagons provided to keep the cutter running steadily. Ten or 12 men idle at one time rapidly increase the cost of operation.

PRIZES FOR STALLION OWNERS

The Horse Association of America is going to divide \$100 in cash prizes among the three stallion owners who report to them the largest number of mares bred to a pure bred stallion this season.

The stallion owner who reports the largest number will receive a cash prize of \$50; the second largest report will win \$25, and the third largest report will win \$15.

The reports must be itemized, giving names and addresses of the owners of the mares and the name of the stallion. You can write these affidavits in your own way, so long as you give the facts and make affidavit thereto. Your local bank will attach suitable affidavit on request. Reports must be in by September 1, and cover this breeding season only—April 1 to the date of making report.

PROMPT CUTTING—MORE ALFALFA

Experiments conducted at the Nebraska agricultural experiment station indicate that alfalfa produces more if cut at the proper time. Tests were made for total yields per season when alfalfa was cut two, three, four and five times. It was found that three or four cuttings, depending on the season, gave the largest yield for that section of the state in which the station is located. "Forage Crops," Experiment Station Bulletin 169, says there are two indexes for proper cutting time. They are the appearance of the first bloom and the starting of a new growth at the crown and lower part of the old stems. Cutting should begin at the appearance of either index. Experiments also show that getting the hay into the stack or barn at the proper time means a saving of more leaves, which form 50 per cent of the value of the hay. In good drying weather a half day in the swath and a day in the windrow will ordinarily do. It is often better to stack a little green and let the hay brown cure than to have it rained on or lose too many leaves. Rain or dew is more likely to cause mold in the stack than the moisture in the plant.

GRAPEWILD FARM TO SHOW FINE CATTLE

Fourteen head of the famous Guernseys from Grapewild Farm at Escalon have been entered at the state fair. Former patrons will remember the fine specimens of this breed shown in former years by A. B. Humphrey, who states that this year's entries will be better than those of other years. Charley Moller, herdsman at Grapewild, has also prepared 29 head of hogs, the progeny of Grand Leader, grand champion at the Panama-Pacific Exposition. This lot contains entries in about all the swine classes for Berkshires and has a national reputation for class and type.

BIG DROP IN WOOL CONSUMPTION

A drop in wool consumption of nearly 17,000,000 pounds from the average for the six months of 1920 is seen in figures for June, 1920, just released by the bureau of markets. United States department of agriculture. According to the report, 46,000,000 pounds of wool, grease wool equivalent, entered into manufacture during that month, compared with 55,000,000 pounds for the corresponding month last year. Summaries for preceding months of 1920 have shown the following amounts used: January, 72,700,000 pounds; February, 63,700,000 pounds; March, 67,900,000 pounds; April, 66,900,000 pounds; May, 58,600,000 pounds.

The sharp decrease in wool consumption is a result of the curtailment of operations which began in the textile manufacturing industry in May and became more extensive in June. Many mills have been running on a short week schedule, while some have suspended operations entirely, the suspensions in many cases being for an indefinite period. Lack of orders, cancellations and deferred payments are given as primary causes for the unstable situation.

A committee of livestock people recently met in Chicago and discussed matters of livestock interest, but decided because of limited time that it was advisable to hold a more general meeting of livestock interests at some later time. "Therefore we recommend that the president of the American Farm Bureau Federation call a conference of the representatives of the various livestock organizations of the Middle West at Chicago in the near future to consider the vital questions now confronting the industry."

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
August 26, W. M. Bray, Sacramento.
September 23, Allana Farms, Dixon.

Herefords
November 4, Pacific Coast Hereford Breeders' Association, Sacramento.
November 5, J. H. Cazler & Sons, Sacramento.
November 6, H. M. Barngrover, Sacramento.

Shorthorns
September 30, Wilotta Ranch, Suisun.

Poland Chinas
August 21, Merced County Poland China Breeders' Association, Merced.
September 27, Hugh C. Shinn, A. J. Elliott and Alex D. McCarty, Tulare.
October 6, Kings Co. Poland China Breeders Assoc., Hanford.

W. M. Carruthers, Live Oak, reports the sale of a carload of Shorthorn bulls to the Newhall Land and Cattle Company. Included in the lot were a number of sons of the two well known Carruthers bulls, Count Glory, grand champion at the 1916 and 1918 California state fair, and Hallwood Villager, first as a two year old in 1918. Carruthers says that the Newhall firm has been greatly impressed with the possibilities of pure bred Shorthorns on the range and has demonstrated very definitely that such bulls will add weight to their steers. Only recently the Newhall ranch shipped over 400 steers to the Seattle market that averaged over 1,200 pounds as twos.

John A. Bunting, secretary of the Pacific Coast Hereford Cattle Breeders Association, writes that the association will maintain a headquarters booth at the state fair for the convenience of the association members. Cattlemen will be furnished Hereford literature. Bunting also says that the winning Hereford steer will be sold at auction during the fair.

A. W. Morris and Sons Corporation, Woodland, reports the recent sale of the young bull, King Marco Mead Alcartra, to Corydale Farm, Belleville, Kansas. This youngster is a son of King Marco Alcartra, and therefore a grandson of Tilly Alcartra. His dam,

Aralia Mead Pontiac De Kol, is a seven-eighths sister to the \$11,000 bull, Sir Aaggie Mead De Kol, who has been quite extensively advertised as the richest bred long distance bull in the world. In fact, the six nearest semi-official tested dams of this young bull have records averaging 922.2 pounds from 22,562 pounds milk, the number including no less than three records made in two year old form with first calf. King Marco Mead Alcartra was junior champion at the International Livestock Show at San Francisco last fall, his sire winning grand championship at the same show. His grandsire has twice won the same honor at the California state fair, and his great grandsire has four times been grand grand champion at the California state fair, while his great granddam has also won grand championship at that show.

Geo. W. Thomas, Arlington, is the owner of a herd of 60 registered Jersey females. Thirty constitute the milking string, showing a composite herd test of better than five per cent fat. Nine cows are now on official test. None other than family help is employed on the ranch.

E. Avery Newton announces October 27 as the date for holding a public sale of pure bred Durocs, Hampshires and Poland Chinas at Arenal Ranch near Lankershim. At this ranch have been raised 100 March and April pigs, out of high class registered dams and got by leading sires of these breeds. Such a sale offering should blaze the way for a larger and keener interest in good hogs.

Members of the Glenn County Duroc-Jersey Breeders Association are making plans for a sale of bred sows and gilts to be held early next spring.

Mrs. E. A. Hardy, manager of the Anchorage Farm herd of Berkshires, has announced the purchase of a new boar, a littermate to the popular Eastern boar, Real Type. This new addition to the Anchorage Farm herd is said to be one of the largest boars of the breed owned in California.

Dr. E. J. Weldon, veteran Holstein breeder of Sacramento, has leased his entire herd to George Inderkum of Sacramento. Under the terms of the lease the cattle will be handled by the lessee for five years. Thirty head of females and one herd bull were included in the transaction.

Karl Fourness of Yolo County has purchased from Dr. E. J. Weldon of Sacramento a young Holstein bull sired by King Sadie Vale Elzevere and a daughter of Prince Gelsche Walker.

The University of California has just completed the first unit of a large modern steer feeding plant at the university farm, Davis. The plant has a capacity of 100 head of steers. It is the intention of the animal husbandry division to conduct cattle feeding trials on a rather extensive scale. To date very little work along that line has been carried on in this state, but changing conditions are developing a real need.

California livestock interests will be interested to learn that, owing to the increased volume of business, the California Breeders Sales and Pedigree Company of Sacramento has found it necessary to add the services of an experienced office manager and has been fortunate in securing A. D. Milligan for that work. Mr. Milligan has been editor of the Western Breeder, formerly The Rural Spirit, Portland, for the last seven years. Prior to that work Milligan was associated with Dean Carlyle of the Colorado college of agriculture and later with the Idaho agricultural college. Few men in the West have a wider experience or acquaintance with livestock activities and breeders than Milligan and it is expected that he will bring to this successful selling organization a fund of knowledge that will result in increased efficiency.

The success of the California Breeders Sales and Pedigree Company has been notable and has attracted the attention of the leading breeders

Grand Champion Hampshires



At our Llano Vista Ranch are found the leading families of the popular Hampshires: Gen. Tipton, Sioux Queen, Lookout Cherokee, and Director. Can supply foundation stuff in early spring pigs, sows with litters, bred sows, open gilts and young boars. Call at ranch any day or address

F. A. Langdon, Mgr.
Perris, Cal.

O.U.R. Hampshire Swine Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

F. C. Fairbanks Ranch Hampshires

The Grand Champion Boar HARVEY'S CHOICE 53147
at head of our great herd of brood sows.

HARVEY'S CHOICE { **LOOKOUT CHEROKEE**
Grand Champion Boar { Grand Champion at Liberty Fair
at Los Angeles 1919 { **SIOUX QUEEN**
Grand Champion at P.P.I.E.

18 High Class Brood Sows in herd—young stock for sale.

A. E. Harvey, Manager Redlands, Cal.

A-1 Duroc Ranch

Where one of the state's greatest herds of Duroc-Jerseys is maintained. For years our Durocs have proven profitable to farmer and breeder alike. Better place your order now for spring pigs as what we will be able to spare will go quickly. Remember, this is the home of the state's highest priced (\$1500) and most valuable Duroc-Jersey sow.

J. P. Walker, RFD 1, Box 40½, Visalia, Cal.

FANNIE'S ORION KING

heads our select string of Duroc brood sows. At the recent Los Angeles County sales we personally selected two high class yearling sows (Pathfinder and Great Sensation blood direct), mated for September litters to the Winsor Ranch big-type boars. They find good company at our ranch.

C. C. ELLIS EXETER, CAL.

Sows and Gilts---GET ONE

Bred to farrow next two months. We are making an extremely low price on these to reduce our herd. At the price we won't keep them long. Write today. Quick, before they are all gone.

H. P. Slocum, Willows, Cal.

Italian Vineyard Company Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

BIG PUBLIC SALE OF BERKSHIRE SOWS AUGUST 14TH

Alex. Wilson, Supt., Guasti, Cal.



Our herd consists of the best blood line obtainable in U. S. Among our junior yearling sows we have Lady Premier 220-222. These sows are Mr. Gentry's famous line of breeding; and fine individuals too; they are smooth, large, big boned animals.

Pay us a visit and see our young stock at reasonable prices.

Castleview Ranch Berkshires

The Home of ACHIEVER the Boar and Enhancer, the Other Boar

A few choice boar pigs for sale sired by the above boars. A few choice bred sows for sale at reasonable prices.

Castleview Ranch Santa Rosa, Cal.



REMEDIES FOR

Cow Cleaning,
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Scouring Calves,
Hog Cholera

An Insect Destroyer
A Poultry Food

LAMBERT STOCK
REMEDIES COMPANY

A. M. Bibens, H. V. Bridgeford,
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Factory: Modesto, Cal.

Mail Orders Promptly Filled

The Leading
Live Stock
Auctioneers

Col. Ben A. Rhoades
Harold B. Rhoades

Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

Rhoades & Rhoades

1501-3-5 South Main St.
Los Angeles, Calif.

HAMPSHIRE SWINE

Pure Breds—Both Sexes

—FOR SALE—

Fairview Ranch

L. L. Beal, Proprietor Red Bluff, Cal.

The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

Sterilize Your Milking Machine

The **B-K** Way

Here Are the Reasons Why It Pays:

1. B-K is always ready. Just add water and use—no time lost—no fussing.
2. B-K is accurate—has the definite strength and other qualities which insure accuracy and avoid costly mistakes.
3. B-K is dependable—insures protection of your stock and product.
4. B-K is a powerful destroyer of disease germs—dissolves and annihilates them.
5. B-K has a dissolving action on casein and other milk solids—prevents adhesion to cups, tubes and utensils.
6. B-K makes no sediment—no accumulation on equipment—nothing to throw away—no waste. Saves rinsing and washing tubes and cups before use. Just shake them when taking from dilution, and use.
7. B-K is a powerful deodorant and leaves no odor of its own.
8. B-K costs very little to use. It is highly concentrated—the dilution for two single milker units costs only about 2c per day. The labor saved alone is many times that amount.
9. B-K prolongs life of rubber—keeps it free of grease—does not injure metal parts.
10. B-K contains no poison, acid or oil—is harmless to use anywhere without danger to people or animals—is fool proof.
11. B-K is a powerful weapon to protect your herd and men from infections and your milk and utensils from contamination, and it's all in one bottle—always ready. Keeps udders and teats smooth, soft and free of warts and sores—helps prevent garget, cow-pox, abortion, calf diseases—purifies and heals workmen's hands.
12. B-K saves labor, time and wages—increases net earnings.

B-K is sold in one gallon and five gallon jugs at hardware and implement dealers, milking machine agents and druggists everywhere. Order through us if no dealer in your town. We will supply you through the nearest distributor or from San Francisco stock.

GENERAL LABORATORIES

742 Market Street San Francisco
Factory & General Offices, Madison, Wis.



Our big young daughters of the old champion Supercia run like peas in the pod—like begets like. They are the typical big prospective mothers—will farrow September and October litters got by our big boar, Fortuna Bob. Write, or come and see them.

W. H. ROUGH, Arlington, Cal.

For easy feeding, early maturing Poland Chinas,

The Get of Model Big Fellow

The Reserve Grand Champion of the last state fair, the strongest Poland show ever held in the state, are the kind to buy. Your correspondence solicited.

J. F. McSwain

Merced, Cal.

BERMA RANCH

Size and quality predominate in our big type Poland Chinas. No better big type sows are found in the state. Buy Berma Poland Chinas and you buy wisely.

C. E. DACK

R. H. Box 196

Fresno, Cal.

BERNSTEIN'S RANCH

Home of King's Big Ben, where he is siring those early developing big type Poland Chinas that are ready for the market at 6 mo. They have size, bone, quality and are from the easy feeding families.

W. Bernstein

Hanford, Cal.

American

Steel Pipe & Tank Company

WELL CASING

RIVETED WATER PIPE

SURFACE IRRIGATING PIPE

CORRUGATED AND PLAIN GALVANIZED TANKS

Main Office

354-P.E. Bldg. LOS ANGELES

Branch at Fresno

throughout the United States. The plan of operation has been such as to lift the auction method of disposing of livestock to a very high level and has offered clients a degree of service that is not available in any other state. At the same time the cost of selling livestock has been held to an unusually low basis.

Graham & Henshaw, Lancaster, reports the recent sale of a pair of fine Durocs as foundation breeding stock to D. W. Sexton at Freeman-on-the-Aqueduct.

Professor E. L. Westover of the Oregon agricultural college is the first Guernsey field representative to be appointed by the American Guernsey Cattle Club, in accordance with the plans outlined at the annual meeting of the club last May. Professor Westover's territory will be in the Rocky Mountain and Pacific Coast states, but he will lay special emphasis on Guernsey development in the Pacific Northwest territory.

JANE GARDEN HOLSTEINS TO NEW HERD

In our issue of June 19 we reported the sale of a year old son of Sir Aaggie De Kol Acme from the Jane Garden Farm, Sacramento, to E. B. Connolly of Willows. Since that sale the same buyer has secured a number of top females from the Jane Garden Farm herd. The recent purchases include the following individuals: Heilo Pontiac, a junior three year old with a record of 28.18 pounds butter in seven days and a 30 day record of 110.2. Her seven day milk production of 727.6 pounds is the second highest in the state for her age; her full sister in blood, Bessie Parthenia Fern Pontiac, a 15 pound junior two year old; Walker Segis Inka, a 23 pound junior three year old, now in her seventh month on semi-official test and carrying the service of Sir Aaggie De Kol Acme; Molly Kuperus Alcartra, a half sister to Tilly Arcatra, with 686.6 pounds butter from 16,521 pounds milk to her credit as a three year old, and also in calf to Sir Aaggie De Kol Acme; Bertha De Kol of Linwood, with a seven day record of 24.18 pounds butter from 693.7 pounds milk. This last named cow is on semi-official test and on July 1 had produced over 8,800 pounds of milk in 104 days. She is also bred to Sir Aaggie De Kol Acme. In addition to the above cows Mr. Connolly selected Korndyke Rosamond, a 20.79 pound granddaughter of Pontiac Korndyke; the 23.4 pound Ruda Belle Korndyke; Ontario Betty De Kol, a 19.55 pound sister to the 33.08 pound Ontario Blonde Pietje, and her heifer calf; Sadie Betty De Kol, a two year old daughter of the above cow; Sadie Mutual Lass, with a seven day production of 15.25 pounds at 19 months and a heifer calf from Ontario Betty Pietje. Three of the last named cows carry the service of King Korndyke Pontiac, grandsire of the \$41,000 King Korndyke Pontiac Acme.

With such a foundation to build on and a determination to own one of the top herds of the West, the activities of Mr. Connolly and his manager, R. W. French, will be watched with interest.

BERKSHIRES SELL

By T. J. Hitte

Under the management of Bruce S. Bennett, field secretary of the Western Berkshire Congress, a successful public sale of 19 head of registered sows and gilts was made at the D. J. Bastanchury Ranch at La Habra, August 14. This sale was made by members of the Southwestern Berkshire Congress, of which Alex. M. Wilson, Guasti, is president, and C. J. Zinn, Inglewood, secretary.

The avowed object of this sale being to distribute first class foundation stock throughout this virgin territory for high class Berkshires, the result is looked upon as quite satisfactory to the promoters of the venture.

A general average of \$140 was made on the entire lot, with an even dozen names on the buying list, and 50 per cent of these beginners. The top price, \$500, was paid by Inglewood High School for the senior yearling sow Rival's Matchless Lady, consigned by Italian Vineyard Company, with the reservation that she be shown in the coming fair circuit by the con-

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Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Pufts and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diphtheria. Removes Bunches from Horses or Cattle.

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Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address The Lawrence-Williams Co., Cleveland, O.

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Register of Merit Jerseys

Senior herd sire Altama Interest, sire of 12 cows in Register of Merit. Junior herd sire Jap's Perfection Owl, a line bred Spermfield Owl bull.

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signors. A fine sale attraction was likewise seen in the junior yearling sow Royal Matchless Lady, consigned by John Donaldson of Perris. She won junior championship at the National Swine Show last year and is

Ames Duchess, Mrs. W. J. Heger, Anaheim, \$50.
Royal Matchless Lady 6th, Inglewood High School, Inglewood, \$500.
Longfellow Duchess 50th, W. T. McAllister, Artesia, \$85.
Rival's Jewel 19th, W. N. Silva, Fullerton, \$85.



At the Bastanchury Sale

now retained at the Bastanchury Ranch at the bargain counter price of \$260.

Below is detailed list of prices as caught under the hammer of Col. Ben A. Rhoades:

Castleview Majestic Belle 5th, F. W. Hall, Downey, \$80.
Rival's Lady Duchess, Italian Vineyard Co., Guastl, \$75.
Castleview Lady 3d, Chas M. Talmadge, Salem, Oregon, \$155.
Twin Oaks Star 2d, D. C. Bunn, Prosser, Washington, \$75.
Royal Matchless Lady, Bastanchury Ranch, La Habra, \$260.
Royal Matchless Princess, W. F. Sandercock, Sacramento, \$125.
Lassie Rose 6th, D. C. Bunn, \$105.
Star Oaks, Chas M. Talmadge, \$120.
Superior California Lady 6th, Italian Vineyard Co., \$90.
Polly's Queen 2d, Mrs. Elsie F. Haight, Fullerton, \$50.

Princess May 12th, Italian Vineyard Co., \$320.
Successor's Princess 27th, D. C. Bunn.

BUTTE CITY SALE LACKED LOCAL BUYERS

The third annual sale held at the Butte City Ranch, August 11, drew one of the largest crowds yet to attend this annual event. However, most of the visitors were visitors in fact and not buyers.

The sale was opened with the catalogued Berkshires. The offering was not extensive and was quickly absorbed, and considering the age of the pigs, mostly young stuff, the prices were fairly satisfactory. W. M. Carruthers of Live Oak was the heav-

Grant A. Brown, El Monte, writes: "Our young Jersey show bull, Financial Eugene, was sold through first appearance of 'ad' in your paper to A. C. Whiting, Ramona."

iest buyer, securing six head. Other buyers included Ernest Eibe, Glenn; W. W. Foster, Butte City; E. H. Grubb, Butte City; H. Matson, Butte City; C. E. Studebaker, Elk Creek, and O. B. Winn, Butte City. The top price was \$53.

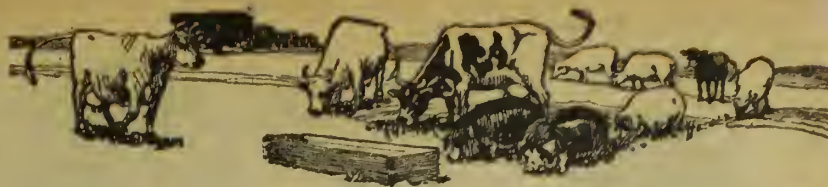
A most excellent lot of Shropshires was offered and the demand for them was very encouraging. Mrs. W. M. Carruthers secured the top lot of yearling ewes at \$55 per head. The following buyers took the sheep: W. H. Morris, Hamilton City; W. W. Foster, Butte City; L. A. Nichols, Butte City; O. L. Raper, Glenn; J. C. Chadburne, Suisun; F. W. Sandercock, Sacramento; L. Kirch, Santa Rosa; Superior California Farm Lands Co., Willows; J. J. Shelloe, Glenn; Richard Powell, Live Oak; A. E. Slocum, Willows.

The disappointment of the sale was the lack of appreciation shown for the Shorthorn cattle. Owing to the shortage of feed the local buyers were not disposed to bid on the cattle, and the lack of this local support was such that the outside buyers soon secured their limits.

A most active demand developed for the Shetland ponies and the offering was taken at satisfactory prices. J. Francis O'Connor of Santa Rosa took the top pony, Lotta D., for the Sonoma County Fair Association, and also secured a mare and colt for the same buyers. Mrs. Carruthers; T. C. Sheppard, Gridley; W. C. Saxto, Glenn; James Day, Fall River; C. E. Green, Woodland, and Frank B. Anderson, Sacramento, were other pony buyers.

While the sale was hardly up to expectations it served to distribute a useful lot of livestock that will prove profitable investments to the purchasers.

The sale was under the management of the California Breeders Sales and Pedigree Company. Ben A. Rhoades of Los Angeles was the auctioneer and was assisted in the ring by Geo. W. Bell of Tulare.



Do you feed ten head of stock?

If you feed ten head of stock you are paying for a silo whether you build one or not. Authorities everywhere agree on this point.

"At the present price of hay," says E. L. Westover, Oregon Agricultural College Silo expert, "any silo will pay good interest on its investment to anyone who is feeding ten or more animals."

Indiana Silos Earn Their Way

The University of California Dairy Herd improved 10% in butterfat tests on silage rations. Oscar Holden, Turlock, Cal., writes, "I consider that any good silo will pay for itself every year. I expect to build another Indiana." Can you afford to go without a silo and still pay for one?

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Correspondence solicited; also invite inspection at the ranch.

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The utmost power value

Pure throughout, dependable always, Red Crown gasoline gives the utmost power-value. It is made to meet the requirements of your engine. Look for the "Red Crown" sign before you fill.

STANDARD OIL COMPANY.
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The Gasoline of Quality

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FEED FOR SWINE,
STOCK AND POULTRY

ASK YOUR DEALER

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

THE POULTRYMAN'S PROFIT

(Continued from Page 213.)

ness people count. A merchant whose wife stands behind the counter and whose son delivers parcels certainly counts their labor when he balances the year's accounts. Why should the poultryman be more willing to give away the labor of his family without adequate return?

The Price of Eggs

The cost of a dozen eggs fluctuates from month to month according to the proportion of the flock that is laying. Hens must eat whether they lay or not, and the more eggs they lay the less a dozen eggs costs. Last December a dozen eggs cost 69.41 cents and sold for 68.28 cents. This was about the time housewives all over the country began boycotting eggs and accusing poultrymen of being conscienceless profiteers. In November the case was worse for eggs cost \$1.18 and sold for 75 cents. From September to January the cost of a dozen eggs was greater than the price received. In January things took a turn for the better and the producer made three cents a dozen. In April it had increased to 13 cents. Now (June) the profit should be about the same, but in July it will drop, and by August it will not be over five cents a dozen. After that time there will be no profit at all, unless better prices prevail than prevailed last fall.

Mr. Brooks Explains

Because there has been considerable uneasiness among poultry people over the lower prices received for eggs the past winter and spring, I went down to the Poultry Producers in Los Angeles to ask Mr. Brooks, the secretary, what he thought about it.

"It is just a question of supply and demand," insisted Mr. Brooks. "There has been a marked increase in production all over California—20 per cent in the North, it is said, and nearly 25 per cent here in the South. This is due partly to the demand for increased food production from many sources and the patriotic response to it. The world is on the verge of starvation and we must produce something. Of course the unusually good prices received for eggs last year have something to do with this increase. There are more inexperienced poultrymen in the business than we have ever seen before.

"Naturally some producers have feared overproduction, but there is absolutely no such danger so long as we can find a market for the surplus. It is the business of the Poultry Producers to find a market for this increasing supply of eggs and so far we have had no trouble in finding it. In April and May there was such a brisk demand for eggs from New York that we did not begin to store till April. By that time Eastern hens, which had been held back from producing by the extremely cold winter, had begun to lay, demand fell off, and we have been storing nearly all that came in since April first.

"While it is true that eggs have gone into storage at a somewhat lower figure than last year, the published figures do not quite tell the truth, as far as members of the organization are concerned, for we were able to secure a little better prices a part of the time. When eggs were going into storage at six cents a dozen less than last year we were turning back two cents of the six to our producers. The first week in May last year eggs went into storage at 48.16 cents. This year for the same week they brought 43.66 cents, but our producers were actually receiving from the pool 45.02 cents. In March we paid as high as four cents above the market."

Outlook Must Be World Wide

The volume of business done this year by the Poultry Producers is shown by the following figures comparing the output with that of last year: April 22, 1919, there were received 79,000 dozen eggs; April 22, 1920, 128,000 dozen; April 29, 1919, 80,000 dozen; April 29, 1920, 124,000 dozen; May 6, 1919, 78,000 dozen; May 6, 1920, 125,000 dozen.

If we were forced to find a market for all these eggs at home we might be uneasy about the outcome, but the whole world is calling for food. We have only to make it plain that the food value of a five cent egg is greater than that of five cents worth of meat

or cereal, and California eggs will find their way to every corner of the globe. Other foods have been advertised. The poultryman alone has stood back and let the public take or leave his product as it pleased. A big advertising campaign is in contemplation which shall let the public know what eggs are worth. The Middle West is falling behind, it is said, in egg production. Now is the time for the California poultryman to boost his product by getting into the band wagon with all the rest of the producers. United we stand—for better markets, better prices, greater consumption.

Wanted—Better Hens

The figures quoted from Mr. Cornell's chart make it quite plain that what the poultry industry needs is not fewer people in it, but better hens and more careful management. The net gain per hen in 1918 was 78.66 cents. To make a living at this rate a man would need to keep at least 2,000 hens. In 1919, that exceptionally good year, the net gain because of higher prices reached \$1.07, the "dollar a hen" basis that we figured on ten years ago. This year, judging from the figures for the first four months, it will be around 81 cents. On the ten demonstration farms in Los Angeles County the "labor income per hen," which is apparently the same as the "net gain per hen" on the chart, was \$2.45 in 1919. What makes the difference? Isn't it just the difference between the 120 eggs per hen assumed on the chart as the average yield and the 148 eggs actually laid by the hens on the demonstration farms? Twenty-eight eggs at the average price of 54 cents a dozen would add \$1.26 to the \$1.07 of the chart. Isn't it time those ten dozen egg hens went to market and let the 12 dozen egg hens take their places? Better breeding will do it. Closer culling will do it. If the thing is hard it is all the more worth while. Let us not be defeated by a little matter of two dozen eggs.

Poultry Queries

Conducted by J. A. Koethen

California Trapnest

Could you describe or give me a diagram of a trapnest for my laying hens? I have 60 R. I. Red pullets and want to find my best layers.—Subscriber, Shively.

The California trapnest, of which description and diagrams may be had by writing Agricultural Experiment Station, University of California, Berkeley, for Circular 142, is quite generally used by poultrymen in this part of the state, and its simplicity commends it to all. It consists of a simple box nest with a trapdoor in front which is hinged at the top. To set the nest the door is swung inward and held at the bottom by a wire hook at just the right height so that when a hen enters and walks under the door her back will raise the door and release the hook, thus allowing the door to swing quietly shut behind her. As the door swings shut against the outside door stop (a three-inch straight screw hook) the inside door stop (a bent piece of No. 6 wire) drops down and locks it from the inside. Working plans for this nest are given in Circular 142, which costs only a postal card.

A Laying Mash

Please give formula for good laying mash, also advise amount to feed per day to 30 pullets. We feed a 90 pound sack of scratch in a month, and our only mash is bran moistened with Lactin. We also feed our own table scraps and those from the tables of

FOR GREATER EGG PRODUCTION
FEED—COULSON'S EGG FOOD
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Coulson & Co.
PETALUMA, CAL.

three neighbors. Is alfalfa meal good and is it green feed?—Mrs. S., Madera.

A good homo mixed mash consists of 4 parts bran (by measure), 2 parts middlings, ground barley or oats, 1 part alfalfa meal and 1 part beef scrap. For Leghorns, except in the hottest weather, add 1 part corn meal (feed meal). Instead of 1 part beef scrap, you might substitute ½ part beef scrap and ½ part soy bean meal. I like alfalfa meal because it adds bulk and contains considerable protein. While it is not green feed I believe it helps to take its place when greens are scarce. The ground barley may be omitted if desired. Ground oats are so difficult to obtain now, except the oat chop, which is mostly hull, that it is hardly worth while recommending them.

No one can say just how much a hen should be allowed per day, but most hens eat around 90 pounds in a year, which should be half mash and half scratch. The laying mash should be kept in hoppers where it is always accessible, and the scratch is fed at night. One of the best feeders I have met says he feeds ¾ of his scratch an hour before sunset and the other ¼ just before the hens get onto the roosts, and feeds enough so that there will be a little left over for early morning. Some nights the hens will eat more and some less, according to the amount of table scraps they have had during the day.

NATIONAL EGG LAYING CONTEST

By T. W. Noland

The 300 contest hens, poultry experiment station, Mountain Grove, Missouri, laid 5,036 eggs during July, or an average of 16.78 eggs per bird. Pen S. C. White Leghorns owned by Willanna Farm, Elizabeth, N. J., won the cup for July by laying 119 eggs during the month.

Ten Leading Pens for July

S. C. White Leghorns, New Jersey, 119 eggs; S. C. White Leghorns, Missouri, 111; White Rocks, Idaho, 111; R. C. Brown Leghorns, Kansas, 110; R. I. Whites, Missouri, 110; Anconas, Missouri, 108; S. C. Reds, Missouri, 108; Anconas, Missouri, 104; S. C. White Leghorns, Illinois, 104; S. C. White Leghorns, Missouri, 103; S. C. White Leghorns, Missouri, 103.

Ten Leading Pens to Date

Barred Rocks, New York, 968 eggs; White Wyandottes, Missouri, 939; S. C. White Leghorns, England, 934; S. C. Reds, Missouri, 929; S. C. Reds, Missouri, 921; S. C. Reds, Alabama, 912; S. C. White Leghorns, New Jersey, 898; Barred Rocks, Canada, 896; Columbian Rocks, Missouri, 889; S. C. White Leghorns, Missouri, 883; S. C. White Leghorns, Missouri, 883; R. I. Whites, Missouri, 883.

Five Leading Individuals to Date

S. C. Red, Missouri, 234 eggs; Barred Rock, New York, 224; White Rock, Idaho, 209; S. C. Red, Alabama, 207; White Wyandotte, Missouri, 206.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, August 2, 1920. Report for week ending July 30, 1920:

A comparison of egg yields during the first nine months of the current contest at Storrs, with the production for the corresponding period last year, clearly demonstrates the value of good poultry management. A year ago the supervisor of the contest was under the necessity of engaging a new man on the average of every three weeks. The experienced poultryman understands full well that this is not time enough for a man to even get acquainted with the hens he is taking care of. Such rapid fire changes militate against good egg production. During the laying contest last year there were actually employed five superintendents and 17 different men worked under them. There was no way to avoid engaging so many men; nevertheless, this was poor poultry management. The net result was double the usual mortality among the

hens, a loss of nearly 15,000 eggs during the year and a lot of ill will from breeders who participated in the contest. In the current competition these adverse factors have been largely eliminated. At the end of the first nine months the mortality among the hens has been below the average, the egg production is above the five year average and 14,000 eggs ahead of last year. The contestants are all pleased with the prospects of a banner year.

In the thirty-ninth week the light and heavy breeds divided the honors equally. Oneck Farm's pen of Barred Rocks from Westhampton Beach, L. I., nosed into first place with a score of 54 eggs. Hollywood Farm's pen of Leghorns from Hollywood, Washington, was a close second with a yield of 53 eggs.

The three leading pens in each of the principal varieties are as follows: Plymouth Rocks

Jules F. Francais (Barred), 1,663; Oneck Farm (Barred), 1,639; Merritt M. Clark (Barred), 1,512.

White Wlandottes

Mrs. R. W. Stevens. 1,408; Patrick

F. Sullivan, 1,371; Harry D. Emmons, 1,357.

Rhode Island Reds

Pinecrest Orchards, 1,656; Deer Brook Poultry Farm, 1,475; Jacob E. Jansen, 1,448.

White Leghorns

E. A. Ballard, 1,592; Richard Allen, 1,558; George Phillips, 1,528.

Miscellaneous

A. E. Hampton (Black Leghorns), 1,541; A. L. Anderson (R. I. Whites), 1,483; H. P. Cloyes (Buff Wyandottes), 1,364.

JOHNSON GRASS KILLS GEESE

It was reported to Farm Adviser Amundsen of Placer County that several geese had died suddenly. Upon investigation of the food used the farm adviser stated that Johnson grass was probably the cause as it contains Prussic acid. It was suggested that an experiment be tried, feeding geese small and large quantities, and it was

found that if penned in a patch of Johnson grass young goslings were easily affected and soon died.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST, SANTA CRUZ

By Max Kortum

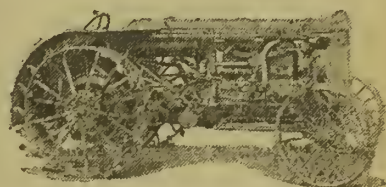
R. C. Gibson of Newhall stepped into second place during the week.

The four highest pens stand as follows: Walls, 1,671 eggs; Gibson, 1,621; Enterprise, 1,615; B. F. Rose, Santa Cruz, 1,615.

High pens for the past week were as follows: Neef, 46 eggs; Barker, 46; Gibson, 45; Bellows, 44; Schlink, 40; Rose, 38; Gibson, 37; Clark, 37; Stalling, 36.

The management of the Southern California Fair announce that they have succeeded in securing E. I. Hammond as superintendent of the poultry department for the coming fair.

Farm Machinery for your every need



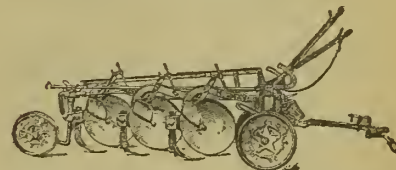
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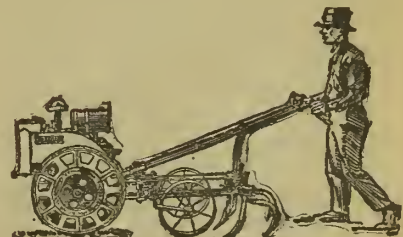
ALLIS-CHALMERS 6-12

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McKAY PLOW AND SUB-SOILER

An efficient power lift disc plow and sub-soiler making possible plowing and sub-soiling in one operation.



THE BEEMAN TRACTOR

In plowing or cultivating, does the work of one horse.

THE success of the farmer—like the success of every business man—depends upon his buying the right tools, the right materials, etc. for his own work.

We consider it a part of our service to go into the markets of the world and to secure the very best equipment available for the modern farmer working under California conditions.

Tractors

In the two models of ALLIS-CHALMERS TRACTORS—the 6-12 and the 18-30, and in the BEEMAN TRACTOR—you can buy just the tractor that will exactly fit the work to be done.

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Not only do we handle the usual line of plows, cultivators, etc. but in addition carry such implements as the McKAY, combined power lift disc plow and sub-soiler, etc.

Sprayers

Spraying equipment is necessary to every orchardist. To supply you with the best available—we carry the HARDIE. Make known your requirements.

Implements

No matter what your needs in farm implements and equipment—make them known to us and we'll take care of you. Our experts will gladly advise with you—and refer you to your local dealer handling these lines where possible.

You'll see us at the STATE FAIR—but in the meantime write us about your requirements.

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POULTRY

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We have the following varieties of thoroughbred chicks every week: Anconas, Barred Rocks and R. I. Reds, \$20.00 hundred. Extra fancy dark R. I. Reds and White Rocks at \$25.00 a hundred. White Leghorns \$17.50. We guarantee safe delivery. Every one a strong, healthy chick. **ORANGE COUNTY HATCHERY**, 403 E. Santa Clara, Santa Ana, California.

S. C. White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Now booking orders for this Fall and next Spring delivery. Prices and terms gladly sent on request. Hatchers and shippers of Baby Chicks since 1898. **MUST HATCH INCUBATOR COMPANY**, 433 Seventh Street, Petaluma, California.

Santa Cruz Chicks are in demand. Our hatchery will run full blast this fall, supplying Leghorns, Minorcas, Anconas, Rocks, Reds and Orpingtons. Write for folder with price list. We also offer Hydes W. L. Cockerels from Pen 1, with trapnest record 236-284. B. W. Archibald, Soquel, Santa Cruz County, Calif.

Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. L. W. Clark, 615 Main Street, Petaluma, California.

Baby Chicks from my carefully selected purebred flock of S. C. White Leghorns. August, September and October delivery at \$15.00 per 100 chicks. Am booking orders now for next spring. Write for particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

ATASCADERO POULTRY FARMS

ATASCADERO, CALIF.
S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write Henry Miller, Supt.

White Leghorn Baby Chix from heavy laying **HOGANIZED STOCK**. Safe arrival of full count, live, strong chicks guaranteed. Price list and interesting literature on application. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Raise Fall Chicks—We will have them every week. R. I. REDS, BARRED ROCKS, WHITE LEGHORNS. Write for special circular. See why they pay. Stubbs Poultry Ranch and Hatchery, P. O. Box 67, Palo Alto.

Barred Plymouth Rocks—"Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Vodden, Los Gatos, California.

White Leghorns—Chicks, hatching eggs and breeding stock from the home of heavy layers. Fall chicks pay big. Free folder tells why. Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, California.

Single Comb White Leghorn Chicks from our Hoganized and Trapnested stock, 100 or 1000 lots, booking orders September and October deliveries. Forster Brothers, 2918 Otis Street, So. Berkeley, California.

Buff Orpington, Buff Ducks, Bourbon Red Turkeys, White Guineas. The Ferris Ranch, S. Reservoir, Pomona, California.

White Minorca Baby Chicks and Hatching Eggs—Dark Cornish and Silver Campine eggs. Folder, Leech Poultry Yards, Baldwin Park, California.

Thoroughbred Rocks—15 years a breeder, records 210 and better. Mrs. M. A. Warren, 36 Little Delmas Ave., San Jose, Cal. Eggs \$2.50, 15.

Rhode Island Whites—Yearling hens, pullets and cockerels, \$5, \$7.50 and \$10.00 each. M. E. Bemis, Phoenix, Arizona.

Baby Chicks from selected egg type S. C. White Leghorn hens. Tupman Poultry Farm, Box 7-C, Ceres, California.

MISCELLANEOUS

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Save Coal!—Keep out cold! Use waterproof weatherproof weather strips, 12 ft. rolls 50¢, 75 feet \$2.00, sample 10¢; prepaid. Martinek (Dept. 72) Company, 405 Lexington Avenue, New York.

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If You Want to sell or exchange your property write me. John J. Black, 116th St., Chippewa Falls, Wis.

MACHINERY

G. M. C.—SAMSON—G. M. C. For Sale—Samson tractor, late model sand wheels in fine condition, \$650, cash or terms. For information John F. Rock, Carpinteria, California.

For Sale—Used ranch material, windmills, pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for our "Special Bargain" price list. Demmitt Co., Upstairs, 120 N. Main, Los Angeles.

For Sale—Typhoon 50 Ensilage Cutter in good condition, two sets new knives. Price \$250.00. Fred W. Cleland, 12429 Compton Ave., Compton, California.

For Sale—Caledonian Bean Cutter and small thresher. Bargain. Chas. Young, Whittier, California. Phone 7694.

For Sale—6-horsepower Z type Fairbanks Engine, 2445 Prince St., Berkeley, California.

AGRICULTURAL IMPLEMENTS

For Sale—Slightly used Power Corn sheller, 4 hole. Has bagger, self feed, cob carrier. Worth now \$650.00, will take \$290.00. ARNOTT & CO., Inc., Los Angeles.

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UNDER STATE AND FEDERAL SUPERVISION.

Small foundation herds, Heifers and Bulls.

PERFECT IN HEALTH, RIGHT IN TYPE, PRODUCTION AND BREEDING.

Mills Bldg., San Francisco.

FARMS AT

BRENTWOOD AND LOS ALTOS

350 HEALTHY HOLSTEINS.

For Sale—Ayrshire Bull No. 17814, Trilunes Lad of C. H. A. F., born Feb., 1914. Selling him because I need new blood in herd. Farmer's price. For particulars write H. G. Ranch, Solvang, California, or call at ranch to see him.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Registered Shorthorns—Good dual purpose animals raised without pampering. Young stock for sale. Prices reasonable. W. E. Rucker, Willits, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Wileville, California. E. R. Stalder, owner.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Sunshine Farm Jerseys—No females for sale. Bulls from high testing cows for sale. E. E. Greenough, Merced.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

LIVE STOCK

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Next sale at Ranch, Wednesday, August 11, 1920. W. P. Dwyer and W. S. Gullford, Box C. Butte City, Glenn County, California.

Carruthers Farms—Live Oak, California. Shorthorn cattle and Berkshire swine of quality and select breeding.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

For Sale—Team of grade Percheron work horses. For particulars write H. G. Ranch, Solvang, California.

FOR RENT

900 Acres for Lease—A fine tract of bean and barley land between Los Angeles and the ocean for rent on share basis. Two houses and two sets of farm buildings go with property. Inquire CAMPBELL-JORALMON COMPANY, 400 Washington Building, 3rd and Spring, Los Angeles, California. 60373; Broadway 3903.

For Rent—Good paying 100 acre dairy ranch. Abundance of feed, shade, water. Present tenant wishes to sell stock, lease and implements. Box 74, Alpaugh, California.

TREES

For Sale—Placenta Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. Ketscher's Nursery, 1101 E. 4th St., Santa Ana, California. Phone 572WK.

50,000 Florida Sour Orange Seed Bed Trees; 100,000 California Sweet Seedling Seed Bed Trees; Valencia, Eureka Lemons; Supply Co. buds. **SOUTHLAND NURSERIES**, 1941 East Colorado St., Pasadena, Cal. Phone, Colorado 6352.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Fruit Trees—Berry Plants scarce, order now. Cash Nursery, Sebastopol.

SEEDS AND PLANTS

Reliable Cabbage Seeds—I grow them. You want them. Let's get together. Write me for special trial offer on just what you will need. Isaac F. Tillinghast, 40 Poppel Street, Santa Rosa, California.

Pumpkin Seed—Mixed Pumpkin Seed, good germination, 25¢ per lb. Aurora Seed Mill, Stockton, California.

WANTED

Wanted—Carload of wheat straw and also carload of mixed grain, wheat, milo maize, Egyptian corn, white, etc. Must be reasonable in price. Write all particulars to Hohn & Smaus, Los Gatos, California.

Wanted—Position as manager of fruit ranch, 25 years' experience in growing citrus and deciduous fruit. Address: 219 Cypress, Santa Ana, California.

Wanted—Nursery Budder at once. The Cash Nursery, Sebastopol, California.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence, stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 237-241 Court St., Los Angeles.

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ANCHORAGE FARM BERKSHIRES

Orland, California.

BRED GILTS FOR SALE.

We Can Show You the right thing in Berkshires any day in the year. We breed the best strains and have the correct type—the kind that raise good litters of good pigs. Right now some crack young boars from early litters. Call at Lark Meadow Ranch and be convinced. Laurel's Champion, Star Leader and Ames Rival 18th blood at the top. Write Geo. A. Stingle, El Monte, California.

The Only Herd of English Berkshires in the west. Bigger, better, stronger litters. More pounds of meat for less feed. Weanling pig \$35. Satisfaction guaranteed or money refunded at once.

SANDERCOCK LAND COMPANY
703 Market St., San Francisco
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Grape Wild Farm—Berkshires, Guernseys. Big Type Berkshire Boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion, A. B. Humphrey, Prop., Escalon, California.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calaveras, Martinez, California.

Real Good Berkshires, cholera immune. Frank B. Anderson, Box 724, Sacramento, California.

DUROC-JERSEYS

DUROC-JERSEY SWINE

JUMBO SENSATION

Our new herd boar is one of the largest boars in the world for his age. We have some real buys in pure breeds.

WHITLEY

TU-TOCK-A-NU-LA RANCH
Ventura Boulevard and Hazelton Ave.
Mrs. R. E. Whitley, Mgr.
Phone 160-J Van Nuys, Calif.

For Sale—Two good open fall gilts sired by LORD'S ORION CHERRY KING. One open fall gilt sired by PATHFINDER—these are outstanding good gilts and can be bred to either PATHFINDER WONDER or TRAILBLAZER. Also some good sows bred to PATHFINDER WONDER for September farrow. Hamlin Duroc Farm, Box 697, Sacramento, California.

Borge's Big Duroc Jersey Hogs—Herd headed by California Golden Model 3rd. A few choice females of desirable breeding for sale at very low figures. I am offering for sale the tried boar Dos Palos Chief (an Orion Cherry King Jr. boar). Here is an opportunity to secure a tried sire at a very low figure. Satisfaction assured. Write at once. Jack Borge, Dos Palos, California.

Fifty Head of Durocs, bred sows, gilts and pigs. Three boars ready for service. Five March boars, grandsons of Mary Jane Pathfinder. One sow of Orion Cherry Pathfinder out of Lambs Model Lady. Five boars out of Cherry Queen Pathfinder and sired by Lords Orion Cherry King. For information and prices write Elmer Lamb, Ceres, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

Bargains in Bred Sows and Gilts—Pathfinder and Great Wonder I Am blood. Derryfield Farm, Capitol National Bank Bldg., Sacramento, California.

L. & M. Ranch, Van Nuys—Buy our young boars by such sires as May Rose King, Winsor's Giant Orion, Orion's King Gano. Top Sensation 3rd.

Durocs—Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. J. L. Stevenson, Van Nuys, California.

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. Hollow Hill Farm. B. W. Shaper, Manager, Colton.

Winsor Ranch Durocs—Boars and bred gilts of our own and eastern breeding. Write us your needs. Morris C. Allen, Manager, Bonita, California.

December and March Duroc boars; Pathfinder breeding. Sterling Smith, Route 1, San Diego, California.

First Prize Duroc Boar, 2 gilts, one brood sow. Harold Love, Riverbank, California.

For the Best in Durocs write June Acres Stock Farm, Davis, California.

GOVERNMENT LAND

300,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book THE HOMESSEEKER which tells you where this land is and how to acquire it, or send \$2.00 for book direct. The Homeseeker, Dept. M, 336 S. Broadway, Los Angeles, California.

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ROOFING PAPER
One ply \$1.50, 2 ply \$2.00, 3 ply \$2.50 complete with fixtures. Rubber roof paint 50¢ per gallon in 5 gal. lots.

ANGELUS ROOFING & PAPER CO.
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SALESMEN WANTED

Men With Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write J. H. Yetter, 115 North Broadway, Los Angeles.

POLAND-CHINAS

For Sale—I have a small bunch Poland China big type hogs that I want to sell to some breeder, too good to go to butcher. Included 3 fine brood sows, 3 gilts ready to breed, about 20 weaned pigs and fine ones; registered stock. I have sold alfalfa ranch, must vacate this month and will take little above butcher's price if taken soon. The Sunset Rancho, Pacoima, 19th and Pershing Ave. J. Frank Bowen, 23287.

I Would Sell My topnotcher boar by Kings Big Bone Leader; two bred sows by Long Smooth Jumbo; also spring pigs—everything big type stuff. H. Christianston, Arlington. Write me.

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. J. H. Crawshaw, Hanford, California.

The Big-Type Polands direct from Iowa. The best blood lines in the game by the Iowa man. J. L. Dunlap, Pomona, California.

The Grand Champion El Profito heads our big type Poland Chinas. Letters promptly answered. Viola L. Renwick, Santa Barbara, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. Ferguson & McKaig, Orland, California.

HOGS

HAMPSHIRE

PRINCE LANGDON OF EDMOOR
76139 and two bred sows. All farrowed in May, 1919. Bred at Langdon's. The three for \$500.00. M. S. Stough, El Cajon, California.

FARM LANDS FOR SALE

LAND FOR SALE

"Take no one's advice" until you have spent a day or two on our ranch. If you are looking for the ideal, self-supporting home of 5, 10 or 20 acres. One night's rest among the pines will do you a world of good, and to see the fruit and vegetables growing will convince you as to what can be done. If an ideal mountain climate, electricity, pure water for drinking and irrigation, good roads assured, and rich land cheap, will appeal, your visit will be like nine out of ten others who have made it permanent. For further information address

PARADISE RANCHITA
Paradise, California.

Fairview Orange Grove
Only \$6500, Easy Terms.
Beautifully situated close town, overlooking charming lake; 15 acres bearing orange grove, also peaches, plums, kumquats, pecans, etc. high, healthful, well drained; good residence, pure water; widowed owner sacrifices at \$6500, easy terms. Details page 49 Strout's Big Beautifully Illustrated New Catalog Orange Groves and Other Semi-Tropical Farms. Copy free. **STROUT FARM AGENCY**, 503 E. J. Wright-Callender Bldg., Los Angeles, California.

For Sale—Good River Farm of 122 acres suitable for fruit or alfalfa; in fact will grow anything. 25 acres in alfalfa, about 20 acres in corn, 1 acre in young family orchard, 17 acres pasture land and timber, balance farmed to grain. All fenced hog tight. Modern five room bungalow with hot and cold water, bath and toilet. Large barn and tank house, 6,000 gal. tank, good pumping plant for irrigation, near town and high school, one mile from grammar school. For further information address Box M, California Cultivator.

For Sale—300 Acre Farm situated Santa Barbara County. All implements necessary for beans and hay, including bean thresher, Fordson tractor and plow, side delivery rake. Large house and barn, chicken house, bunk house, implement shed and well equipped shop. Soft water, modern system. Apple trees, nuts and various fruits. Owner must sell, ill health. Easy terms. Address Alfred L. Friel, Lompoc, California.

FOR SALE AND EXCHANGE
10-20-40-60 and 80 acre ranches, rich, level, plenty water; proven grape (Thompson seedless), fig and alfalfa land. Price right, easy terms.

FOR SALE
Some of the finest dairies in the state. Chas. McNeely, Alpaugh, California.

ANTELOPE VALLEY
Buy cheap, good alfalfa and fruit land in the easy lift water district near improved dairy and hog ranches. \$50 to \$75 an acre, one-fifth cash. Send for circulars. The R. & L. Ranch, 611 Fay Bldg., Los Angeles.

Owner Will Sell equity in 5½ acres exceptionally good Valencia oranges. Best buy in choice North Whittier Heights district, good crop on trees, \$12,300. Cash required. Box 1206, Puente, California.

For Sale—10 acres of raw river bottom land in Kings County, all under irrigation, well on place. Will sell or trade. Address: Owner, O. C. Hamilton, R. D. B. Box 104, Kingsburg, California.

If Interested in securing farm lands or have same for sale write me. John G. Mee, St. Helena, California.

For Sale—Ranches, Homes, Acres, free list. Willson Bros., Santa Cruz, California.

Irrigated Alfalfa Ranches for sale. Other crops, plenty water. C. I. Graves, Fallon, Nevada.

Best Cheapest orchard berry and range lands. John F. Beckett, Arroyo Grande, California.

Irrigated Farms—Five acres and up. Alex. Murdock, Brentwood, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT. Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

GOATS

For Sale Cheap—Small bunch of goats, including nine does and five kids and two good bucks. Inquire of or write to O. C. Knox, Thermal, California.

RABBITS

New Zealand Reds—Young stock. Reasonable prices. Josephine Spencer, 1916 21st St., Sacramento.

DAHLIA CLUB

Los Angeles has an organization of enthusiastic lovers of the dahlia. They have been organized for many moons, but only recently have issued a club organ, or bulletin. It is known as the "Bulletin of the Dahlia Club of Los Angeles."

The aims of the club are "To unite all parties who feel an interest in dahlia culture, to arrange exhibits and work together in a spirit of helpfulness and cooperation that homes may be made more attractive and beautiful and the glory of our city magnified."

The club is already planning for a dahlia exhibit to be given at the Alexandria Hotel, Los Angeles, September 23 and 24. The premium list contains three separate classes, or a total of over 40 opportunities for winning premiums. The secretary is Elmer C. Webber, Los Angeles.

COTTON SEED HEARING POSTPONED

Director of Agriculture Hecke has been called East to investigate the serious situation affecting the disposal of California pears, and because of his absence from this state has postponed the hearing on cotton seed quarantine which had been called for August 20. Announcement later as to postponed date.

Glenn County farm bureau meetings. Capay, Wednesday, August 18; Grapevine, 25 at 8:15 p. m.; Larkin, 27. The board of directors meets at Willows August 28 at 1:30 p. m. No regular meetings during August in Ord, Jacinto, Willows, Plaza and Elk Creek centers.

RHUBARB---Wagner's Giant Plant Now August is a Good Month to Plant

Growers who planted last July and August have already harvested over 15 tons per acre netting \$1000 eleven months from planting. For further information, write J. B. Wagner, Rhubarb Specialist, 1550 East Villa St., Pasadena, Cal.

NEW RICES MAKE GOOD RECORD

Very favorable reports have been received by the United States department of agriculture from the South regarding the condition of the extensive plantings made this spring of Acadia and Fortuna rice, new varieties developed by the department at the Crowley rice station in Louisiana, in cooperation with the Louisiana agricultural experiment station. These two rices are among the best selected from a study of more than 2,000 different kinds at the Crowley station. Their importance is demonstrated in part by the large yields obtained. Last year under field conditions an average yield of 5,155 pounds of rough rice was obtained from the Acadia on 48 acres and an average of 2,775 pounds of rough rice from the Fortuna on 35 acres of very old land. Both of these records are excellent and give an indication of the large production which may be expected this year on a much larger acreage, if weather conditions continue favorable. Eventually it is the purpose of the department to make these new varieties of seed available to all growers through the markets.

Arrangements have been completed for the big meeting of the California Cattlemen's Association on Cattlemen's Day at the state fair, Sacramento, September 8. With stock growers present from all parts of the state the association expects excellent results from this meeting. A tentative program includes short talks by Governor Wm. D. Stephens, M. D. Lack, G. H. Hecke, Peter J. Shields, Prof. C. W. McCampbell, District Forester Redington, R. L. P. Bigelow, F. H. Bixby, Dr. J. P. Iverson, R. N. Wilson and Dean H. E. Van Norman.

Household Department

THE CONQUEROR

It's easy to laugh when the skies are blue
And the sun is shining bright;
Yes, easy to laugh when your friends are true
And there's happiness in sight;
But when hope has fled and the skies are gray,
And the friends of the past have turned away,
Ah, then, indeed, it's a hero's feat
To conjure a smile in the face of defeat.

It's easy to laugh when the storm is o'er
And your ship is safe in port;
Yes, easy to laugh when you're on the shore,
Secure from the tempest's sport;
But when wild waves wash o'er the storm-swept deck
And your gallant ship is a battered wreck,
Ah, that is the time when it's well worth while
To look in the face of defeat with a smile.

It's easy to laugh when the battle's fought
And you know that the victory's won;
Yes, easy to laugh when the prize you sought
Is yours when the race is run;
But here's to the man who can laugh when the blast
Of adversity blows; he will conquer at last,
For the hardest man in the world to beat
Is the man who can laugh in the face of defeat.

—Emil Carl Aurin in National Magazine.

MISS PHOEBE'S HOLLYHOCK GARDEN



SPRING is surely here!" the women in their windows would exclaim as they watched Miss Phoebe Malcombe with her basket of pussywillows pass by their houses up the hill to the Longfellow High School. Or, "Autumn has come again, for there goes Miss Phoebe with her milkweed pods and asters!" They could say this because for 20 years Miss Phoebe had been going past their windows with her seasonable basket.

Twenty years, up on the third floor of the Longfellow, Miss Phoebe had taught the drawing classes. Her hair was quite gray now and her eyes, which were two of the kindest eyes in the world, looked often tired and there were patient lines about her mouth. But there were people who could remember Miss Phoebe when her hair had been a snappy black and her cheeks as pink and fresh as the hollyhocks in her own garden.

That was the time when Miss Phoebe had been but 21 and just home from art school. It was said that Miss Phoebe had won a gold medal and that an editor down in New York, who had seen her pictures, had offered her a place on his magazine.

"I reckon," old Jim Wilson, the postmaster, had said to Miss Phoebe one morning when he had handed her an important looking letter with a New York postmark; "I reckon now with this fine position you're going to be getting and the money you'll be making, you'll never let your ma take in any more sewing. You'll be able to give her a rest now, Miss Phoebe, such as she ain't seen since your father died and you was a baby."

And then when all Lakeview had given Miss Phoebe a farewell party on the very eve of her going, something happened, something so unforeseen, so piteously overwhelming as to postpone Miss Phoebe's New York adventure for 20 years and to change the course of her life. Mrs. Malcombe suffered a stroke of paralysis that for weeks threatened her life and finally left her helplessly crippled.

At first Miss Phoebe had hopes for her mother's recovery. She bravely accepted the modest art position in the village high school, engaged a girl to stay with her mother the hours she was obliged to be absent, and waited cheerfully and patiently. One of the sweet things about Miss Phoebe was her cheery patience. It perhaps was what had given her face its soft and lovely quality.

Years passed. Old Mrs. Malcombe sat in her chair quite comfortable but helpless, slowly fading away like the fading of a flower. If there had ever been a time when Miss Phoebe had resented the fate that kept her from realizing her career she had carefully concealed it from her mother. A great love existed between them. "I'll never leave you, Mother," Miss Phoebe had often whispered to her. "No, not for all the glories of the world."

Two years after Mrs. Malcombe's

death, the daughter went steadily on with her teaching. She had become a fixture with the school, as much so as the flagstaff on top of the building or the clock in the lower hall. Then one day the village was electrified with the news that Miss Phoebe had resigned and was going to New York to have a studio. "To have a studio!" repeated the amazed Lakeview. "But was Miss Phoebe, the village drawing teacher, clever enough to draw pictures for magazines and actually sell them?" Then Lakeview experienced an awakening, for Miss Phoebe, for the second time, had proved that she was. She had, the past year, on the margin of her time, made and sold several pictures. Their excellence was attested by the fact that again had come to her an offer to come to New York.

The day before her departure she sat beside a box packing her pictures. Suddenly, she came to one over which she lingered and fondled almost as if it had been a baby. It was the picture of a little yellow haired boy with brown, bare feet standing against a great mass of pink and scarlet hollyhocks. It was entitled, "In a Garden."

"The Dear!" whispered Miss Phoebe and her lips twitched a little. "How I shall miss him!" The boy who had posed for the picture was David, a little elf of a fellow who played in her garden and made trains of cars out of her books on the floor of her studio. She covered the picture at last and carefully placing it in the box, was preparing to tack down the cover when the door bell rang. "A telegram," gasped Miss Phoebe, "or callers." But it was not callers—just the boy with the Post. She found her pocketbook and paid him.

"Don't bring it next week, Willie. I'm going away to New York."

"You're alright, Miss Phoebe, I say!" grinned Willie, keeping the change as she closed his fingers over it. "And some day I bet Lakeview will find one of your pictures on the Post's cover."

The picture on the Post's cover of a little boy against a background of hollyhocks was so nearly like her own conception that she could scarcely believe her eyes. With beating heart she read the signature, Marcia Allen McNair. "Her picture!" gasped Miss Phoebe, "Hers!" She's got the start on me again, even to being first with my idea.

She had spoken the words aloud. Laddie, a very old Scotch Collie, got up slowly from his nap and came up and laid his great head understandingly on her lap.

"It hurts, Laddie, that I never could have had my chance. Marcia and I were to have gone away together, Laddie, but something happened to make me stay. She went on to a big success. And I've often wondered if something had kept her from going and I could have gone on, wouldn't I have made as big a success? I love to think so, Laddie! And Laddie, that isn't her real name any more than mine is Narcissus Celeste. Her name is just plain Mary McNair and she's from Lockport, Illinois, and we went to the Art Institute together, roomed together 20 years ago. But that isn't all, Laddie. There was in school a teacher, old Vandy, we used to call him. He taught the life class. He used to watch her pictures and mine in the making and once he said, 'Miss Mary, she has talent—much, but Miss Phoebe has more; she has genius.' That's the word, Laddie, the magic word, and I've liked to think all these years that perhaps he knew. It makes it easier to have the courage to start again!"

She picked up the picture again and examined it with greater interest. She even held it up before the old dog's eyes. "Look, Laddie, isn't it clever?" Mary was always so clever and pretty too! They say now that she is cold and haughty. That she has a great house with servants and cars, and has traveled in foreign lands and met great people and received honors. I've seen her last photograph; she looked rather old, I thought, and tired, but she wore a wonderful velvet gown and there were real pearls around her neck, Laddie, the gift of a king, it is said!

A shrill, thin little voice broke suddenly upon them. It was David. He

U. S. Army Tents

Of regulation 12½-ounce army duck, double weave and double fill. They are mostly tents which were repaired for issue to troops, but account of the sudden ending of the war were not reissued. The Government repairs only tents that require slight mending and which are still good for regular wear. These are practically as good as new.

No. 625A army tents, 16 ft. by 16 ft., complete with hood, pole, pegs, lines and slides, all in splendid condition and fully guaranteed \$37.50

No. 725B army tents, 16 ft. by 16 ft., complete with hood, pole, pegs, lines and slides, fully repaired, completely guaranteed \$35.75

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These covers make excellent auto coverings, are ideal for impromptu auto tents, great for campers, for farmers—for hay, grain or machinery protection—as merchandise covers for truck and other commercial hauling concerns, and for cement and other contractors. Two of them fastened together will make a paulin that would cost you at least \$55.00 today.

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3318-3315. Ladies' Coat Suit—Coat 3318 cut in 8 sizes for Misses and Ladies: 32, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The Skirt 3315 cut in 7 sizes: 24, 26, 28, 30, 32, 34 and 36 inches waist measure. To make this suit for a medium size will require 7 yards of 40 inch material. The width of the skirt at the foot is about $1\frac{1}{2}$ yards. TWO separate patterns 10 cents FOR EACH pattern.

3328. Girls' Dress—Cut in 4 sizes: 8, 10, 12 and 14 years. A 12 year size will require $3\frac{1}{2}$ yards of 44 inch material. Price 10 cents.

3332. Ladies' Cover All Apron—Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. A Medium size will require $\frac{4}{8}$ yard of 36 inch material. Price 6 cents.

3128. Boys' Suit—Cut in 4 sizes: 3, 4, 5 and 6 years. For a 3 year size $3\frac{1}{2}$ yards of 27 inch material will be required. Price 10 cents.

3342. Misses' Dress—Cut in 3 sizes: 10, 13 and 20 years. A 16 year size will require $\frac{4}{8}$ yards of 36 inch material. The width of the skirt at lower edge is $1\frac{1}{2}$ yard. Price 10 cents.

3314. Juniors' Dress—Cut in 3 sizes: 12, 14 and 16 years. A 14 year size requires $\frac{4}{8}$ yards of 40 inch material. Price 10 cents.

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PATTERN DEPARTMENT
California Cultivator
Los Angeles

carried a small paper box and deposited it upon Miss Phoebe's lap with an air of grave importance.

"It's some wild animals I've been taming for you!" he announced, his eyes as bright as a young robin's. "And it's for to remember each other by, Miss Phoebe!"

"Wild animals!" laughed Miss Phoebe, giving him a little hug. "It couldn't be elephants, David, or lions—or—"

"Nope." He threw back the lid. "It's caterpillars! This one," he

pointed to the fatter of his black and yellow, fuzzy specimens, "is King Al-Yellow-Top in honor of King Albert of the Belgians, you know! And him's George Washington, U. S. A. We're to keep 'em, and by and by when they turn into pretty butterflies we'll remember each other. It ain't tomorrow you're going, Miss Phoebe?" His tones were wistful. "Not tomorrow?"

"No, Love," whispered the woman, kissing an adorable curl at the nape of his pink neck, "not tomorrow but the next day. Tomorrow, you and Laddie and I are to have our farewell party in the garden and then Mr. Preston is coming to take Laddie away with him out to his farm."

"Does Laddie like Mr. Preston, Miss Phoebe?"

"He doesn't know him yet, dear, but he will in time. Mr. Preston is a good, kind man and he has two little girls to play with Laddie."

"I'll bet he'll be lonesome and run back to us!"

"Oh, David, don't. You know I cannot take him to New York."

"Why can't you?"

"Because he would not be happy. There is no garden for him to run and play in."

"Ain't there no flowers or trees or birds there?"

"No; only in parks."

"Does God stay in the park, Miss Phoebe?"

"Oh, David, run away and play; I must finish my work now. God is everywhere, darling."

"But you said, Miss Phoebe, He was most where there was flowers and birds and a garden. You said—"

The door bell again was ringing. It was Mr. Preston. He had happened to come to town a day earlier than he expected and would take Laddie home with him, Miss Phoebe and David had not counted on this.

"You won't let him take him, Miss Phoebe?" protested David passionately, "cause he's invited to our party!"

"But, dearie, we cannot ask Mr. Preston to drive 30 miles back just to leave Laddie over night. Come, Laddie."

(Continued next week.)

THIS WEEK'S PATTERNS

Clothes for the school girl of all ages are shown this week. 3342 shows sports dress with all sorts of class; 3328 shows possibilities of a little quick embroidery in plain color cuffs, pockets, collar and fronts. The two pleats in front of skirt carry same effect up into the waist by the overlapping embroidered straps or tabs. The little dress pictured is of gay plaid gingham.

A most becoming suit is shown in 3318-3315, suitable for sport silk, jersey or heavier wool. The sketch at upper right shows attractive closed front. Strips of Angora in plain or novelty weave are still very popular as trimming for either silk or jersey in this style. No woman who has had a jersey or soft-wool suit of this practical style will ever be content without one. They are of the always ready, uncrushable type, equally good for picnic or church going and may with care be made satisfactorily at home.

The new fall hats are very much in evidence; many of the turban and small toque style, covered with duvelyn or similar material in gay colors with little or no trimming. Such a hat, carrying same color used in trimming the suit described above or a color in striking contrast, will very satisfactorily complete a costume. Don't forget the value of a good hat. We were all brought up on the "neat glove, neat footwear of the real lady" idea, but some real ladies do wear dowdy hats with neat gloves and footwear and good dresses, thereby utterly spoiling the effect. And it really is a duty to present to the world we meet as pleasing a picture as possible. That doesn't mean extravagance by a good deal—merely suit-

ableness. Sometimes when we look at the roses of the gardens and the sunflowers of the fence corners, we rebel at the time and the washing and ironing and sewing and mending and polishing demanded if we would be properly "clothed upon"—but what's the use? That seems to be one of our many jobs.—R. P. D.

MORE SWEET PICKLES

Mixed Sweet Pickle

In answer to Mrs. J. W. M. of Fresno in request for sweet pickle recipe I send following:

Put equal quantities of cauliflower, onions and little cucumbers in brine for a week, each vegetable separate in brine by itself. Drain off brine and put vegetables in layers in a kettle. Make syrup of 1 quart vinegar, 2 pounds brown sugar, $\frac{1}{4}$ teaspoon black pepper, 1 large onion, cut fine, 1 small pepper. Pour this syrup over the vegetables, bring to a boil and fill jars with them, putting into each jar a small piece of red pepper, a piece of green pepper, 2 bits of lemon, 2 teaspoons celery seed, 1 teaspoon coriander seed and $\frac{1}{2}$ teaspoon mustard seed. Seal cans at once.—Mrs. John E. Wilbur, Pasadena.

Corn Relish

18 ears corn, 1 head cabbage, 4 onions, 2 large green peppers, $\frac{1}{2}$ gallon vinegar, $1\frac{1}{2}$ cups sugar, 2 ounces mustard, $\frac{1}{4}$ cup salt. Cut corn off cob, chop cabbage and peppers. Put all together and boil until tender. Seal in glass jars.—Mrs. Mitchell.

Pickled Apricots

It is late in the year for this apricot pickle recipe, but I send this one, which is a variation and we think an improvement on the old fashioned peach pickles.

4 pounds apricots (prick them with a fork), 1 pound, 3 ounces sugar, $\frac{1}{2}$ pint vinegar, 12 whole cloves, a little stick cinnamon and $\frac{1}{4}$ teaspoon (scant) cayenne pepper. Let syrup boil up once, then cook apricots five minutes.—Mrs. Jas. M. Mitchell, Torrance.

CANNING STRING BEANS

Plenty of string beans in jars in the store closet means that the basis for innumerable salads and vegetable side dishes is at the housekeeper's command all during the winter months, so when this vegetable is at its best in the garden or on the market the wise woman cans enough for use when it is out of season. The following directions for canning string beans are given by the United States department of agriculture:

Select small, tender wax or green beans for canning purposes. Beans which have grown within the pod to any size are difficult to can, and the resulting product is not so satisfactory as one from younger beans. The sooner the beans are in the jar after picking the better the flavor and the more certain they are to keep. Wash, string and cut off the ends of the beans. Whole beans may be canned or they may be cut in short lengths. Those cut diagonally are attractive in appearance.

Fill Jars with Hot Brine

Place the beans in a wire sieve or in cheesecloth and blanch (scald) in hot water or live steam for from three to five minutes, or until the pod will bend without breaking. On removal, drain well and pack into hot jars which have been boiled for 15 minutes. On the jars place rubbers which have been boiled in a solution of one tablespoon of soda to one quart of water.

Cover beans with a hot brine made from four level tablespoons of salt to four quarts of boiling water. Put on top which has been boiled 15 minutes. With glass top jars put one wire bail in position. Make screw tops about half tight. Processing beans under steam pressure is recommended. Quart jars should be processed 45 minutes under pressure of ten pounds. With a hot water canner or with a home made canner made out of a wash boiler or lard can, process the jars three hours if the one period procedure is used. Make sure the water is boiling before starting to count time. When boiled, tighten the covers and cool.

If the intermittent boiling procedure

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is used, boil for one hour on three successive days. Before each boiling loosen the covers. Tighten covers after each boiling. When the processing is finished, lift the jars from the canner. Cool in a spot free from drafts, test and store. In event of leakage when jar is tested, remove rubber, put on new wet boiled one and process 15 minutes more.

Vinegar Aids in Preventing Spoilage

During the past year the home economics experimental kitchen of the United States department of agriculture has been experimenting with the addition of a small amount of acid—vinegar—to nonacid vegetables being canned. This work is being continued and the results thus far indicate that one to four tablespoons of vinegar added to a quart jar helps greatly in reducing the amount of spoilage. When the vinegar is added the time of processing can be reduced. For instance, it is found that corn, which ordinarily is difficult to can successfully, keeps well when four tablespoons of vinegar are added to a quart jar processed three hours continuously. String beans, old peas and spinach are other vegetables successfully canned by this method.

The addition of vinegar to canned vegetables in the amounts mentioned modifies to some degree the natural flavor of the vegetable, but the result is not objectionable to most people and in many instances is not noticed.

HOUSEHOLD QUERIES

Pickled Walnuts

Please tell me how to make walnut pickle.—Subscriber, Santa Ana.

Nuts should be gathered when they are tender enough to be pierced with needle. Make strong brine, 4 pounds salt to gallon water. Prick skins of walnuts and put in brine for nine days, but change brine every third day. After nine days drain off brine and place in sunshine, moving occasionally, until they are evenly black. This will take two or three days. Pack jars three-fourths full of nuts and pour over them boiling syrup made in proportion of $\frac{1}{2}$ cup brown sugar, 2 ounces cloves, 1 ounce black pepper, 1 ounce allspice, 1 ounce bruised ginger, 1 stick cinnamon. Boil spices (in cloth) in vinegar ten minutes and pour over nuts. In a day or so take off syrup, reboil and pour over nuts. Repeat a second time. Then seal or cover closely and put away in cool, dry place. They should stand about a month before using.

Fig Jam With Walnuts

Can someone give recipe for fig jam with walnuts? I find so many good recipes in your paper.—Subscriber, Yorba Linda

Canning Chilis—Sour Pickles

Please find out how I can put up green long chili in glass jars to keep just like they can them in the stores, and how to make sour pickles, not dill, but the regular sour pickles, and please put in next Saturday's paper.—Subscriber, Lankershim.

The chilis may be peeled in the same way as pimentos, as given on this page last week, roasting few minutes in hot oven or dipping in hot cottonseed oil. Some of the fiery tough skinned Mexican peppers will not loosen their skins with this treatment and it is necessary to dip from two to three minutes in boiling lye, 3 ounces to 1 gallon water. Chill at once in cold water and slip off skins. This makes peppers soft and pliable so they can be packed into sterilized jars after cutting off stems and removing seed cores. It is not necessary to peel for home use. Peppers need only be stemmed and cored and heated in boiling water for few minutes to soften them so they will pack satisfactorily. After packing in jars, fill with boiling water, put on tops loosely, place in "wash boiler canner" and boil hard for 40 minutes. Remove from boiler and tighten caps. Olive or salad oil may be used instead of water in filling cans.

Recipe for sour pickles with mustard was given on this page last week. Here is another: Place small fresh cucumbers in brine made of 2 pounds salt to gallon water. Keep submerged with wooden float for about 4 weeks. They will ferment and scum will form. If they become soft add more salt. Pour off brine, simmer in fresh water 20 minutes, pour off, bring to simmer

again in fresh water and let stand in this for 2 hours to soak out excess salt. If soft add 1 tablespoon alum to gallon water. Rinse in cold water, drain. Cover with strong cider vinegar. If they soften or mold at any time place in fresh vinegar. Pack in wide mouthed corked bottles or jars with glass tops.

This letter was received on Wednesday when "next Saturday's paper" was already off the press. The processes of type-setting, printing and mailing take some time, so that we again call attention to the fact that all material for the household page has been prepared and has left the editor's desk by Saturday morning early the week before date of issue. Had our inquirer sent name instead of initials we would have mailed these recipes direct, for we know that canning time and pickling time are growing short. Please always send name and address with any communication. We never print if requested not to, but may sometimes be able to give quicker service by mail in case of urgency.

Cherry Olives

In accordance with request in Household Queries of August 7 I send recipe for cherry olives:

Take large, firm cherries, wash them without stemming, pack into Mason jars, half fill with water and fill the jars with a good vinegar; add 1 teaspoon salt to each pint jar of cherries. Seal. These are fine in winter, served with meats as a relish.—Mrs. Oliver Arbogast, Los Angeles.

Here is another:

Fill jars with perfect Royal Ann cherries, with their stems. Boil together water, vinegar and salt in the proportion of 1 cup water, 1 cup vinegar, 4 level tablespoons salt. Cool liquid, cover cherries, fill jars full and seal tightly.—Mrs. Henry Pfeffer, Los Gatos.

Others have kindly sent in directions for making cherry olives, but as they differ very slightly from the two given we do not publish.

AN EXCELLENT DOUGHNUT RECIPE

One cup sugar, 2 eggs, $\frac{2}{3}$ cup buttermilk, 2 level tablespoons shortening, $\frac{1}{2}$ teaspoon soda, 2 teaspoons baking powder, 2 medium sized Irish potatoes, 1 teaspoon salt, cinnamon and nutmeg to taste. Boil potatoes, mash fine, add shortening, sugar, eggs, and wetting. Sift soda and baking powder into flour. Use sufficient pastry flour to roll out and fry—never greasy.—Mrs. John E. Wilbur, Pasadena.

VINEGAR HELPS KEEP CANNED VEGETABLES FROM SPOILAGE

If it were not for the microscopic but ever present bacteria, housewives would not have much trouble with canned products spoiling. As it is, however, if they are given half a chance bacteria will soon make a jar of fruit or vegetables ready for the garbage bucket.

It may not always be possible to kill all bacteria in home canning for some of those germs can endure a high degree of heat for a long time. Nevertheless jars and cans must be processed long enough to kill as many bacteria as possible.

In the case of fruit or tomatoes, even though many of the bacteria survive the short heating process, few or none will grow because of the acid present. Heavy syrup added to the fruit also prevents the growth of bacteria. For this reason fruit requires a much shorter time of processing than vegetables, with the exception of tomatoes.

Results thus far indicate that one to four tablespoons of vinegar added to a quart jar help greatly in reducing the amount of spoilage. When the vinegar is added the time of processing can be reduced. For instance, it is found that corn, which ordinarily is difficult to can successfully, keeps well when four tablespoons of vinegar are added to a quart jar processed three hours continuously.

SAD, BUT SO

It only takes a few minutes to find in others the faults we can't discover in ourselves in a lifetime.

It is sometimes well to remind ourselves that thoughtful silence says more than thoughtless chatter.

Select a Piano as You Would Select a Tool

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Practical men detest "cheap" tools, even for temporary use. The tool with a casting that breaks or an edge that turns is never a source of satisfaction. How much more, then, is such a tool to be abhorred if it is expected to serve for a lifetime!

Approach your purchase of a piano with this question in mind: Is this instrument—this tool—going to render good service all the years of my life? Will its tone remain true? Its action pleasing? Will the children, as they grow up, love and revere it and feel proud of it? Will it keep its place as the very center of our home? Or will it be pushed into a corner and left silent and forgotten, like an old mowing machine that broke a casting—like a tool that failed?

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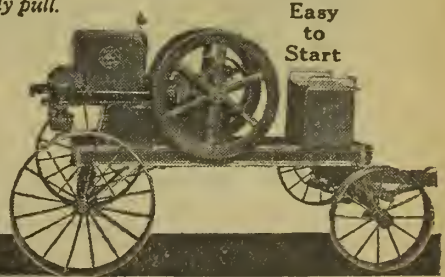
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For United States Senate

Primaries, August 31



Los Angeles Markets

Los Angeles, August 18, 1920.

BUTTER
Butter, creamery extras, Produce Exchange price 63 cents.
Dairy Exchange prices last week on extras:

Aug.	11	12	13	14	15	16	17
'20	63	63	63	63	63	63	63

CHEESE

Brokers' prices:
California flats, 29@31 per lb.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 56 per dozen; case count Prod. Exch. closing price 51 per dozen; pullets, Produce Exchange closing price 47 per dozen; pewee pullets, 31.
Dairy Exchange prices last week on extras:

Aug.	11	12	13	14	15	16	17
'20	54	55	55	55	56	56	56

POULTRY

Price to producers: Hens, lt., 25; heavy, 28; colored, 32; broilers, 31-34; roasters, 38; old roasters, 14; fryers, 32; ducks, old, 17; ducklings, Pekin, 3½ up, 20; others, 17; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47.
Belgian hares, live, 13@17; old, 9.

LIVESTOCK

Los Angeles, Aug. 17.—Weighed and delivered off cars without food or water: Hogs (hard-grain), 125 to 175 lbs., 15.50; 175 to 225 lbs., 16.50.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.
Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between and 8 o'clock, August 10, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market firm. Local: Early and White Rose, fancy No. 1's, mostly 1.25@1.50; No. 2's, 50@75c per lug; 100 lbs. sacked No. 1's, 2.50@2.75. Stocktons, 3.25@3.50.

Carlots: Supplies liberal. Market slightly stronger. Sales to jobbers: New Stock: Locals—White Rose, 100 lb. sacks mostly 2.50. Stocktons — Burbanks, 3.00@3.25. Carlot sales of Stockton Burbanks 2.75@2.95, mostly 2.85.

Onions: New Stock—Reds 1.50, Yellows 1.75 per 100 lbs. sacked; Whites 2.40 per 100 lbs. sacked.

Garlic, lb., 12@15.

VEGETABLES

These are the actual prices obtained August 17 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 10@11; Lima, 5@6. Beets: Doz., 35@45.
Cabbage: Supplies moderate, market steady, movement good, wide range in quality. Best mostly 3½ per lb.; per field crate, best 3.00@3.50.

Carrots: Doz., 35@45.
Celery: Doz. bunches, 1.25@1.40.

Corn: Local, best 75@1.10 per box.
Cucumbers: Market steady; local, best, lug, 40@60.

Egg Plant: Lb., 3@5.
Lettuce: Local, cr., best, 1.00@1.50.

Peppers: Bells and Chilis, lb., 4@5.
Squash: Local summer, large lugs, 60@80; Italian, lug, 80@1.00.

Tomatoes: Local lugs, best mostly 75@1.00; poorer, 40@60.

Turnips: Per dozen, 30@40.

DECIDUOUS FRUITS

These are the actual prices obtained August 17 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal. Bushel boxes: Gravensteins, 2.75@3.10. Local Various varieties 85@1.25 per lug. Crabapples, lug, 1.00@1.25.

Bananas: lb., 10½@11.

Berries: Blackberries—Supplies light, per crate, mostly 4.00@4.50. Strawberries — Local, supplies moderate, market steady, per crate, 4.50@5.00.

Cantaloupes and Melons: Cantaloupes —Market unsettled, supplies heavy, quality and condition wide range. Local: Tiptop, pink meats, quality and condition good, crates, 1.00@1.50; Paul Rose, 1.25@1.75.

Grapes: Malagas, lb., 10@11; Thompson Seedless, 5½@7.

Peaches: Local, best, lug, 1.75@2.00.
Northern, 8@10; few 12.

Plums: Lb., 7@10.
Pears: Bartletts, best, lb., local, 6@8;

CITRUS FRUITS

Grapefruit: California, per box, market pack, 3.00@3.25; special packed brands, 4.00@4.25.

Lemons: Market dull, wide range in prices. Local stock: Packed, 3.00@3.50; loose, 1.25@1.75; lug, mostly 75.

Oranges: Supplies moderate, market steady. Valencias, packed special brands, 126's, 6.00@6.25; 150's and 176's, 6.25@6.50. Local packed, second grade, 3.00@4.50. Packing house culls, 75@1.25 per box.

HONEY

U. S. bureau of markets: Demand moderate. Cars f. o. b. usual terms. White orange, 19@20; light amber alfalfa, 15½@17½; Hawaiian light amber, 14½; beeswax, 40@43.

In Western Honey Bee: Hamilton & Menderson: There is almost an entire lack of demand for honey.

Prices to producers:

White sage and white orange, nominally, 18; light amber sage, 15; light amber alfalfa, 13½; Nevada fancy white, 16; Hawaiian honey, 12@14, according to the grade. Wax, 35@40.

A. I. Root, August 4: The honey market is very quiet, with a tendency toward

lower prices. Prices to producers: Extracted amber, 15; light amber, 16@17; white, 18½@19. Beeswax, 40 cash, 42 trade. There is practically no comb honey offering.

GRAIN AND FEEDS

Grain Exch. prices bid August 10:
Corn: Yellow, No. 2, bulk, 3.15.
Harley: Carlots, on track, 2.50@2.57½.
Kafir: Eastern No. 3, 2.71½.
Bran: Colorado, 51.50.
Milo: No. 3, carlots, 2.71½@3.05; Eastern No. 3, 2.72½.
Wheat: Mixed feed, Northern, 60.00.

HAY

Choice Alfalfa 38.00
No. 1 Dairy Alfalfa 32.00
Standard Dairy 29.00
Stock Hay 25.00
Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:
Tame Oats 23.00@25.00
Barley 16.00@22.00
Alfalfa 24.00@30.00
Barley straw 8.00@10.00

San Francisco Markets

San Francisco, Aug. 10, 1920.

San Francisco, Aug. 17, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras 61
Dairy Exch. prices Extras this week and year ago:

Aug.	10	11	12	13	14	16
'20	61	62	61½	60½	..	61
'19	..	..	56	56	..	56

CHEESE

Dairy Exchange quotations:
Jack, full cream 23@26
Cal. Y. A. 37
Ore. Trips 29½
Cal. Flats 32@37

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 58
Extra Pullets 51½
Undersized 38

Dairy Exch. prices this week and year ago:

Aug.	10	11	12	13	14	16
'20	60	59	59	57½	..	58
'19	..	..	59½	59½	..	56

POULTRY

Wholesale prices are:

Broilers, 38@40. Colored fryers, 2 lbs. to 3 lbs., 38@45, market firm. Colored young roosters (smooth), 3 lbs. to 4 lbs., 45@48; staggy, 27@30. Old roosters (colored), 18@20, market firm. Leghorn hens, 3 lbs. and over, 28@30. Large colored hens, 35@40, market firm. Young Pekin ducks, 25@26; old ducks, 20; young geese, 25@26, market easy. Live turkeys, young spring, 50@55 lb., market firm; old 40@45, market firm. Dressed turkeys, young, large, 60@70, market firm; old, 45@50, market firm. Live Belgian hare, 18@22; dressed, 25@30. Squabs, large, 55@60 lb., market firm. Pigeons, 3.50@3.75 dozen, market firm. Guinea hens, young, \$15 dozen, market firm.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 9½@10; do, 1,200 to 1,400 lbs., 9@9½; do, second quality, 7@8; thin, 6@7. Bulls and stags: Good, 4@5; fair, 3@3½.

Cows and heifers: No. 1, 8@8½; second quality, 6@7; common to thin, 2@4.

Calves: Lightweight, 10½@11½; medium, 8@9; heavy, 7@8.

Lambs: Milk, 9@9½; yearlings, 7½@8.

Sheep: Wethers, 7@7½; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 16½; 150 to 225 lbs., 17; 225 to 300 lbs., 16½; 300 to 400 lbs., 15½.

California Farm Bureau fat hog auction sales continue to show most satisfactory returns to the growers. Prices for top-pers have ranged at almost every auction point above \$10. The points which gathered the greater number of cars, and apparently finished stuff, secured the greater number of bidders. One sale of four cars at Visalia, Aug. 10, was most satisfactory to shippers and we give entire.

No. Hogs Av. Wt. Price

81	203	\$16.20
60	201	16.20
52	215	15.85
99	111	13.85
10	161	14.85
7	312	14.90
2	360	14.85

Tulare, same date sold four cars 13.62-16.05; Hanford, Aug. 12, five cars, 13.80-16.30 (169 of these or nearly half the consignment) were 176 pounders selling at top price; Corcoran, Aug. 13 three cars 15.75-16.40; Modesto, Aug. 3, two cars 13.50-16.10; Turlock, Aug. 4, two cars, 23 consignors, 12.90-15.90; Fresno, Aug. 6, two cars, 12.00-15.55; Wasco, Aug. 7, three cars, 12.75-16.20.

POTATOES AND ONIONS

Potatoes, per cental: Delta, 2.25@2.50; choice, fancy, 2.50@3.00; sweets, 7½@8 per lb. for No. 1.

Onions: New reds, 50@60; yellows, 1.35@1.50 cr.; green onions, 1.25@1.50. Garlic, new, 10@12½.

VEGETABLES

Wholesale selling price:

Artichokes: doz. 85@1.00.

Beans: Lb., String, 3@5; Lima, 6@8.

Cucumbers: Bay, 50@1.25.

Corn: Sack, 2.50@3.50.

Eggplant: Livingston, lug, 50@75.

Lettuce: Doz., 30@35.

Okra: bx. 1.00@1.25.

Peppers: Bells, bx., 1.00@1.25.

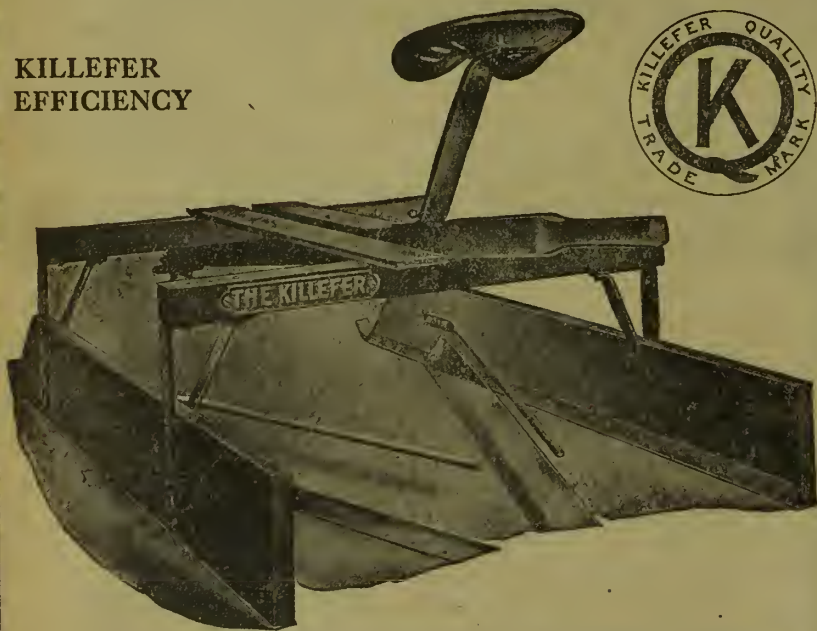
Peas: Lb., green, 5@10.

Squash, Summer: Sacramento, lug, 50@65.

Tomatoes: Rlvcrs, 75@1.25; Palo Alto, 1.00@1.50.

Killefer Bean Cutter

KILLEFER
EFFICIENCY



It Is Time You Were Ordering That Bean Cutter

Cutting time will soon be here and you will want to be prepared.

We build two weights of sled cutters, the above cut shows our No. 281 wood frame cutter. For heavy ground where a stronger cutter is needed, we make a steel arch frame cutter at a slight additional cost.

We are selling extra blades at the same price as last year, \$12.00 per pair, but the price will go higher when the present stock is gone; so it behooves you to get your orders in as soon as possible.

If your dealer cannot supply you, order from us direct. Write for catalogue No. 2.

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave.

Los Angeles, Cal.

Box 156, Arcade Station P.O.

California Cultivator

Costs \$1 per Year

FRESH FRUITS

Apples: Gravensteins, 2.50@2.75 for 4-tier; 2.25@2.50 for 4½-tier; 2.75@3.00 for 3½-tier; Crabapples, 50¢/1.00 per small box; William's Favorite, 1.00@1.50; Alexander, 1.75@2.25.

Apricots: Lb., 4@10.

Bananas: Lb., 8@9.

Berries: Strawberries, large, 75¢/1.00, small, 50¢/65. Loganberries, red, 50¢/65 per drawer. Raspberries, 75¢/1.00 per drawer. Blackberries, 35¢/50 per drawer.

Cherries: Black, lb., 10@18, according to quality; Royal Annes, lb., 10@18.

Cantaloupes and Melons: Cantaloupes—Ponies, 25¢/40; standard 50¢/90; flats, 20¢/30 per box; Honey Dew, crate, 75; casabas, 1.25@1.50. Muskmelon, 60 lb. lug, 1.25. Watermelon, 1@1½.

Figs: 1.00@1.25 for Black one layer, two layer 2.25@2.50.

Seedless: 1.75@2.00; Muscat, 1.75@2.25; Black, 1.50@2.00.

Nectarines: Red, cr., 2.00@2.25; White, Peaches: Per small box, 90¢/1.25; baskets, 75¢/1.00; Los Angeles lugs, 75¢/1.00; large lugs, 1.75@2.00; No. 3, 1.00 a lug.

Pears: No. 1, 3.00@3.50; No. 2, wrapped, 2.00@2.25; No. 1, unwrapped, 40, 1.75 top.

Pineapples: Doz., 4.50@5.00.

Plums: Cr., 1.75@2.25; Blue, baskets, 1.50.

CITRUS

Box: Lemons, standards, 2.00@4.00; Valencia's, 5.00@6.00.

DRIED FRUIT

Peaches—1920.

California Peach Growers, Inc., prices:

Standard	15½¢	15½¢
Fancy	17½¢	18½¢
Extra Fancy	18½¢	19½¢
Slabs	15½¢	

For "Practically Peeled," add 2½¢ per lb. (any grade).

Above prices are bulk basis.

For packing in—

50-lb. or 25 Kilo boxes, add 1¼¢ lb.	
25-lb. or 12½ Kilo boxes, add 1¼¢ lb.	
10-lb. boxes	add 2¼¢ lb.

Blue Ribbon Peaches, packed—

11-oz. cartons, 60 per case	9.00
2-lb. cartons, 24 per case	10.20
5-lb. cartons, 10 per case	10.50

Bakers' Special (Practically Peeled), 18½¢ bulk basis.

F. o. b. California common shipping points.

Shipment: September, October, November—Seller's Option.

The above prices are guaranteed against our own decline until January 1, 1921.

Terms as per dried fruit contract adopted by the National Wholesale Grocers' Association, and the Dried Fruit Association of California, April 23, 1919.

All orders are subject to our confirmation and approval of buyers' names. In accordance with our policy to eliminate speculation, we will sell at this time only a limited quantity to any one buyer.

Apricots—1920.

California Prune and Apricot Growers, Inc., prices:

Choice	22½¢	24¢
Extra choice	24½¢	26¢
Fancy	26½¢	28¢
Extra fancy	28½¢	30¢
Fancy, Moorpark	28½¢	30¢
Extra fancy, Moorpark	28½¢	30¢
Standards	18¢	
Slabs	20¢	

Figs—1920.

Rooding Fig & Olive Co. prices to growers: White Adiraticas 7 cents net. Mission figs at a basis of 6 cents.

Schedule announced White Adiratic, bulk in 50 pound boxes: Standards, 9; choice, 11; fancy, 13; extra fancy, 15.

Black Mission figs in 50-pound boxes: Standards, 7; choice, 10; fancy, 12; extra fancy, 14.

Prunes—1920.

California Prune and Apricot Growers, Inc., prices:

Sunsweet Quality—20-30's, 25¢ per lb. flat; 30-40's, 17¢ bulk basis; 40-50's, 15½¢; 50-60's, 13¢; 60-70's, 11½¢; 70-80's, 10½¢; 80-90's, 9½¢; 90-100's, 9½¢.

Growers quality one-half cent per pound than Sunsweet on sizes 30-40's to 90-100's inclusive.

Raisins: The California Associated Raisin Co. has named 1920 price materially under that which the 150 car auction sale secured in New York. The base price is 15 cents. Box and carton prices are: Sun-Maid, 16s, 21; bulk, bakers, 1n 25s, 20. Loose Muscats—3-crown, in 25s, 23½; 2-crown, in 25s, 22½; 1-crown, re-cleaned, in 25s, 20. Seedless—Thompsons, 16s, 21; Thompsons, bulk, in 25s, 20½; Sultanas, bulk, in 25s, 20½. Layers—6-crown, 20s, per box, 5.50; 6-crown, 10s, per box, 2.95; 6-crown, 5s, per box, 1.60; 4-crown, 20s, per box, 4.70; 4-crown, 10s, per box, 2.55; 4-crown, 5s, per box, 1.40; 3-crown, 20s, per box, 4.40; 3-crown, 10s, per box, 2.40; 3-crown, 5s, per box, 1.30; clusters, 20 15-oz. cartons, box, 5.20; clusters, 12 2-lb. cartons, box, 6.00; clusters, 4 5-lb. cartons, box, 6.00; vineyard run, 100's (strap 19c ex.), 21.00.

HONEY

Rafael & Wing, in Western Honey Bee: Honey is moving very slowly. There is a large quantity of Australian, New Zealand and Hawaiian honey on the market offered as low as 12 cents. Prices offered to producers: White orange, 20¢/21; orange, 18¢/19; water white sage, 20¢/21; sage, 18¢/19; light amber, 15¢/16; amber, 14¢/15; comb honey No. 1, 6.25; No. 2, 5.75; wax, 40¢/42.

GRAIN

Wheat: 2.75@2.85.

Oats: Red feed, new crop, 2.50@2.70.

Barley: New feed, 2.26@2.35; shipping, 2.50@2.60.

HAY

Alfalfa Growers of California under date of August 1:

No. 1 Dairy Alfalfa	29.00
Standard Dairy	26.00
Stock Hay	24.00

Under date of August 14, A. W. Scott Co. says:

Receipts past week 3,344 tons. Some little is coming in upon consignment in cases where no direct offers have been

made satisfactory to producer. The market has gone off practically 2.00 a ton on all grades. With an unusually light demand in prospect and a fair sized crop averaging up all over the state, indications are that lower figures will be reached before warehouse and carrying charges are made for the season. Interior demand is fair and there is more business going on throughout the state than in our local market. Export has been practically confined to a few shipments for government account on existing contracts.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions):

Wheat Hay, fancy	27.00@29.00
Wheat Hay (light 5-wire bales)	24.00@26.00
Tame Oat Hay	24.00@26.00
Wild Oat Hay	18.00@20.00
Barley Hay	18.00@21.00
Alfalfa Hay, first cutting	18.00@23.00
Alfalfa Hay, second cutting	22.00@26.00

Citrus Markets

Los Angeles, August 18, 1920.

Occasional long prices have been paid during the last week, at least one sale has passed the \$10 mark. The auctions generally show good firm prices ranging around \$5 or \$6 for first class goods. F. o. b. quotations are crowding up close to \$6 for good stock, regular sizes. The coming crop promises exceptionally well and from present indications will be the largest in several years.

The promised stiffening of the lemon market has as yet failed to materialize and while f. o. b. quotations are around \$3 but few sales are made. Auctions along Atlantic ports are distressingly low.

Shipments

Shipments to date from Southern California since Nov. 1, 1919: Oranges, 27,052 cars; lemons, 7,016; total, 34,068. To same date last season: Oranges, 30,509; lemons, 8,688; total, 39,197. From Central California to date this season: Oranges, 5,375; lemons, 288; total, 5,663. To same date last season: Oranges, 3,714; lemons, 251; total, 3,965. Northern California this season: Oranges, 261; lemons, 23; total, 284. To same date last season: Oranges, 244; lemons, 2; total, 246.

AT THE AUCTIONS

August 13

New York: 9 or., 2 grapefruit, 1 lem. Val. 2.50-10.06, lcm. 3.75, grapefruit 1.30-4.00, halves 2.25.

Boston: 3 or., 2 lem. Val. 4.65-6.65, lcm. 2.05-3.30.

Pittsburg: 1 or., 1 lem. Val. 4.55, lem.

8. Philadelphia: 1 or., 1 lcm. Val. 6.55, lem. 2.55-3.35.

St. Louis: 2 or., 2 lem. Val. 3.30-4.95, grapefruit 2.20, lem. 1.60-2.95.

August 16

New York: 22 or., 2 mixed, 1 grapefruit, 1 lem. Val. 3.25-8.50, lem. 3.60-4.20, grapefruit 75-4.25.

Cleveland: 2 or., 1 lem. Val. 5.65-6.95, lem. 3.40.

Cincinnati: 1 or., 1 lem. Val. 4.55-5.40, lem. 2.30.

St. Louis: 2 or., 2 lem. Val. 5.00-6.75, lem. 1.50-2.65.

SACKS Perfect Condition
WIPING RAGS—Sterilized
New York Junk Co.
503 E. Second St. Los Angeles
Phone 61130

August 17
New York: 15 or. and grapefruit, 2 lem. Val. 2.90-9.45, grapefruit halves 1.60-1.90, lem. 3.10-4.60.

Stock Raising in WESTERN CANADA

Is as profitable as grain growing. Successes as wonderful as those from growing wheat, oats, barley, and flax have been made in raising Horses, Cattle, Sheep and Hogs. Bright, sunny climate, nutritious grasses, good water, enormous fodder crops—these spell success to the farmer and stock raiser. And remember, you can buy on easy terms

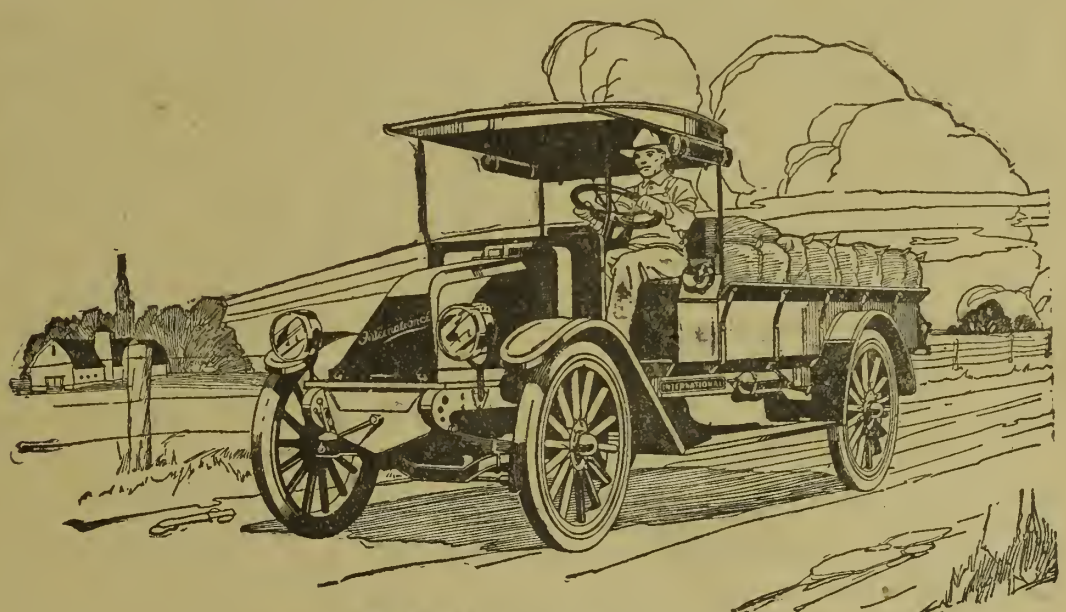
Farm Land at \$15 to \$30 an Acre

—land equal to that which through many years has yielded from 20 to 45 bushels of wheat to the acre—grazing land convenient to good grain farms at proportionately low prices. These lands have every rural convenience; good schools, churches, roads, telephones, etc., close to live towns and good markets.

If you want to get back to the farm, or to farm on a larger scale than is possible under your present conditions, investigate what Western Canada has to offer you.

For illustrated literature with maps and particulars regarding reduced railway rates, location of land, etc., apply to Department of Immigration, Ottawa, Canada, or

Gilbert Roche,
3-5 First St., Sheldon Block
San Francisco, Cal.
Canadian Government Agent



Make Every Minute Pay Dividends

DURING these days of short working hours, high wages and unsettled labor conditions, every hour saved for essential work is money in your pocket. Every hour you spend on the road between your farm and town represents unproductive time. During your busy season someone is getting high wages for this time, or you personally are spending valuable time. Make every minute pay dividends. Reduce the number of hours spent on the road and increase the hours of productive farm work.

You can haul your farm products to town with an *International Motor Truck* and haul supplies back to the farm in about one-fourth of the time that would be required with a team and wagon—a road saving of 300%. Thereby you save, during the year, many hours for necessary farm work—hours and minutes that total into days. You save money in wages, or at least make the high wages that you are paying someone pay you greater returns.

International Motor Trucks are made in nine sizes, from ¾ ton to 3½ ton—a size and style for every hauling requirement. A letter or post-card to the address below will bring complete information descriptive of these low-cost hauling units that make every minute pay dividends.

INTERNATIONAL HARVESTER COMPANY OF AMERICA

(INCORPORATED)

Billings, Mont.	Cheyenne, Wyo.	Denver, Colo.	Helena, Mon.
Los Angeles, Cal.	Portland, Ore.	Salt Lake City, Utah	
	San Francisco, Cal.	Spokane, Wash.	

FISK

Red-Top Tires for Small Cars

WE have specialized in a tire for small cars—The Fisk Red-Top. It is pre-eminently a tire designed for hard service under all conditions.

Its success is due primarily to two things: extra size and extra strength.

For size, compare it with any other tire on the market. As an instance, you will find the Fisk Red-Top 30x3½ is larger than the so-called standardized oversize tires.

To get the extra strength an extra ply of fabric is built into the Fisk Red-Top. The tread is also extra heavy. This means both side walls and tread stand up under the most severe usage.

In every section of the country

small car owners are getting from Red-Top Tires greater mileage, greater ease in riding and with the least attention of any tire that is made.

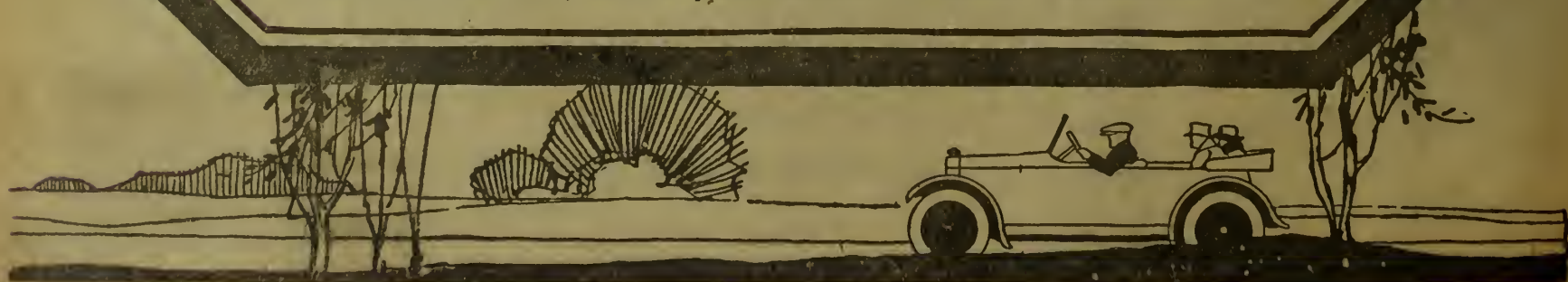
The Fisk Red-Top Tire in its present construction was put on the market early in 1918. It was not offered to our trade until we felt sure that our facilities for production would be equal to the demand—yet the demand was so great that for fifteen months after we were unable to catch up with orders.

With our present greatly enlarged equipment, however, we are now ready to supply Fisk Red-Tops promptly. You will find wonderful satisfaction in this tire especially designed for your small car.

*Next time—BUY FISK
from your dealer*



Like all Fisk Tires, Fisk Red-Tops are backed by the Fisk Ideal, "to be the best concern in the world to work for, and the squarest concern in existence to do business with."



CALIFORNIA CULTIVATOR

and **LIVESTOCK** and **DAIRY JOURNAL**

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

August 28, 1920

No. 9

Number of Farms in California

THE material now being sent out by the bureau of the census is affording some wonderfully interesting reading for Californians. Every agricultural county will be highly gratified at the growth shown by these figures. The old mining counties are the only ones which show decrease in population. They also show decrease in number of farms. One of the counties showing greatest proportionate decrease in population had 42 farms in 1910 and 21 in 1920. The county showing greatest increase had 7,919 farms in 1910 and 13,013 in 1920. Only one county in the state, Alpine, over against the Nevada line south of Lake Tahoe, contains no subscriber to the California Cultivator. This particular fact, however, is not shown in the census returns. The total population of this mountain county is 243. Its population in 1910 was 309. This is one of the two counties of the state which has no railroad.

The counties which have increased are those which have natural agricultural advantages, especially those counties where irrigation development has been greatest. There great tracts have been made into small farms until in some cases there has been 100 per cent increase in number of farms. For instance, Fresno County's farms have increased from 6,000 to nearly 9,000; Glenn, from 600 to 1,200; Imperial, from 1,300 to 2,800; Kern, from 1,100 to 2,000; Los Angeles, from almost 8,000 to over 13,000; Madera, 500 to 1,400; Mendocino County, 1,300 to 1,700; Merced, 1,800 to 2,800; Orange, from 3,000 to 3,900; Riverside, 2,600 to 4,000; Sacramento, 1,600 to 2,900; San Diego, 2,200 to 3,100; San Joaquin, 3,200 to 4,500; Santa Clara, 4,700 to 5,400; Stanislaus, 2,600 to 4,400; Sutter, 873 to 1,441; many other counties, exact figures for which may be seen in center box.

So far as the population figures have been received they seem to be influenced by the number of farms, though of course manufacturing centers have had great influence. Kings County's population in 1910 was 16,230; in 1920 it

is 22,031. Placer County, 18,237, increased to 18,584; Placer County is one of our richer horticultural counties, though it must be borne in mind that her lack of large increase in population may be due to the Japanese situation which is most serious there. Riverside County, 34,696, increased to 50,297. Colusa County, 7,732, increased in the ten years to 9,290. Del Norte, 2,417, increased to 2,759. Shasta County, as will be noted in the table, shows decrease in number of farms and decrease in population from 18,920 to 13,311; it will be interesting to observe the returns at the 1930 census and see what will be the effect of the greater number of small farms made possible by the Anderson-Cottonwood project just completed. Sacramento County, 67,806 in 1910, has increased to 90,978. Tehama County, 11,401 to 12,802. Glenn County, 7,172, increased to 11,853. San Benito County, still running largely to big hay ranches, shows an increase, though not so large as irrigated counties, 8,041 in 1910, increased to 8,995. Yolo County, 13,926, increased to 17,105. San Bernardino, 56,706, increased to 73,401. Orange County, 34,436, increased to 61,375. Imperial County, 13,691, increased to 43,383. Madera County, 8,368, increased to 12,203. Monterey County, 24,146, increased to 27,980. Yuba County, 10,042, increased to 10,375; it may be noted that Yuba's increase in number of farms is also slight.

Many of the counties have not yet received returns, for instance, Los Angeles, which shows 13,000 farms, will be expected to show great increase in population. Its principal city shows an increase in the ten years of 80.3 per cent, with a present total of 575,480. San Joaquin County's figures are not yet in, but its principal city, Stockton, shows increase in population from 23,253 in 1910 to 40,296. Alameda County's figures are received, but are plainly in error. Its principal city, however, Oakland, shows an increase from 150,174 in 1910 to 216,361.

The premium winner, in this —(Continued on Page 251.)

NUMBER OF FARMS

Preliminary figures by the bureau of the census, Washington, showing number of farms in California, by counties:

County	1920	1910	1900
Alameda	2,793	2,422	2,787
Alpine	21	42	37
Amador	500	537	560
Butte	2,102	1,500	1,179
Calaveras	621	632	575
Colusa	781	667	582
Contra Costa	1,681	1,465	1,511
Del Norte	139	114	131
El Dorado	728	716	759
Fresno	8,933	6,245	3,290
Glenn	1,215	663	529
Humboldt	1,738	1,534	1,500
Imperial	2,877	1,322	0
Inyo	487	438	424
Kern	2,053	1,167	1,098
Kings	2,156	1,837	932
Lake	771	603	723
Lassen	603	502	555
Los Angeles	13,013	7,919	6,577
Madera	1,423	573	523
Marin	704	498	462
Mariposa	448	330	381
Mendocino	1,706	1,356	1,452
Merced	2,856	1,856	999
Modoc	753	736	638
Monro	75	91	112
Monterey	1,747	1,658	1,850
Napa	1,406	1,537	1,336
Nevada	477	644	522
Orange	3,931	3,165	2,388
Placer	1,274	1,062	1,076
Plumas	146	221	267
Riverside	4,001	2,688	2,340
Sacramento	2,975	1,601	1,392
San Benito	936	921	907
San Bernardino	3,997	2,949	2,350
San Diego	3,131	2,298	2,698
San Francisco	96	157	304
San Joaquin	4,502	3,286	1,966
San Luis Obispo	1,675	1,714	1,813
San Mateo	619	665	551
Santa Barbara	1,459	1,355	1,149
Santa Clara	5,446	4,731	3,995
Santa Cruz	1,771	1,466	1,274
Shasta	967	1,010	1,221
Sierra	76	110	141
Siskiyou	1,039	1,114	931
Solano	1,387	1,143	1,151
Sonoma	5,985	4,772	3,676
Stanislaus	4,405	2,687	951
Sutter	1,441	873	728
Tehama	1,408	1,006	1,055
Trinity	374	308	272
Tulare	6,244	4,021	2,212
Tuolumne	315	386	457
Ventura	1,474	1,293	1,269
Yolo	1,608	1,255	1,214
Yuba	499	436	483
Totals	117,993	88,197	72,255

Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877
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Livestock and Dairy Journal, Established 1901,
Combined with California Cultivator 1916

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Saturday, August 28, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

MORE SHODDY

The National Sheep and Wool Grower of America is still asking: "Shall the people's rights and sheep husbandry be sacrificed to further fatten the bloated wealth of rag and shoddy venders?" This question is followed by an appeal for the enactment of the Truth in Fabric bill, sometimes referred to as the French-Cap-Per measure.

Shoddy formerly referred to only the cheapest of fabrics, but the wool producers assert that today shoddy enters into the manufacture of cloth used in highest priced garments. Hence the need of an enactment to protect the consumer, likewise preserve for the producer of virgin wool a market which under present methods must be destroyed.

BE CAREFUL

Pear growers have been appealed to for years never to permit wormy pears to go into the market. More than being appealed to, they have been warned by state and county horticultural commissioners that they must not send such pears to market, and fines have not been infrequent. Now come the Eastern inspectors with complaint and warning that pears sprayed so that they show a deposit

of arsenates must not enter their markets.

All of which shows that the producer is between the deep blue sea and the other fellow. However, so far as any suggestions have been made, the situation does not concern the grower who has sprayed his fruit so much as it does the shipper who has been careless in one of the details of packing. No injury has been caused other than that overcareful inspectors at the Eastern end have been zealous in making inspection.

TURKEY BUZZARDS

The time was when people looked at the common house fly as a sort of a beneficial pest. It seemed to be taken for granted that it was more or less a scavenger because it was always found where filth was greatest. Hence the ceiling was often decorated with asparagus tops or other "roosts" for the pests. This commodation was, of course, to induce them to remain out of the soup and pudding, but we learned that a better way was to remove the pest houses which bred this menace to public health and also were taught the slogan, "Swat the Fly."

We are now changing on another "friend of the humans," the turkey buzzard, which from time immemorial has been protected by law because he removed a menace to public health which the farmer himself refrained from removing. These carrion birds have now proven themselves to be carriers of disease from ranch to ranch or from community to far away community. Not only will the legal protection be removed, but it is possible that a buzzard "drive" may take the place of some of our jackrabbit drives of the past. In any case the state department of agriculture is giving warning and calling attention to the fact that hog cholera, anthrax and even bubonic plague have been carried by these pests.

STUDYING MARKETING

In its larger sense the farm bureau became a national institution with the beginning of the war. The duties confronting the farmer were readily realized, but one of the greatest forces in organizing and perfecting the activities of the producers of the country was the farm bureau composed of the farmers themselves. This was not because the organization had assumed national scope other than through the oneness of the patriotic spirit of the times. But the war was no sooner over than the farm bureau people saw the necessity for a more concrete organization with definite aim. State organizations were formed and in turn one great national federation with headquarters at Washington.

This organization has become an active live force, not only in things concerning the farm but in things concerning the nation. It has now taken up one of the fundamentals of successful agriculture, marketing, and is asking questions as to cooperative marketing, especially selling expense and how to eliminate ruinous fluctuations. The grain growers of the Middle West have been forced to suffer losses because of the operations of the bulls and bears in the grain pits.

"If cooperation has enabled Californians to sell citrus fruits, raisins, peaches, prunes, walnuts, and alfalfa hay at prices which are fair to the consumer and profitable to the producer, let us go to California and learn the underlying principles of coopera-

tive marketing." Hence, a committee of 17 representing grain growing sections has been appointed by President Howard and is spending this week studying California cooperative marketing methods. This committee has had sessions in Denver and in Salt Lake City, in that section having conferences largely with those connected with wool growing interests.

California has hearty welcome for these grain growers. Our cooperative ideas have been carried to Florida and made into one of the most workable and profitable organizations by Florida citrus growers. Argentina, South Africa and Australia have all drawn upon us and California glories in passing on information as to the successful methods its farmers have worked out.

COTTON QUARANTINE

Get together. When folks grow a crop which other folks want and want at once, it is rather netting to both the grower and the manufacturer or consumer to have a third party stop, at least temporarily, the whole transaction. Arizona is producing some of the world's highest quality cotton. The great Goodyear factory in Los Angeles, on which millions has been spent to make tires for the western part of the United States, wants that cotton. Likewise, other growers on the California side of the Colorado are anxious for the seed for growing crops in this state. The weevil, the boll worm and other pests are not wanted either in Arizona or California. Hence authorities in both states having to do with crop pests, or rather the prevention of entrance of crop pests, have made regulations which safety seemed to demand.

In order that there might be less of misunderstanding and more of cooperative action between producers and consumers in both states, a meeting was called in Los Angeles last week. It was recalled because of forced absence from the state of Director Hecke of the state department of agriculture, but because of the great need and in order to secure information as to steps necessary, representatives of the state administration of Arizona came and conferred with California representatives, including growers, representatives of the state department of agriculture and members of the Los Angeles chamber of commerce. The Arizona representatives were: Andrew Kimball, state commissioner of agriculture, Thatcher; W. H. Robinson, secretary Arizona commission of agriculture, Chandler; Don C. Mote, state entomologist and commissioner of agriculture and horticulture, Phoenix.

Commissioner Kimball of Arizona, also a member of the Western State Plant Quarantine Board, urged cooperation of all interests and suggested that Arizona's appropriation, now \$30,000, be increased to \$100,000. He also felt that the state of New Mexico should cooperate in the fight. State Quarantine Officer Vary of California spoke of the prohibition as to importing cotton seed or cotton products excepting under certain regulations. D. B. Mackie also of the California department of agriculture, touched upon need of more fumigation plants, some of which have been built under Mr. Mackie's plans, which have made possible fumigation methods 100 per cent efficient.

The meeting resulted in a resolution calling for a committee of five to arrange for a permanent committee representing both producing and manufacturing interests, as well as the two state administrations, to secure cooperative action and end embarrassment and even stagnation.

FAIR SEASON OPENED AT PATTERSON



THE first fair of the 1920 season was held at Patterson August 19-21, and during those three days the community laid aside all work and helped to make this annual event a success.

The Patterson fair has never aspired to be rated "the biggest county fair in the state"; indeed, the idea back of the show has been directed toward making it a community affair, and as such it has succeeded.

Aside from the usual attractions offered at most fairs, the directors centered their efforts toward attracting livestock exhibitors. The Patterson community believes in better livestock; the farmers of the district believe in pure bred, and apparently the commercial interests of the town realize that the prosperity of the community is closely dependent upon livestock, so naturally livestock was the outstanding feature of the fair. In a section that is noted for its dairy industry it was to be expected that dairy cattle would occupy the center of the stage. Likewise in such a notable Holstein community it was to be expected that the Black and Whites would feature the livestock department. It is quite doubtful if many of the larger shows of the season will boast of a larger display of Holsteins than were shown at Patterson—and the quality was there, too; indeed, many of the exhibits will go on to the state fair.

G. E. Gordon, assistant farm adviser of Los Angeles, served as livestock judge and his work met with the general approval of all the exhibitors.

Bridgford Holstein Company of Patterson were the heaviest winners in the Holstein classes, securing all the championships. Other awards were distributed among the following exhibitors: R. L. Holmes, Modesto; H. E. Cornwell, Modesto; H. A. Steimerjohan, Turlock; Frank Klutz, Patterson; Azeveda Bros., Patterson; M. E. Waters, Patterson; A. M. Bibens, Modesto; J. W. Benoit, Modesto; R. H. Davis, Modesto; D. & H. Rowles, Modesto; E. Peterposten, Hughson, and M. J. Ruddy, Modesto.

The get of sire class was won by Bridgford on the get of King Segis Alcartra Prilly; Cornwell was second with the get of Sir Johana De Kol Rag Apple, and Benoit was third with Lone Oak Terzool Korndyke.

The produce of Empress Korndyke Pontiac won for Bridgford. Peterposten was second with the offspring of Irene Beauty and Davis was third with the produce of Bonita Hartog of Glenn Eva 2d.

A feature of the fair was the showing made by the boys and girls who had entered in the calf club classes for senior and junior heifer calves. The calves were secured through the Stanislaus County Holstein Breeders Association and were said to represent an average investment of \$400 each. Of the 18 senior calves shown in the open class five were owned by members of the calf clubs. Incidentally it is of interest that the winner in the open class was a calf owned by Master Clay Steimerjohan. His calf also won the club class for seniors and his brother, George, won the junior class. Other boys who showed in the club classes were: Manuel Azeveda, Patterson; Adelbert Benoit, Modesto; Everett W. Fox, Modesto; Reuben Steimerjohan; Smith Bibens, Modesto, and Linnie Cornwell, Modesto. Miss Wilhelmina Fox and Miss Katie Steimerjohan competed with the boys. Many of the calves shown will be entered at Sacramento.

The Modesto Guernsey Farm, Modesto, and C. E. Fisher, Hughson, were the only exhibitors of Guernseys.

Duroc-Jersey swine were shown by W. M. Way and Son, Modesto, and Ordway and Snyder of Hughson.

George M. York of Modesto was the only exhibitor of Berkshires.

N. W. Thompson of Patterson had an extensive and high class lot of Percheron and Belgian stallions on exhibit.

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One Dollar Yearly

Cultivation of Redwood Stump Land

By Mrs. Jessie M. Thomas

THE "Save the Redwoods" movement bids fair to bear fruit, but another redwood problem is use of the land once the timber has been removed. Thus far it has been of practically no value agriculturally. The logged over lands have been for years held in great tracts by the lumbering companies, useless and unproductive, bringing no income to industry and practically none to the government in taxes. Thousands of acres in this one county are now acres of barrenness, covered with a riotous growth of wild blackberries trailing amid the blackened stumps and snags, and in some places with the brushy second growth

man Kent and Director of National Parks Stephen T. Mather have each contributed \$15,000 for this purpose, and Humboldt County has matched them with an appropriation of \$60,000 for the purchase of these millsites.

Hence it is to the interest of not only the holders of large areas of logged over lands but of those who are working for the establishment of a national park here to rehabilitate this land, for the pride of the people of Humboldt will not allow these patches of unsightliness to remain in the midst of surrounding beauty, if the national park is finally obtained.

The lumbering interests which control great areas of this land have promised to cooperate with the county farm adviser in this investigation. Samples of the soils in the various parts of the county have been sent to the University of California for

Third is burning the stumps. But the heart of the redwood is noted for its fire resisting qualities, and the roots and stump near the ground retain this safeguard against destruction for years and years. The process of burning out the stumps is therefore barely possible, but is such a long one that it too is unprofitable.

So it is easily-seen that to make this



Before It Became Stump Land



Stump Land
Desolation after the timber has been cut.

careful analysis. As the second step Prof. Nelson, soil expert of the university, is to visit these same sections. In the meantime seeds of various sorts have been sent for, and in 12 different localities little sections are to be set out to different crops and the results watched throughout the year, if present plans carry.

The expense of pulling the huge stumps and clearing the ground of roots is prohibitive. Three methods of clearing are available. First to come to mind is naturally the mechanical stump puller. But the stump pulling machine has yet to be made capa-

ble of handling stumps of the enor-years, without depending upon an in-

land attractive to the small rancher, the man with limited means, some crop must be found that can be planted between the stumps, for men with means are not spending their money on such projects as this.

Plowing between the stumps is not practicable because of the underlying roots close to the surface. In the instances where thrifty ranch men have made these little places habitable they have been able to support their families by part time work while grubbing out the roots, clearing the brush and getting intensive cultivation started in the space of two or three or more



Strawberry Field on Cut-Over Ground
Cultivation close to the stumps is impossible. This is a successful and profitable patch.

mous size which these redwoods attain, whose roots extend over a surface of many square feet, often interlocking with the roots of other trees.

The second process is by the use of dynamite. Indeed, many stumps have been "blown" out in this county with this explosive in days past, but the expense of dynamite is now beyond the ordinary purse. And then again this process leaves the great hole in the ground, which must be filled, and the stump, which must be disposed of.

come from the ranch itself. There are now a number of such little berry patches and orchards dotted here and there with black stumps, not picturesque indeed, but providing the family with a home and a small income until the time when the larger fruit matures. Walnuts, especially, are being planted in the warmer sections and under the more favorable conditions.

The fact that the wild blackberry thrives on the logged over and burned (Continued on Page 263.)

of redwood which probably will never be of any value as lumber.

Since the state highway has been put through the redwood forests in southern Humboldt little lumber companies with holdings along this route have cut out small tracts with great rapidity. They have used the highway and heavy trucks as their means of transportation, thereby ruining the roadbed of the highway with the hauling of enormous loads and ruining the scenic highway more irreparably. The greater part of this cutting in hitherto unmarred forests has been stopped on the highway proper, through the efforts of the "Save the Redwoods League" to establish a national redwood park in this vicinity. Congress-

Agriculturally these lands have not in the past proven of any great value except in isolated cases where some thrifty farmer by intensive cultivation and no end of care and perseverance and hard work has hewn for himself a home out of the most unpromising conditions. An occasional fine dairy ranch has resulted where the owner has had the time and means to spend to prepare the ground by removing the stumps. But this process is both expensive and lengthy. Some crop there must be which can be put into this ground with a small amount of preparation and depended upon to pay year after year. And it is this crop, or possibly more than one, which is being sought.

Agricultural News Notes of the Pacific Coast

Northern California

Almonds are being harvested in the Chico section.

There have been serious fires in the Trinity national forest.

Codling moth is reported by inspectors scarce in the pear districts.

September 11 will be State Farm Bureau Day at the Sacramento fair.

The Glenn County farm bureau is operating a lumbering department.

The Sonoma County wool pool has just sent a consignment of wool to Boston.

Indians from Modoc and Trinity are coming into Anderson Valley to help in the prune harvest.

The high school at Los Molinos is the first in Tehama County to install a course in agriculture.

The management of the state fair has announced that 30 counties have engaged space for exhibits.

A quarter acre has been set aside as a children's playground on the state fair grounds at Sacramento.

Durham proposes to settle the dispute between Chico and Oroville by offering itself as county seat.

Placer County farm bureaus are taking a vacation this month. No local meetings will be held until September.

Red spider is prevalent throughout the Sacramento Valley and the Sierra foothills, causing considerable leaf drop.

E. E. Kauffman of the U. S. bureau of crop estimates has just finished survey of crop conditions in Sonoma County.

Local farm bureau meetings will be held in Shasta County at Millville, August 24; Palo Cedro, 25; Hat Creek, 27; Fall River, 28; Mountain, 29.

The farm bureau of Tehama County is working on plans for a marketing organization to be incorporated as the Tehama County Farm Bureau Exchange.

The farm bureau of Tehama County has set Labor Day as the time for its annual meeting and election. It will be held at Courtland Park in Los Molinos Colony.

The California Cattlemen's Association is planning to hold auction sales of fat cattle at Cottonwood and Big Meadows in Shasta County during the last of this month or the first of September.

The Cloverdale center of the Sonoma County farm bureau held its annual picnic on August 13. One of the principal speakers was Dr. Elwood Mead, who discussed the farm labor problem.

Farm Adviser Curtis of Tehama County is arranging to plant a number of trial plots of new varieties of barley this fall. Among these are Tennessee Winter, California 4,000 and Mariout.

Director Davis of the U. S. reclamation service will hold another conference with workers for the Iron Canyon project. A conference was recently held in San Francisco. This second meeting will be in Denver.

A call has been issued for a state conference on the Japanese question to be held in San Francisco, September 2. The object of the meeting is to consolidate all interests in this state favorable to the passage of the anti-alien law.

Central California

Kings County fair September 20-25.

Fresno district fair, September 27 to October 2.

Large shipments of Malagas are being made to Fresno County.

The boys of the Modesto high school have organized a pure bred Jersey calf club.

Cantaloupe season at Turlock is over. Shipments total about 3,500 cars.

Dr. Coit of the state university is investigating fig splits in the San Joaquin Valley.

The Fresno Canal and Land Company places a valuation of \$5,339,771 on its holdings.

Peach growers expect an opening price of 17 cents, two cents higher than last year.

The price of 15 cents per pound in the sweat box to the grower is pleasing to raisin producers.

Fresno County fruit growers complain of fruit stealing. At present high prices the loss is severe.

The first full car of Malagas out of the San Joaquin Valley commanded \$4.52 per crate in New York.

San Joaquin Valley power users are protesting against grant of power sites in the Sierra Nevada to Los Angeles.

Hanford is doing some wholesale arresting of truck drivers because of overloading trucks on public highway.

Fresno reports "Thompsons and Malagas rolling in, good prices, shipments will surpass all previous records."

Grape growers and shippers of Lodi have organized to protect themselves against exorbitant demands of field laborers.

San Joaquin Valley real estate has much of it been given an increase in market value by the growing cotton industry.

It is reported that Miller & Lux will sell somewhat over 60,000 acres of land, mostly along the line of the Wasco-Lost Hills road.

Fruit growers are concerned over the increase in freight rates which takes place this week. Increase will be about 33 1/3 per cent.

The fruit buyer E. Y. Foley, who purchased 150 cars of raisins at the New York auction, announces that all are sold and at an advance.

Farm adviser of Fresno County is receiving communications from cotton growers stating number of acres of cotton being grown and requirements as to labor.

The first cotton festival of the San Joaquin Valley is planned by the Kern County chamber of commerce. It will be held on the fair grounds at Bakersfield the middle of October.

Members of the Central California Milk Producers Association met recently at Modesto. Newspaper reports say "Meeting was a stormy one"; also that "Dairymen vote to remain with big association."

The fumigation season, which started July 1 in Tulare County, has resulted in 858 acres of citrus orchards being treated for gray scale. Liquid gas has been used exclusively. The season has proved so favorable to development of the scale that the natural increase, where there has been no fumigation, has been great.

Southern California

Escondido cannery started August 15 on tomatoes.

Perris cotton growers will build a \$12,000 two stand gin.

Orange County sugar beets are running around 16 per cent.

The earliest dates are now being picked in Coachella Valley.

Palo Verde Valley peach growers are receiving as high as \$110.

Lima bean crop has been somewhat reduced by the excessively warm August.

An Ontario fig grower is raising cotton as an intercrop and finds it profitable.

Orange County fair opens at Huntington Beach, October 7, for three days.

Coachella Valley, Riverside County, shipped 28 cars of exceptionally early grapes.

Imperial Valley growers of Pima cotton think the fiber should sell for \$1.15 to \$1.20.

Orange Heights Fruit Association of Corona will improve packing houses by expenditure of \$20,000.

Riverside fair management is hoping to secure Professor Fitch of Kansas agricultural college to judge dairy cattle.

County Horticultural Commissioner Morris of Orange County is insisting on more careful work by fumigators of citrus trees.

W. B. Parker of Coachella Valley has discovered a method of rooting date offshoots much quicker than by former methods.

Anaheim Walnut Growers Association is rebuilding and improving its packing house. The work will be completed about September 15.

Orange County farm bureau is discussing matter of having department of chemistry with laboratory in order to investigate as to values of fertilizers and other products.

Coachella Valley, Riverside County, is proving to be a large and profitable grower of Thompson Seedless. The crop is very early, the season this year having closed by July 15.

The California Lima Bean Growers Association will close its 1920 membership pool on August 25. The total paid for last season's deliveries has now reached nine cents. More yet to come.

Cotton picking began in the Palo Verde Valley a week earlier than last year. One thousand Mexican cotton pickers will be brought in to assist in the harvest. A flat rate of two cents a pound will be paid.

Imperial Valley cantaloupe growers are organizing, or at least making an effort for a closer cooperative organization to handle next season's crop. Meetings are being held this week in various Imperial Valley towns.

President Howard of the American Farm Bureau Federation and 15 other farm bureau leaders from the Middle West are visiting California this week learning as to cultural methods and more particularly as to cooperative marketing associations.

A meeting of cotton growers and dealers is to be held in Los Angeles Friday of this week to discuss quarantine on cotton seed and advisability of revising present orders as to seed used, machinery, etc. The idea is to keep all cotton pests out of the state.

The Coast and General

Puyallup, Washington, has a new canning plant operating since July 19.

Farmers of five counties picnicked at Point Defiance, near Tacoma, August 7.

The state of Washington reports "June drop late, not heavy, yield of apples 75 per cent of 1919."

The Washington Egg and Cooperative Association now has a membership of 200 and over 100,000 laying hens.

A fruit growers association at Mosier, Oregon, has new tile and stucco warehouse which handled 150 cars last season.

Whitman County, Washington, farm bureau purchases distillate for its tractor owning members in lots of three cars at a time.

Farmers near the Waterville experiment station, Washington, recently held field day at the station and discussed marketing problems.

Farmers in Graham County, Arizona, have been having so much trouble with rabbits this year that they have organized rabbit drives. These drives have resulted in the killing of several thousand rabbits.

Seven hundred and ninety-nine carloads of Garbanzos have been shipped through Nogales, Arizona, from Mexico so far this season. Their value is said to be something like three and one-half million dollars.

The August report of L. M. Harrison, statistician of the bureau of crop estimates of Arizona, gives the probable yield of American Egyptian cotton for the state as 90,000 bales and estimates the short staple crop at 20,000 bales.

A company has been formed to sink a shaft hoping to strike the metal of the big meteor in northern Arizona west of Winslow. A crater at this point is supposed to have been caused by the falling of a meteor thousands of years ago. Previous attempts to drill have resulted in failure.

D. A. Gilchrist, the rodent pest director of Arizona, announces that the United States biological survey has perfected a new poison which is far superior to that previously used in the poisoning of gophers, prairie dogs and squirrels. This new poison is being used in Yavapai County.

It is reported that the Indians on the Navajo reservation are returning to their work of making Navajo Indian blankets. The high price of wool during the past few years has had a tendency to discourage blanket weaving, but this season, with wool prices low they are again making blankets.

Water users under the Salt River Valley project will pay a total of \$5.40 an acre for water and assessments for the year beginning October 1, 1920. Water this year will cost \$1.87 1/2 a foot. There is also an assessment for drainage, construction work, etc., which brings the cost of the first two acre feet up to \$5.40 an acre.

Arizona not only leads all other states in the production of copper but also in the production of asbestos. It is estimated that the output for the year will approximate 1,000 tons. The total quantity of asbestos sold in the United States for 1919 was only 1,200 tons. Although there is asbestos in various parts of the state, the principal mines which are being worked are in the Sierra Ancha Mountains near Globe.

130 California Boys Attend Oregon Agricultural College

By R. P. Royce

DURING the last two months several articles have appeared in the Cultivator relating to the college of agriculture, University of California. These articles have developed considerable discussion as to the real value of the type of instruction offered by our college of agriculture. That there should be a difference of opinion was to be expected. In general, it can be said that most of our correspondents have manifested only the friendliest feeling for the institution. At the same time all seem agreed that the time is at hand when we should seriously consider the matter of strengthening the institution.

In the first article it was suggested that inasmuch as the function of an agricultural college was to teach agriculture, it would seem that the proper place to conduct such instruction would be on a farm. That idea is further strengthened by the experiences of other states. No important state that the writer is familiar with attempts to do otherwise. If the leading states have found that agriculture is best taught under conditions where the student comes in contact with the actual application of classroom instruction to field work, and if the majority of our schools have followed such a plan it would seem that this state should profit by the accumulated experiences of the majority of states.

The writer has been mildly reproached for suggesting any need of a change and his suggestion that it might be well to consider locating the headquarters of the college of agriculture at the university farm, Davis, has generally been interpreted to advocate divorcing the college of agriculture from the university proper. The writer had no intention of suggesting such a program and sees no reason for it. There is no real reason why the college of agriculture could not be headquartered at Davis yet kept under the same general administration

operating at present. One of the most common criticisms of such a plan has been "that the students in the college of agriculture would lose the broadening influence that comes from contact with students in other professions." The basis for that objection is largely imaginary. With proper leadership as fine school spirit can be developed in a small group of students as in a larger community. It would also be found that in such a school there will be interests wide enough apart to broaden the viewpoint of any individual. Further, there is no reason why a differently organized college should not in time grow to large proportions, in which case students would gain wider contact. Another point that should not be overlooked by graduates, past, present and future, is this; that while much is gained through university campus life, there is danger of the individual being submerged in an institution of the present proportions of the University of California.

One hundred and thirty California boys and girls attended the Oregon agricultural college last year. What is the condition which induces them to seek agricultural instruction in a neighboring state? These boys and girls should prefer to attend their own state institution.

The reason for this situation can best be learned from those boys and girls themselves. Here, then, are a few of the reasons: Note the unanimity of opinion.

W. B. Hayes, Pasadena

I will be glad if I can say anything which can be used to improve the situation in this state. There are, as I see it, two main advantages to be gained from attending O. A. C. rather than California:

The higher ranking of O. A. C. among the agricultural colleges of the country. It is commonly granted that O. A. C. ranks first in the West and

second or third in the country. This is an advantage both in respect to the instruction received and in its effect on the professional standing of the graduate.

The separation of agricultural college and state university. This may be the partial cause of my point. One essential feature of the right kind of agricultural education is, I believe, the linking of the theoretical and the practical by applying the information gained in the classroom to work done in the field at the time. Under the California system, where the student spends the major portion of his time at Berkeley and the rest at Davis, this is not possible. At O. A. C., on the other hand, field work is possible at any time, and is taken advantage of. There is also, I believe, a tendency to slight the school of agriculture of a great university.

There are other minor reasons, such as the greater cost of living in Berkeley and the poor feeling which I have been told exists between the agricultural students and the others at the university.

I do not believe there is any doubt but that, if equal opportunities were offered in the two schools, the big majority of Californians would stay in this state, but with conditions as they are the number who attend the northern institution may be expected to continue to increase, as that college is constantly improving and increasing in size and reputation.

Jack Nichols, Palo Alto

I had always planned on attending the University of California, but somehow got switched to the Oregon agricultural college. Perhaps the matter of credits and requirements had the most to do with my decision. I had completed one year at Stanford University. However, when I went over to Berkeley to see about trans-

ferring from Stanford, they informed me that there were certain stated subjects which were required as prerequisites to the more strictly agricultural subjects, and that these subjects must be taken first. This would probably not allow me to graduate in three more years.

Somewhat discouraged, I wrote to O. A. C. regarding transferring. They sent me a very interesting catalogue describing the school and its activities and stated that full credit would be allowed for my work at Stanford and that they thought I would have no difficulty in completing the work in three more years.

One was a rather doubtful admission that I might get in, the other was the helping hand of encouragement. Judging from the tone of the two replies, I decided in favor of O. A. C.

A more recent instance may be cited showing what seems to be a difference between the two institutions. A clipping from a San Francisco paper deplored the shortage of farm help for this summer. It advised all those desiring employment on farms this summer to get in touch with the university farm school at Davis. I wrote to Davis and received the reply that they had no chances for employment, but that I might start out on foot, going from farm to farm until I found work.

At the Oregon agricultural college, on the other hand, the professors were all looking for students to work in their particular line during this summer. The dairy department wanted students to work on various dairies throughout the state; the animal husbandry department was looking for sheepherders and stock men, and the soils department had places open for ditch riders, etc. My present job of assistant water master of Malheur County was obtained through one of the professors of irrigation engineering.

(Continued on Page 252.)

Problems of the Fumigator

From Address by F. G. Wyman at Pest Control School, Pomona

THE first and greatest problem that confronts the fumigator is the weather, for if the weather is too hot, too cold, too wet, too dry, or windy, or if it's too electrical, we have to quit work. There are times when we do not get one row fumigated before weather conditions stop us. When using pots or cyanofumer, the thermometer must not be over 75 degrees for Navels, 72 for Valencias, or lower than 36 degrees for Navels and 38 for Valencias. We have to quit if there is moisture enough on the fruit to form a drop of water, and in electrical weather we have to leave off fumigating two to four degrees sooner than we would otherwise.

After October 1, with the pot or cyanofumer, fumigation can be commenced at two and then weather conditions must be good. If electrical conditions exist, it cannot be begun before three to four. With liquid gas, conditions change. During January, February and March, using liquid gas, we fumigated in daylight only, beginning as early as 8 a. m. and fumigating all day. We fumigated as high as 105 degrees in sun, cutting the dose from 100 to 88 degrees. We did some good work in the Claremont dis-

trict under those conditions. Last fall when we began to use liquid gas we tried to use it the same as the other methods, but found as the weather got cooler at night in November and December the gas would not generate with the thermometer below 60 if there was 50 or 70 per cent of moisture, but would generate if there were only 20 to 40 per cent of humidity with the thermometer as low as 50 degrees. Liquid gas can only be used in day time after October 1. Work done at night by hydro-cy after October 1 shows poor results, as well as jobs done earlier if there is too much moisture in the air, as the gas is absorbed by it. This also applies when there is a cover crop, as it is usually wet.

There is no doubt in my mind that with better applicators, which we will have this year, and also with experience from last year's work better jobs will be done.

Labor Second Problem

Perfect weather conditions would decrease our labor difficulties 50 per cent. If men when they started to work knew that they could work eight

or ten hours per day or night, as the case might be, they would work for considerably less than they do.

Ten years ago men were paid by the hour; now all fumigators in our vicinity are paid by the tree, the price varying according to the size of the tree. I find this more satisfactory, as it costs the grower less and the men make more money. For instance, in 1910 labor cost .086 cent per tree when wages were 35 cents per hour. In 1919 men worked by the tree and labor cost .093 cent per tree. Wages have more than doubled in the last four years but the cost to the grower has not increased over ten per cent.

In 1910 I believe men were using only 30 tents, as when they worked by the hour they would not pull more than a certain number, but when working by piece work they do not like it if there are not at least 60 in line, unless they happen to be very large tents.

In getting men for our work we get the very best that we can find. The work is strenuous; weaklings, young boys or old men, are useless. Sometimes even strong men for the first

few nights are all in, cannot sleep in the day time, gas affects them, and the work is hard. Some of the best men I have had are now working at good, steady jobs elsewhere, making \$175 to \$185 per month. It is very difficult to get them away from good paying jobs where they are employed the year round. Poorer men are easier to get because no one cares for that kind if they can do better.

Tents

In 1916 we paid \$42.50 for 45 foot tents. At present these are worth \$126 and other sizes in proportion—300 per cent increase. It is not only that the price has increased, but they are hard to obtain. If it were not that we have a good many tents on hand the cost of fumigation to the grower would be considerably higher than it is. By using liquid gas there is no burning of the tents. By using cyanofumer there is some slight burning, especially if foremen are careless. By pot use there is considerable damage done, even by the best foreman, and with the present price of canvas the use of pots from that standpoint alone makes them almost prohibitive.

While on this subject I will say that the use of the cyanofumer is a great improvement over the old pot

(Continued on Page 249.)

Inspection of Avocado Orchards

By Ernest Braunton

IN company with Miss R. Agnes McNally, secretary of the California Avocado Association, the writer recently spent a day inspecting avocado orchards in Orange County. Miss McNally is charting these orchards, and the owners will number the trees, record the amount of crop borne by each, time of ripening, age of trees and other interesting and valuable data. It was found throughout the district, as elsewhere, that the crop set of the large or Guatemalan type is generally heavy and that of the Mexican or "thin skins" very light, probably largely due to our cool, cloudy spring and early summer. The Guatemalans come from the cool uplands; the Mexicans revel in hot sunshine. A support of this theory is the fact that the Fuerte, a hybrid between the two and noted for its constant heavy croppings, has not set so heavily as the average of the years since it was introduced.

The first orchard inspected was that of L. D. Oliver, north of Yorba Linda, where there are 460 trees. Of these 320 are of bearing age, a mixture of about 20 varieties, some unnamed and inferior. Of the named varieties the

greater number are of Rey, a poor sort. These will largely be topworked to better ones. Mr. Oliver has a young orchard of 140 trees that were budded in the field to a variety from Anaheim

known as Dutton. It is a purple fruit weighing one pound, egg shaped, strong, upright grower, ripening its fruit in winter, from December to May. But it is not placed in the dozen best sorts by those who know. There is a variety named Anaheim, however, and of which Mr. Oliver has a few, that is quite promising.

Among Big Trees

The next place visited was that of



Observing a Profit Maker

L. D. Oliver and R. Agnes McNally in Oliver avocado orchard, Yorba Linda. Tree is Spinks.

W. H. Holloway, where the original Dickinson and a second one of nearly equal size are growing. The big Dickinson was heavily loaded, certainly not less than 120 per cent of a normal crop. All the larger trees are eight years old, mostly of five varieties. In a total of 125 there are 65 Fuerte (young trees), 18 Ganter, 12 Harmon, three Northrup, the two Dickinson and one each of a few others.

The really big trees were a few on the B. H. Sharpless ranch at Tustin, the home of the original Sharpless. Here, in a home orchard of 100 trees, nearly all are of that variety. The older trees are loaded with hundreds of fruits of about 24 ounces each. There are some large trees well loaded of the Monroe, so named for Mrs. Sharpless. The others are of many varieties of the better sorts. Aside from this place there is a young six acre orchard of Sharpless at La Habra that promises much. The original tree of this variety is one of the largest in California.

On September 17, 1901, in company with the late Dr. A. J. Cook and Samuel Tustin, the writer visited a fruiting avocado on the street corner in Tustin. It was a Mexican variety with globose fruits weighing a quarter pound each. The tree was loaded, and Mr. Tustin told us he sold them at \$3 a dozen. After a lapse of 19 years the tree was again visited and found still to be fruiting, though on a street corner, in the parking and surrounded by concrete, receiving no water except the winter rains.

VIGILANCE WITH GUM DISEASE

By J. E. Calkins

If there is any method by which at reasonable cost gum disease and scaly bark can be kept out of the grove entirely, there is no doubt that it will appeal to the grower who has pride enough in his property to want to be able to say to visitor and to prospective purchaser that he has not a sick tree in his whole acreage. It is practically possible to have such 100 per cent groves, and many more of them than we find today, but it is not possible to have them by the methods that now generally prevail. The present popular method is to wait till a tree shows that it is sick, and then try to cure it. The gum free grove will never be produced along that line, but it can be made by keeping such a watch on every tree in it that any outbreak of gum is caught in its very incipency and effectually disposed of right there. Taken at the start, with only a small show, the disease will almost unfailingly disappear, actually be cured, if the gum pocket is cut out down to the wood and the Bordeaux paste applied. But to be certain of this it is not enough to walk away satisfied after that one treatment. In not less than 30 days that tree should be carefully looked over again, and this time, whether there is further show of the disease or not, the paste should be thoroughly removed with a fine, stiff wire brush till the wood is cleanly exposed, and then another treatment should be given, a few silts with the V knife, and a new coat of fresh, bitev Bordeaux, and so on. The time will soon come when the ugly brown stain will not show through the white of the paste, and then no other outbreaks will follow, but that does not end the need for ceaseless watchfulness.

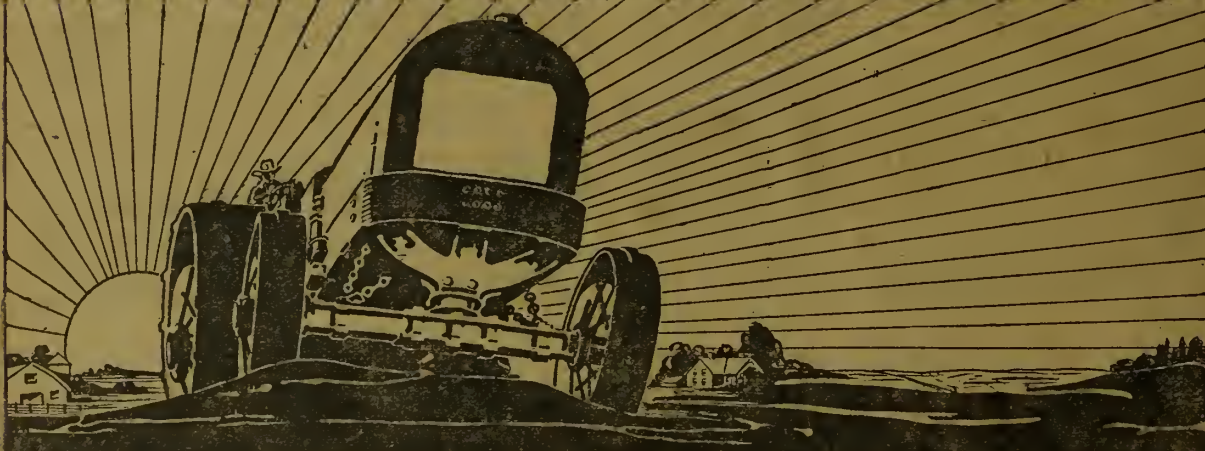
In fact, to keep free from these diseases the grove should have a careful inspection not less than every 30 days if there is gum in it, and not less than every 50 or 60 days if it appears gum free.

SHIP FRUITS BY PARCEL POST

How to get the best returns for our dried fruit, our nuts, in fact all of our products, and in such a way as to bring greatest return to the producer, is one long question. With the establishment of the parcels post we all hoped for a material aid, but some of us have been disappointed in this possible method. We do not wish to be put in the position, however, of in any way discouraging anyone from using parcel post for marketing farm or orchard products. In fact, we are glad to pass along a suggestion like the following sent in to us by Fred Hohlweg of Fairfax, Marin County. Mr. Hohlweg writes:

"I think it would be good policy for some fruit packers to put up dried

NATIONAL TRACTOR & IMPLEMENT SHOW OF THE WEST



Verdugo Woodlands

(GLENDALE)

Los Angeles, September 20 to 26

A Great Business Show You Cannot Afford to Miss

Displays of the latest, most improved tractors, trucks, implements and power farming machinery of all kinds. Many interesting and valuable accessories. Entertaining features for visitors.

More than 300,000 square feet of exhibits, including 30 or more improved tractors never before exhibited. It will be the first show of national scope ever held on the Pacific Coast. Thousands of visitors are expected.

The National Tractor and Implement Show of the West will be the great market place for buyers of modern power farming equipment. Make your plans now to be there. Enjoy the big show and the unequalled recreational advantages of Los Angeles and vicinity—combine pleasure with business.

Inquiries regarding hotels, rates, etc., gladly answered by the Secretary of the Association.

Free Camping Grounds at Verdugo Woodlands

Under Direction of

Tractor & Implement Dealers Association of Southern California

Guy H. Hall, Mgr.

fruit in packages which could be mailed by parcels post all over the world. Such packages of peaches, apricots, etc., should not weigh over ten pounds, as the usual weight permissible in international traffic is four pounds. Boxes of that weight would be bought by many persons to send to their friends in all corners of the globe and would develop a large trade and reputation for some enterprising firm."

One large establishment took up this matter, advertising largely not only in California but in some Eastern states, shipping assorted packages of prunes, raisins, dried apricots, nuts, practically everything of the more valuable products of California, but the building up of a trade which justifies the keeping up of a stock the year around to meet these orders calls for an immense business. True, the small producer may be materially aided by parcel post in disposing of a few products in nearby sections or even in a few of the Eastern states, through friends or those whose names may be secured. The larger cooperative fruit marketing associations have felt that it was best to deal only with the regular trade. It is hardly possible to follow two methods of marketing without some little conflict, so while this matter has been urged upon the larger corporations it has never yet been taken up in a large way.

NATIONAL TRACTOR AND IMPLEMENT SHOW

All realize that the National Tractor and Implement Show of the West at Verdugo Woodlands, Glendale, near Los Angeles, is to be a business show, conducted in a businesslike way for business men. From September 20 to 26 the beautiful park like setting will embrace an exhibition of tractors, trucks, trailers, in fact almost every type of power machinery used on modern farms, orchards and ranches. It

is safe to predict that, with a very few exceptions, every tractor and implement of well known make will be represented by an exhibit at this show. There will also be several tractors, implements and accessories making their first bow to mark their entrance into the already large field of power farming appliances.

Water pipe lines have been laid, the ground is being cleared, and by the time the show opens the woodlands will present a beautiful appearance. In all there will be 300,000 square feet of exhibition space, which at the present rate of reservation will be entirely occupied. Among some of the classes of exhibits already "lined up" for space at the show are tractors, motor cultivators, tractor and horse drawn implements, threshers, land levelers, motor trucks, pumping plants, farm lighting plants, stationary engines, beltings, lubricating oils, carburetors, magnetos and all other devices and equipment that can be classed as power farming and labor saving machinery. Letters received by the Tractor and Implement Dealers Association of Southern California, under the auspices of which the show will be held, and by Guy H. Hall, manager of the show, indicate that the interest in this great show is widespread. In order that full opportunity may be given visitors to enjoy entertainment in Los Angeles and the resort cities it has been decided to close the show at 6 p. m. daily.

It is apparent that there will be a large attendance from Mexico and Central and South American countries, and buyers are also expected from the Orient, Australia and Hawaii. To persons interested in the development of power farming equipment the show will present an exhibit of the extent to which this important phase of modern industrial and agricultural life has progressed. In anticipation of large numbers of visitors to the show, the

secretary of the Tractor and Implement Dealers Association of Southern California has announced that hotel reservations and information may be obtained by addressing his office.

The Verdugo Woodlands site is easily reached from Los Angeles, being only a few miles from the business center of the city and connected by several of the fine boulevards for which the southern district is justly celebrated. In addition to the excellent motor roads, the Pacific Electric will run trains direct to the gates of the park.

ENTHUSIASTIC GROWERS

If enthusiasm and interest in their work means success the avocado growers of California have a great future. It is only a few years since our first avocado plantings were made, that is, referring to commercial plantings. Almost immediately after these first plantings the growers began to get together and soon had organized the California Avocado Association. This association has been a strong influence, not only for more general planting of this delicious salad fruit, but more intelligent planting, which means service to consumers and service to the industry. The association recently held meeting and exhibit in Los Angeles and new converts were made to the industry. At that time a board of directors was elected to handle details of the business in the interval between meetings. The principal work before this board has been preparation for a great meeting to be held in Santa Ana, October 9.

To the end that this may be a worth while meeting the directorate gathered in monthly session Friday of last week at the home of J. M. Elliott, 914 West 28th Street, Los Angeles. Mr. Elliott's delightful home made a most attractive meeting place and preceding the business session luncheon was served in

which avocado and fruit salads were the feature. Only those who have tasted ripe avocados perfectly prepared know how that taste lingers and calls for more. At the business session the matter of the Santa Ana convention called for discussion of the program and especially of the banquet to be served at that time. It was suggested that a banquet hall should be arranged which would accommodate at least 300 attendants.

GRAPE DAY

A complete and extensive poultry exhibit, an elaborate citrus display which will include a demonstration of packing as done in a modern plant, and many other exhibits of all kinds of agricultural and farm products will be features of Escondido's annual Grape Day festival, held September 9.

Grape Day is Escondido's own celebration. In the height of the grape season she presents to her guests tone of choice, ice cold Muscat grapes. An extensive program of entertainment is offered, starting with a parade a 17, in which all the towns of the county will participate, and ending late at night with a carnival and street dance. Last year over 8,000 people thronged the valley and this year the committee is making preparations for a still larger crowd.

A QUARREL IN BLACK AND WHITE

Two colored men in a quarrel expressed themselves thus:

Rastus: "Look here, you big stick of lieerice, you big ton of coal, you big aee of spades, don't you look at me again."

Mose: "Look here, brother, you ain't no barrel of flour, no bottle of milk, and no snow bank, either."



Owl Fumigating Corporation is sole licensee under the Dingle patents for the manufacture of Liquid Hydrocyanic Acid for Fumigating.

spouting, or loss of gas. These Field Coolers will be furnished at actual cost.

The Owl Fumigating Corporation, in their new plant at Azusa, employ all the latest and most scientific methods in production, handling, transportation and machines for the successful application of Hydrocyanic acid for citrus fumigation.

—ASK THOSE WHO HAVE USED THEM—

Owl Fumigating Corporation

Azusa, California



FOR SAFETY In Fumigating With Hydrocyanic Acid 'Cool "Gas"' IS ESSENTIAL



Exhaustive tests have been made by the Owl Fumigating Corporation to determine the most efficient, economical, and safest methods of handling, and application of liquid hydrocyanic gas in fumigation.

The result of these tests has proven that

Cool "Gas" Is the Keynote To Economy and Safety

The above illustration is of one of our specially designed Field Coolers. It is a convenient sized barrel with large handles, and equipment for drawing off the hydrocyanic acid. It is constructed with packing after the principle of a refrigerator. A drum of hydrocyanic acid placed in the Field Cooler will maintain its low temperature during use and can be transported with ease. For greater convenience, the Field Cooler is provided with a well-built stand which keeps the Cooler off from the ground and facilitates the drawing of the acid.

If drums of liquid hydrocyanic acid in reserve stock are kept in a "cold house" and placed as needed in the Field Cooler, there will be no danger of expansion and

A Tractor That Will Not Last Will Not Pay

Long life and low upkeep expense are two outstanding features of the Rumely OilPull.

A 30-60 OilPull near Bakersfield, Calif., purchased in 1914, has covered over 10,000 acres in draw-bar work, and has worked in the belt over 300 days. And, up to date, less than \$400 has been expended for repairs. The OilPull is built in four sizes—12-20, 16-30, 20-40 and 30-60 H. P. Send for catalog.

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Our works at Nadeau Park are the most complete Chemical Fertilizer Works west of the Mississippi.

Early Grapes in Imperial

By R. L. Nougaret

Imperial County possesses the unparalleled and much sought advantage of producing early grapes. In fact, some of the earliest in California. Not because some special variety can be grown there better than in other parts of the state, but because varieties of grapes commonly grown elsewhere mature about a month earlier; such is true for the Thompson Seedless and Malaga. In regard to early ripening, its climate does for grapes what it does for other fruits and vegetables. For this reason, if for no other, Imperial as a grape center has a very promising future.

There is, however, a most instructive lesson to be learned, and which deserves being heeded, from the present condition of certain vineyards, the vines of which are going back and which from all appearances will be unprofitable or dead within a short period of time.

Investigation proves almost invariably that this deterioration of vineyards, or spots within them, is due to mineral salts extracted by water of irrigation from lower levels than the depth of a foot or more of surface soil and deposited in accumulating quantities by evaporation in that portion of the soil where the vine has established its root system. The surface of the ground in most cases gives evidence of this action of wa-

ter, for deposits of salts have made their appearance where none or only traces were noted when the vineyard was planted. A proof to substantiate this theory is that the vines were healthy and vigorous during the first years, many of them attaining a good size, and in later years only have shown signs of suffering, decline, and have produced little or no crop. The vines finally die.

The experience of melon growers is well worth considering by the would-be vineyardists when selection of a piece of land is made for a vineyard. Melons are grown these days almost exclusively on ground which has formerly been alfalfa fields. The alfalfa roots remaining in the ground not only have enriched it by the rotting of their organic structure but have also changed the physical nature of the soil and caused it to become more retentive of moisture.

This condition of soil is an exceedingly important factor as well for the vine as for the cantaloupes and melons. There is in connection with this another interesting phase. It is somewhat of an assurance that if during the time the alfalfa field was subjected to irrigation no mineral salts were brought up to the surface, there will be little danger of this occurring when the vineyard will have been growing a number of years and irrigated.

Label Quantity of Fruits and Vegetables

Fruits and vegetables in package form when shipped into interstate commerce should bear a plain and conspicuous statement of the quantity of the contents in each package, according to a statement made by officials of the United States bureau of chemistry, who are charged with the enforcement of the federal food and drugs act. The bulk of the fruits and vegetables now shipped into interstate commerce are marked in accordance with the law. This amendment has been in effect for six years.

Fruits and vegetables in baskets, hampers, drums, cartons, boxes, crates and barrels may in general be marked by either weight or dry measure, or when packed in barrels may be marked in terms of the United States standard barrel and its subdivisions of third, half or three-quarters. Statements of dry measure should be in terms of the United States standard bushel and its customary subdivisions of half bushel, pecks, quarts, pints or half pints. If the quantity of the contents be stated by weight or measure, it should be marked in terms of the largest unit contained in the package,

except that in the case of an article with respect to which there exists a definite trade custom for marking the quantity of the article in terms of fractioned parts of larger units, it may be so marked in accordance with the custom. For example, if the package contains a pound, or pounds, and a fraction of a pound, the contents should be expressed in terms of pounds and fractions thereof, or of pounds and ounces and not merely in ounces, unless there is a definite trade custom to the contrary.

Small Open Containers

Crates or "flats" containing small open containers of apricots, berries, currants, grapes, peaches, plums, prunes, peppers, tomatoes and the like should be marked on the outside of the crate or "flat" with the number of small containers and the quantity of the contents of each. When the crates are so marked it is not necessary to mark the quantity of contents on the small open containers within the crates, but if the quantity of containers is marked on the small open containers the marking must be correct.

Subduing the Wind

By Ernest Branton



SUBJECT that might be profitably discussed at the next meeting of the California Citrus Institute is that of windbreaks, one of vital importance to citrus growers in many sections, as was proven during the high winds of late November last.

Thirty years ago that part of Los Angeles now known as Hollywood was a bare valley, planted only to cereals and known as the "Windy Cahuenga." Strong hot winds came over the stubble fields after harvest, that were very disagreeable and at times destructive. Then came a few eucalypt windbreaks near the coast and a few roads aligned with trees, the latter through the influence of Abbot Kinney, then chairman of the state forestry commission. Beneficial effects were immediately noticed, more windbreaks and orchards were planted and then began the unrivaled upbuilding of that section as a residential suburb. Today the gentle zephyrs wafted over that part of the city constitute its chief charm and lure to the homeseeker.

To go back over the same period of years, there was a vast sandy stretch of 200,000 to 300,000 acres in the western part of San Bernardino County

that presented a great problem in wind control, and one not yet solved in some parts though the proper means are now well known. Well within the center of this section lay the towns of Etiwanda and Rialto and between them in later years the community settlement known as Fontana.

Twelve years ago A. B. Miller of the latter place began planting miles of windbreaks of various kinds and eight years ago installed instruments for recording wind velocity on top of a house 30 feet above the ground. The test of wind at that height records the movements well above the tops of the oldest orchards. An examination of the eight years wind charts was a pleasing revelation to the writer. The lines each year have dropped lower and lower and become more uniform. While formerly they were high and jagged, like the sky line of a many spired iceberg, the one on last year's chart is but a waveling, nearly level, line. Such mastery of the wind the writer has not witnessed elsewhere in California, and in consequence the Fontana-Etiwanda-Rialto section is now a recognized part of the "Land of Heart's Desire," a section of happy home builders in the

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Will show the big advancement of the San Fernando Valley in Agriculture and Horticulture, in pure-bred Dairy and Meat Cattle, Horses, Mules, Milk Goats, Sheep and Poultry.

There will also be a great auction sale of fine stock.

The Amusement Program covers a wide range with something doing day and night.

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C. L. Schufeldt, Mgr., Owensmouth, Cal.

midst of profitable orchards of all the fruits for which California is famous.

The experience of Mr. Miller on the 18,000 acres of Fontana lands cannot fail to be of interest to all in need of windbreaks. The first question arising is what is best to plant. No other tree has rivaled the common blue gum, *Eucalyptus globulus*. Right at this point we see hands raised in despair and hear the wailing cry, "soil robbers." But Mr. Miller has solved the problem. He has a root cutter built like a subsoiler, except that the beak is a large chisel edged tool running two feet into the soil. Drawn by a powerful tractor it cuts 15 miles of roots in a day. Where trees are on roadsides this machine is run on the orchard side only. Between orchards it is run on one side this year and on the other side next year. It is found that 85 per cent of citrus roots are within the top two feet of soil, so the relief is complete within that zone. But 90 per cent of blue gum roots are within the top two feet, at first cutting at least, so the excision of offending roots is still more complete.

Citrus trees planted within 12 feet of gigantic eucalypts were nearly as large and nearly as fruitful as those farther away and the dwarfing effect came before any root cutting was done. Mr. Miller states that before this severe surgery even the fourth row from the windbreak was affected. This is the record of the happy day when eucalypts and fruit trees, like the lion and the lamb, may grow in peace together. Blue gums are planted in double rows but a few feet apart. As they get tall, stilty and spire like, the inside (or either) row is beheaded and becomes bushy below. When these have again grown up the other row is headed back. The manna gum, *E. viminalis*, is second choice with Mr. Miller, and a hardier tree, standing both more heat and more cold without injury. The red gum, *E. rostrata*, grows too singly in trunk and is bare below. *E. tereticornis* is still poorer. *E. rudis*, *E. corynocalyx* (the sugar gum) and other species tried are of little value. On this sandy soil roads running at right angles to windbreaks are planted to black locust, grevilleas, cypress and a variety of trees, but this last year only carob trees, 3,000 of them, were set out. Shade, protection and a crop of beans for stock food is expected from these drouth resistant trees.

PROBLEMS OF THE FUMIGATOR

(Continued from Page 245.)

system for the dose of gas is discharged under the tent; in half a minute or less the tree gets the benefit of the full dose. The gas is hot, rises to top of tent immediately, and as the leakage of the tent is so great that after 30 minutes no great amount of gas is left, my opinion is that after 40 minutes there is not enough gas to do much good. It is safe if tent is dry to go under after half an hour, while with pot it takes 15 minutes to generate, consequently there is never as large a volume of gas and I doubt if one can get as good results.

Some say that they used to get better results with pots in my district. Undoubtedly true; but conditions have changed. Scale is more acclimated or immune and hatch more uneven. Ten years ago uneven hatch was seldom heard of. We are using sodium cyanide now. This takes longer to generate, consequently in a pot results are not as good as if potassium were used.

I want to impress upon the ranchers that it is the quickness of generation with that material that gets the best results. The generation in the cyanofumer with the sodium is quicker than potassium would be in pots. The same is true of liquid. If the liquid is not turned into gas in two minutes results are poor. Consequently heat is necessary. Work with this must be done in the day time or warm nights. The kill was poor in some orchards in certain districts ten years ago at the time when potassium was used with the pots. I know of one ranch that was fumigated twice in one year (about 12 years ago) with potassium cyanide in pots, and when they finished the ranch was still dirty. I do not blame the fumigator who did the work, but the condition of the scale. Cooperation of Ranchers

If we could go in any one district and fumigate as we went, I am sure better results would be secured. If

I fumigate a ten acre ranch today and go back in 30 days and fumigate ten acres west of the piece we had already done, there will be considerable of the scale that has blown, traveled, or got into the other grove in some way; so if every scale had been killed when fumigated, the rancher would still have a dirty grove next season.

There are some reasons why the block system cannot be followed; first, irrigation; second, cover crop; third, condition of scale. One grove might be hatched, the others not. If the block system were followed the cost of drayage would be lessened and the blowing of scale from one orchard to another would be eliminated. The manager would have more time to visit each gang. Some need it and some do not. Sometimes I have one outfit southeast of Pomona, one east of Glendora, some in Charter Oak, Claremont and other places. I have hauled tents eight miles to do a job and then had to return in a few days near to where I started.

Damages to Trees and Fruit

There is never a year goes by without some damage occurring. Our damage last year with hydro-cy was confined chiefly to one 40 acre piece. We started with an 88 per cent schedule, but found after two nights that we were burning fruit, also dropping leaves. Weather was cool but burned fruit at six (in September). The foreman quit at 11 and the last row was

burned badly, as there was some moisture at that time. There were 11 other gangs out that same night, but no damage was done anywhere else. Another foreman was fumigating the adjoining ranch. No damage was done at all. We dropped all the leaves and a few oranges on 20 or 30 trees on another ranch. All had been treated with Creonallum; no fruit was pitted. On another ranch we burned a few oranges in a patch where soil conditions were poor, hardpan underneath. Burned less fruit with hydro-cy than with pots or cyanofumer, and less with cyanofumer than with pots, as there is more acid in pot gas than in cyanofumer gas. I would like to use heavier dosages this year if growers would be willing to pay for more material and stand the loss of some pitted fruit, which is more liable to occur. Sometimes damage is done by carelessness or by the weather being too wet, too cold, too hot, too dry, or too windy, the first two most frequently. Sometimes damage occurs when no one can tell the reason why. Groves in sandy soil, no subsoil, hardpan groves that lack care, water and fertilizer, are the causes of most damage. Diseased trees, especially if Bordeaux has been applied on trunks or limbs, are liable to damage. We have killed several and damaged many others in our ten years of work. Killed ten trees last year with liquid gas by setting drums under trees in shade. This year containers will have to be provided. Have

also killed some by dumping residue from cyanofumer near grove in other seasons. We have had a little damage from application when applied under tree, gas striking body, three or four trees damaged.

Hydro-cy is more dangerous to handle than other means of fumigating, both to men and trees; to men by inhaling, to trees if spilled only, or leaky drums.

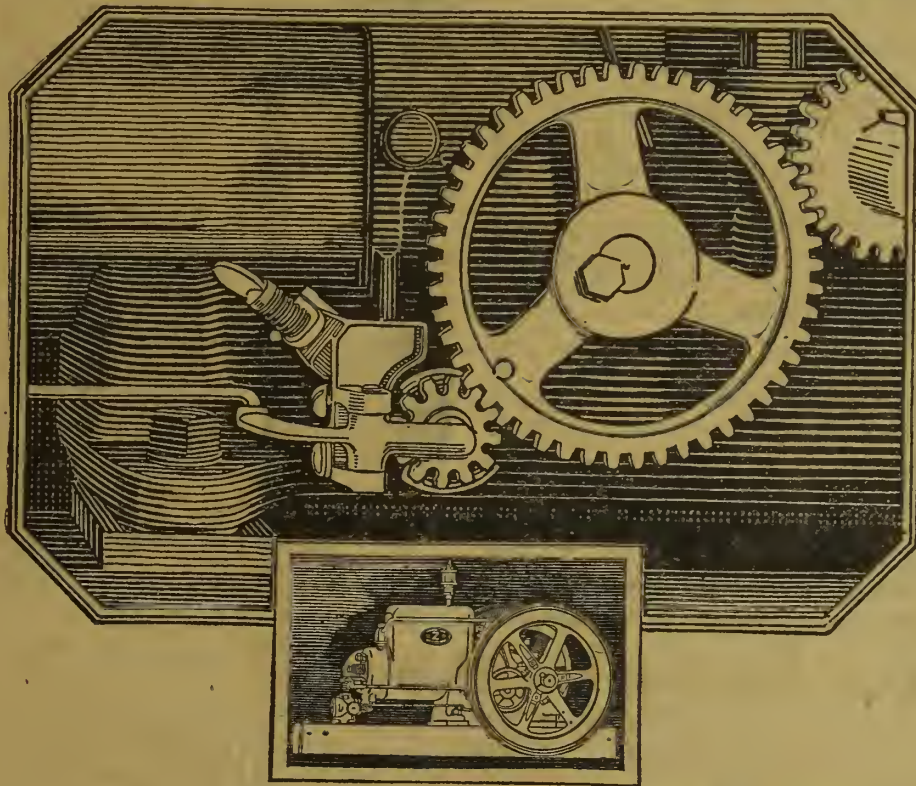
Getting Work Done When Growers Want It

This is very difficult. So many want work done before putting in cover crop. Almost impossible to do. Very few want work done after December 1, although some of our best work is done after January 1.

ORNAMENTALS

Trees, Plants, Shrubs direct from nursery to you. For windbreaks, hedges, and beautification. WRITE FOR CATALOG, which illustrates and describes best varieties for California conditions. **LEONARD COATES NURSERY CO.** MORGAN HILL - CALIFORNIA

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Throttling Governor Gives Steady Speed

Every "Z" Engine is equipped with a sensitive throttling governor. Regulates the amount of fuel and air admitted to cylinder—maintains uniform speed—summer or winter, regardless of work being done.

Throttling governor enables the "Z" to run on kerosene as well as gasoline—saves you money.

Governor is a complete, high grade assembly unit—not a makeshift device. Its case-hardened contact parts resist wear.

The throttling governor has mighty important duties: Helps maintain uniform cylinder temperature—gives smooth, steady flow of power that saves wear and tear on belts and the driven machinery.

Other "Z" features are: Bosch magneto, more than rated power, parts interchangeable; clean cut design; long life.

Go to your nearby dealer today and see the "Z." He will show you why you should have one.

PRICES: $\left\{ \begin{array}{l} 1\frac{1}{2} \text{ H.P.} \dots\dots\dots \$ 85.00 \\ 3 \text{ H.P.} \dots\dots\dots 135.00 \\ 6 \text{ H.P.} \dots\dots\dots 220.00 \end{array} \right\}$ All F. O. B. Factory



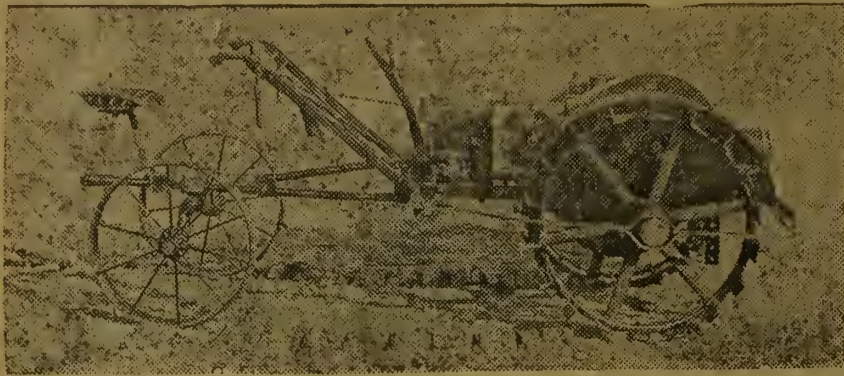
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OPERATOR DOESN'T WALK

5x5½ Motor
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36 in. Wide Over Lugs
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Positive Clutch in Each Wheel

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Stand Supreme For Growth and Productiveness

You can't afford to buy anything but the best if you expect remunerative returns from your grove.

CITRUS TREES

Ours are the best that can be produced and always give satisfaction. Why take chances on inferior stock?

AVOCADOS

We still have a few extra fine field grown trees of the recommended varieties ready for immediate delivery.

FEIJOAS

Every garden should contain at least two plants of this delicious fruit. Will grow any place in California. Send for our new descriptive price list.

The R. M. Teague Nurseries

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Founded in 1889 by R. M. Teague



Your Soil Needs Humus and Nitrogen Bacteria

Melilotus Indica Supplies Both

Now is the time to plant it. Buy only seed that has a quality test tag on every sack. It protects you against seed of low germination. Buy from your local dealer or from

Aggeler & Musser Seed Co.

Look for the Tag

Los Angeles, Cal.

"FOR THE LAND'S SAKE" USE

A. C. W. FERTILIZERS

By buying fertilizers on a unit basis and not a cost per box basis, you are losing a money making, labor saving, crop increasing advantage.

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Los Angeles, Cal.

The California Cultivator issues
from 24 to 48 pages weekly
and only costs One
Dollar Yearly

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Guavas and Almonds

What should I do to make guava bushes three years old bear fruit? They flower well but no fruits set. Do almond trees bear when only one tree is in the garden?—E. L. S., North Glendale.

Guavas do well throughout the Glendale district and each year we have seen fine crops there and heard no complaints of non-bearing. The writer had 60 guava bushes at North Glendale one year and all bore well. They were irrigated every 15 days. Almonds are shy bearers except in favorable sections and under favorable conditions. Nearly all varieties are self-sterile or bear very little if of one variety, no matter how many trees are present. Almonds do best in light, loose soil. They need some irrigation in summer, but if drainage is not good heavy irrigations are fatal. Yours is not a good section for almonds.—E. B.

Granite Bedrock at Escondido

Is granite bedrock around Escondido?—Subscriber, Escondido.

"Water Supply Paper 446 of the U. S. Geological Survey" gives answer to this question as follows: "The formation that lies at the surface over the greater part of the Escondido basin is residuum popularly known as decomposed granite. It extends to depths of from 40 to 100 feet and is underlain by solid granite. We may add that the geological survey, or, rather, the "Superintendent of Documents, Government Printing Office, Washington, D. C.", will supply at one dollar per copy above referred to publication and accompanying maps.

Oleander Poisonous

Would like to know if the flower of the oleander is poisonous to the human being.—Subscriber, Ventura.

We have no definite statement as to the flower being poisonous, but presumably it is. Leaf and branch have been known to cause death and that all too often. Arizona has made investigation as to effect of oleander poisoning on livestock. In one case 25 grams of green oleander leaves were given to a horse in capsules. The following morning the animal was dead. Another case is mentioned where a soldier used an oleander branch freed of its bark as a skewer. Twelve soldiers ate of the meat and seven died. The only official document we have touching upon oleander poisoning is the bulletin from which these facts are taken, No. 59 of the University of Arizona experiment station, "Oleander Poisoning of Livestock." It was published in 1909.

Fence Laws

Some time ago I saw an article—think it was in the Cultivator—where it said that the fence laws had been set aside and that there was a commission to draw up new laws to be presented for passage next session. If such was the case would like to know what issue that was in. Would also like the names and addresses of the commission.—Subscriber, Galt.

Subscribers often wish information as to the fence laws of California. At present they are in such a muddle that it is impossible to give very definite information. The supreme court some months ago set aside the law which was acceptable to the livestock people. We believe the whole matter has now been taken up by the agricultural legislative committee, a committee of representatives of various livestock, fruit growers and farmers organizations. This committee has as secretary and executive officer R. N. Wilson, with offices at 312 Ochsner Building, Sacramento.

Measuring Hay in Stack

In your issue of July 31 you give two rules for measuring hay in stack. Rule 1, as you say, is accurate for small squat stacks, but for some reason that I have not discovered is away off on big stacks. The so-called government rule is not accurate, so far as I can discover in any case. I submit herewith a rule that I have always

used and found accurate under all circumstances.

From the "over" subtract the width and divide the remainder by two, which will give the height that the stack would be were it flattened down so as to be shaped like a brick. This is always true, no matter how tall the stack nor how wide. Having ascertained the height, width and length of the stack, it only remains to multiply together the three dimensions and divide by the number of cubic feet in a ton.

For example: Suppose you have a stack 20 feet wide, 60 feet over and 50 feet long. 60—20 equals 40 divided by 2 equals 20.

You have now a stack shaped like a brick. Multiplying its dimensions, we have 20x20x50 equals 20,000 cubic feet; 20,000 divided by 512 equals 39.14 tons.—Henry Nelson, Chico.

TO TRY MARKETING CATTLE AT AUCTION

One of the most important undertakings in the recent history of the California cattle industry will be inaugurated on September 1, when the farm bureau of Nevada County, acting in cooperation with the California Cattlemen's Association, will hold an auction sale of prime cattle at the Lime Kiln Ranch near Grass Valley. This will be followed on September 4 by a similar auction sale of prime cattle at Big Meadows near Chester, in Plumas County.

For months cattlemen up and down the state have discussed these auction sales as one means of stabilizing market conditions, especially for the small producer. It has been stated repeatedly by prominent cattlemen that with proper cooperation from the buyers these auction sales would give the small producer a chance to get prevailing market prices for his cattle instead of being compelled to dispose of his entire herd at feeder rates to some buyer who made a practice of meeting the cattlemen as they were coming out of the national forest. It has been alleged that such buyers were in the habit of quoting feeder prices for an entire herd, and then grading the cattle and selling off the prime steers at a heavy profit, while the real feeders in the herd would be sold for at least as much as the buyer had paid.

Under the system of auction sales a cattleman can have his herd graded by an impartial expert, and the prime cattle will then be sold as such. This should give the cattleman a reasonable margin on his fat stock, while the feeder will still be marketable for as much as could be got from the type of buyer that has in the past absorbed these small herds.

President F. H. Bixby of the California Cattlemen's Association and several of the directors will attend these sales. All of the packers have been requested to send buyers and the outcome will be watched with great interest by cattlemen.

WANTED

Pear Blight Expert

Steady Work

Send Recommendations to

James Mills Orchards Corporation

Hamilton City California

SPECIAL SALE OF

Purebred Berkshire Hogs

to eliminate entire breeding herd at Whittier State School, Whittier, Cal.

Leader's Invincibella 2nd, 1st prize aged sow Los Angeles Livestock Show, 1919.

Two nine months boars out of Leader's Invincibella 2nd by Byron Rookwood 2nd, grand champion boar.

Grape Wild Chief, 3 year old boar. Junior Champion boar pig Los Angeles Livestock Show, 1918.

Young gilts and boars and brood sows at little more than pork price.

Cattlemen Plan Important October Meeting



THE California Cattlemen's Association has taken the initiative in a movement of vital interest to stock producers throughout the Western states. A letter has been sent by Secretary David J. Stollery to officers of cattlemen's associations in Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Washington, Wyoming and Utah, proposing a conference of delegates from all the associations and suggesting that this conference be held in Salt Lake City on October 28, 29 and 30. The letter, after naming the states, says in part:

"The above named, while representing in number one-fourth of the states, run nearly one-third of the cattle of the country, although in population they comprise but about one-tenth of the inhabitants of the United States. Their contribution, therefore, to the nation's food supply is tremendously in excess of their own requirements.

"Each season there is a scurry to the Eastern and Middle Western markets of surplus cattle, and until now no concerted effort has been made to gauge the demand and furnish the supply to more nearly accord with it. It is this thought which prompts the suggestion by the California Cattlemen's Association that a conference of all of the officers of the cattlemen's associations of the 12 states mentioned be called within the near future to give consideration to and, if deemed practical, act upon the following suggestions:

"A plan of action whereby a seasonal surplus supply of cattle from the various states can be gauged.

"The preparation of a schedule by which a more steady supply of cattle would enter the various Eastern and Middle Western markets.

"National legislative matters pertaining particularly to federal financial aid.

"Enactment of state or federal legislation toward the eradication of tuberculosis in range cattle and the elimination of tubercular cattle entering our markets.

"Action tending to withhold from prime cattle markets half fat cattle and feeders.

"Prevention of gutting other states with feeders.

"A closer cooperation between the state associations with respect to feed and other conditions.

"Effort to reestablish the branch offices of the U. S. bureau of markets.

"Policy of a campaign having as its object stimulation of beef consumption."

It has been realized by cattlemen that no one state could solve its local problem without the cooperation of other states whose cattle came into competition. For instance, Nevada, Utah and Arizona cattle have an important influence on the California market. California cattle have influenced the Portland market by a number of shipments this season. California cattle have come into competition with other states at Omaha, Kansas City and even Chicago. Out of this conference it is hoped will come a definite program whereby each state can dispose of its surplus cattle at reasonable prices without injuring the market for other states. Marketing

unquestionably will be the most important subject considered by the conference.

DUROC BREEDERS APPOINT FIELD MAN

At a recent meeting of the directors of the California Duroc-Jersey Breeders Association an important step in the promotion of that breed was made with the appointment of Dr. L. J. Anderson as field man for the association.

Dr. Anderson has been teaching agriculture in the high schools of Eldorado County for the last three years and his success in establishing pig clubs has been of such high order that his work attracted wide attention. Anderson was largely responsible for the selection of the Duroc breed for most of the pig clubs.

The association expects its new field man to spend all of his time in the field in constructive effort to widen the popularity of the breed he represents. His services will be at the disposal of all breeders and farmers and ranchers who are interested in Durocs. He will also assist in the organization of pig clubs, local associations and sales. Anderson has started his new work by mapping out a program for greatly enlarging the membership of the state association.

LOS ANGELES LIVESTOCK SHOW

Manager Thomas is making every effort to bring off one of the greatest events of the Pacific Coast to be held in Los Angeles, October 2-10. Every feature of the livestock industry is under consideration and every breed is making effort to do itself proud. Angora goats have received an especially strong boost because of exhibits from

one of Texas' largest ranches. The owner, who has a nation wide reputation, is now in Los Angeles making preliminary preparations. Manager Thomas says:

"Our show is no longer a local affair; it is being supported by breeders all over the United States who are looking toward California as the ideal place in which to operate. Several entries from North Carolina and Illinois are promised. Requests for space are pouring in so fast that I would urge upon all exhibitors to enter early, by September 5 at latest, so that we may arrange our building program to provide suitable display space for everyone."

NUMBER OF FARMS IN CALIFORNIA

(Continued from Cover.)

matter of increase, however, is the Colorado desert, Imperial County. In 1900 the inhabitants consisted of a few engineers, a few mule drivers and their teams. In 1910 Brawley showed a population of 881. The next ten years showed an increase of 512 per cent, or a total of 5,392. Calexico in 1910 had 797 which was increased to 6,332 in 1920, or a total increase of 680.8 per cent. As yet we believe the returns have shown no town with so great a percentage of increase. There are no towns more typically agricultural than are these in Imperial Valley.

EVIDENTLY NOT

Bess: "Somebody passed a counterfeit dime on Bob a year ago and he hasn't been able to get rid of it since."

Maiden Aunt (horrified): "What! Does that young man never go to church, then?"—St. Paul Dispatch.

Nevada Hereford Ranch

A Tuberculoiss Free Herd

Sells at Sacramento, State Fair Grounds, November 5

50---Lots of Grand Young Herefords---50

30 Two Yr. Old Bred Heifers

10 Cows, Most of Them With Calves at Foot and Rebred

5 Open Heifers and 5 Bulls

As this will be our first public individual offering at auction, we are endeavoring to make a good, sound sale and to present a quality of cattle that will establish our future business.

Featuring Our Harris Standard 2nd Heifers Bred to our \$10,000 BEAU BLANCHARD 76TH

Study this Pedigree of Harris Standard 2nd

HARRIS STANDARD 2nd No. 425030. Calved Feb. 24, 1913.
Bred by Cyrus A. Tow, Norway, Iowa.

SIRE Standard No. 325950.	Bonnie Brae 8th... No. 239653.	Publican No. 189221.	Paladin 126248 Pretty Lady 16 58707
	Tulip No. 239087.	Dulcinea 12 No. 194322.	Paladin 126248 Dulcinea 3d 68609
	Disturber No. 139089.	Excel No. 111229.	Kansas Lad Jr. 75104 Pretty Face 3rd 76908
	DAM Disturber Lassie 4th... No. 348146.	Lady Wilton's Incomparable..... No. 130145.	Pride of Evergreen 51882 Lady Wilton 71 58386
		Beau Donald 3rd .. No. 86140.	Beau Donald 58996 Cinderella 61043
		Columbia No. 76779.	Columbus 51875 Rose Blossom 39225
		Prime Lad No. 108911.	Kansas Lad Jr. 75104 Primrose 80150
		Pretty Lassie No. 160150.	Star Grove 17 26590 Pretty Face 5735

Note his ancestry—he has every right to be a good one. Sired by Standard, who stood second at the International Livestock Show at Chicago 1912, he by Bonnie Brae 8th, Sr. Champ. at International 1908. Dam Disturber's Lassie 4th by Disturber. Second dam by Prime Lad, and one of the best producers of the Great Disturber family, being dam of the \$35,000.00 Repeater's Model and is still producing high quality calves in the Col. Taylor herd of Kentucky. We value him very highly as a good, consistent sire. Our entire show herd of the last two years were sired by him and in the "Get of sire" class he has been undefeated. He is a big rugged fellow, showing excellent Hereford character, with extra heavy bone and is absolutely one of the easiest keepers we have ever owned or seen.

We have used him too heavily to make a great show record, but the one time he was shown as junior yearling, 1914, he made a most creditable showing. He won 3rd Iowa State Fair, 2nd at Nebraska State Fair, 2nd at South Dakota State Fair, 2nd at Interstate Fair, Sioux City, Iowa, and 4th at Missouri State Fair. There was no show at Kansas City or Chicago that year.

A few of those Harris Standard 2nd heifers bred to Beau Blanchard 76th would make a valuable addition to your herd or will start you in the Hereford business right.

Write for particulars about our sale cattle and cattle we are offering here at the ranch. See Beau Blanchard 76th and our show herd at The State Fair, Sacramento, Sept. 4 to 12.

Pacific Coast Hereford Breeders Sale Nov. 4th, H. M. Barngrover's sale Nov. 6th at Sacramento.

Jno. H. Cazier & Sons Co. Wells, Nevada
Otis Cordell, Herdsman

McCarty --- Shinn --- Elliott

50 Strictly Big Type Poland Bred Sows---Gilts---Boars

Tulare, Cal.

September 27

A Statement of Facts

There is slight question but that the forthcoming sale of selected tops from the herds of Hugh Shinn, A. D. McCarty and A. J. Elliott will constitute the most desirable offering of modern Poland Chinas yet to be offered in the West. The offering is especially attractive to the breeder and the farmer. The blood lines represent most of the popular lines and individually the offering is of a character that will prove a surprise to all. They have been exceptionally well grown and properly developed. The offering is sired by such noted boars as The Pilot, Kansas King, King Jones Over, The Californian, Hercules and others. Those bred will carry the service of The Westerner, The Californian, Hercules Jr., The Argonaut and Orange Giant.

Californians can look forward to this sale with complete assurance that there is no need to go East for breeding stock. Farmers and ranchers will make no mistake in adding a few such animals to their herds. They are the kind that make a profit year in and year out. That 1920 will be a profitable year for pork producers is generally conceded. Now is the time to get ready.

Watch the Cultivator for further details.

(Signed) Parke Bennett, representing the Cultivator

See Them at the State Fair and the Tulare Livestock Show

For Catalog Write Hugh C. Shinn, Tulare
Auctioneers: Col. Geo. W. Bell and Fred Gatewood

Lookingbill's Big Livestock Sale

In our big initial sale at our Stockyards Sale Pavilion at Pomona on August 17 we put under the hammer a grand total of \$10,000 in livestock values.

First 25 head of high grade dairy cows made average of \$166 per head, with top price of \$330. Young registered Holstein bull, \$585.

Top lot of 40 young grain-fed Poland China hogs at \$17.50 per cwt. Lighter lot of 50 at \$15.90. Feeders, \$14.50.

Big commission sale booked for our yards at early date. For information address:

Col. W. C. Lookingbill, 539 E. Pasadena St., Pomona, Cal.



Lendorris Liberty Bond, Skyrocket and Lendorris Liberator

Three good sons of three good sires are our herd boars. We will have a few representatives of our herd on exhibit at the state fair. When in need of choice Poland China breeding stock, write for our prices. You will find them very reasonable.

W. L. Haag and Son **Hanford, Cal.**

THE SEQUOIAN

A yearling Poland China boar of strictly big type breeding that carries the size, stretch and quality so much desired by the breeder and feeder.

Write for prices and information on most anything in the way of breeding stock.

Z. M. Dickey

Dinuba, Cal.



Do You Know?

That The Westerner is a half brother to the sire of Caldwell's Big Bob, Grand Champion at the National Swine Show in 1917.

The Westerner heads a herd of sows that have no superior on the western coast.

Remember our big public sale Sept. 27th. It will be an event in Poland China circles.

ALEX. D. McCARTY

RIVERINA FARMS

MODESTO, CAL.

Victory Bob, the Greatest Son

of the grand champion, Giant Bob, heads the Sunland herd of Poland Chinas. I will be glad to meet you and show you Victory Bob at Sacramento, next month.

H. A. Johansen

Fresno, Cal.

McCune's Quality Herd

of BIG TYPE POLAND CHINAS

The home of Edith Rose, King's Massive Orange and many other noted individuals. A McCune bred Poland China is backed by many generations of the best breeding.

H. D. McCUNE,

Lemoore, Calif.

King's Big Bone Leader

A Grand Champion, and Giant Bob 2nd, a son of last year's Grand Champion, are my herd boars. They are siring a high class of Poland Chinas. Write for prices and information.

Les McCracken

Ripon, Cal.

Trehwhitt's Big Type Polands

Are the result of careful mating and selection. Size and feeding quality have always been essential features in this herd. Write for prices and information. I can interest you.

W. D. Trehwhitt

Hanford, Cal.

The Forrestview Herd of Polands

I am now located on my new place near Chico, where I am better prepared than ever to care for my customers. My intention is to raise more and better Poland Chinas in the future.

J. H. Cook

Route 4, Chico, Cal.

The Eastman Ranch Poland Herd

Herd headed by Regulator, by Liberator and Buster Bob, by Belmont Buster. See Buster Bob at Sacramento. A few young animals for sale at all times. Satisfaction assured.

H. L. Graham, Mgr.

San Fernando, Cal.

The Get of Model Big Fellow

The Reserve Grand Champion of the last state fair, the strongest Poland show ever held in the state, are the kind to buy. Your correspondence solicited.

J. F. McSwain

Merced, Cal.

130 CALIFORNIA BOYS ATTEND OREGON AGRICULTURAL COLLEGE

(Continued from Page 245.)

The instances above are the only two concrete examples of the difference, if any, which may exist between the two colleges. Personally, I would much prefer to attend the University of California in order to get acquainted with the people of my own state and the particular problems and conditions thereof.

As to the greatest weakness of the college of agriculture, I would not attempt to point it out, never having attended there. However, I might say that at the Oregon agricultural college the practical and theoretical work is well linked up together. The barns and fields are adjacent to the college campus—not far away in another county.

Also, the professors of the college are in close connection with the farmers in all parts of the state, helping to solve their fertilizer problems, laying out their drainage systems, organizing cooperative associations for various purposes and looking into diseases of crops or stock.

I hope this letter will not be received as destructive criticism, but as a friendly suggestion.

Charles Hartmann Jr., Hollister

Look these points over and reason it out for yourself. You may find some truth in the following:

O. A. C. ranks very high as an agricultural college because of the courses it offers, the excellent way they put things over, individual instruction, and becoming personally acquainted with your instructors, who are always glad to have you call and straighten out your difficulties. They couple their theory and practical work so the student can grasp things easily. The student body itself is superb, and everywhere you hear the familiar "Hello," the sound of democracy.

At U. C. the classes are generally so large that the instructor has not the time to reach the students with personal instruction or individual attention.

The enrollment is so large that little is cared whether you stay in college or not. Some students do not grasp things readily and are slow to get on to college teaching. If they "stick" they have a hard pull. These two points offer no encouragement to the students. All students don't go to school under the same conditions. Since wages are high, we do not find so many going to college. With one try their opportunity to get a college education is lost.

There is the disadvantage of having to go to Davis to get your practical work after you get your theory at Berkeley. This in itself is a disadvantage and self explanatory.

R. A. B., Red Bluff

I will frankly tell you that the cost of attending the California institution is \$400 to \$500 a year more than the Oregon institution. The Oregon institution also, I believe to be a very practical institution. It is not a book school alone; they give the practical work along with the books. It also I believe to be a very democratic institution and better for a poor person to attend.

A. L. O., Taft

My principal reason for attending the Oregon institution is based upon financial obligations. In Oregon the simplicity of customs, splendid opportunities, clean environment, wonderful spirit of democracy and respect for the self supporting tend to encourage the ambitious student who must make his own way through college.

The O. A. C. spirit has won this native Californian away from his home institution.

A. F. Gillette, La Verne

I selected the Oregon agricultural college, as one gets the practical work from the very start in conjunction with the other studies, while at the University of California, where the university and the farm school are separated, most of the work is done at Berkeley and only a portion of the latter two years is devoted to the practical work at the Davis farm. In this way the knowledge gained from the text is not practiced at the time it is studied and thus seems separate, making less impression.

Due to the crowded condition at the

U. of C., one does not get as much personal attention and hardly gets to know the other students outside of his own little circle as he would in the smaller school.

The higher school fees and higher living expenses, due to higher rental and more elaborate style of dressing, makes it more expensive to attend the U. of C. It is also more difficult to obtain work on the side to help pay one's way through.

As the University of California is also so near a large city, there are bound to be the outside attractions to interfere with the school work.

On the other hand, since California pays her instructors better than most states, she is gradually drawing the better men. The other states are finally realizing this and raising their salaries, as in Oregon, through the passage of the mileage tax.

In my case, where I am majoring in horticulture and expect to specialize in citriculture, which I have always followed, a degree from the U. of C. would be a greater recommendation than one from O. A. C., and as long as it is our own state school that we have to help support, I would greatly prefer to attend the U. of C. if the conditions were right.

M. G. Haynes, Corona

I have no fault to find with the courses offered at California, nor with the manner of instruction. I went to the Oregon institution because it cost less, even with the additional railroad fare, and because the Oregon school is more democratic in its campus life than is California. It makes no difference whether a man has an allowance of a hundred dollars a month or nothing, at Oregon, and it certainly does at California. A man working his way through college at Oregon rates as high as anyone else, while at California he is more or less looked down on.

Although I am a member of a national fraternity with a chapter at California, I think that the fraternity proposition can be overdone, and that it is overdone at California.

I cannot overemphasize the matter of cost. It costs too much to hold up your end at California, socially and in many other ways. There are many students attending Oregon at the present time who have been to California for a year or two, and they all have the same cry—"It is too expensive."

Howard Draper, Highland

I believe O. A. C. to be the more practical, not given to research work as much as U. C. having the college farms convenient so that the practical and theoretical may be taught hand in hand.

O. A. C. is a smaller college, hence it follows we have smaller classes and receive more personal attention from instructors. I also believe, because of the large number attending Berkeley, one loses much in personal association.

The cost of living is another item. I understand that \$50 at Berkeley covers mere living expenses, while it costs us \$35. As other expenses are proportional, this is of considerable importance.

BETTER BULLS—AT LESS COST

"All farmers use improved machinery today, but too many dairymen do not use improved, efficient dairy cows, the most wonderful of all farm machines. Why use a grain cradle or milk a scrub cow in these days? Neither is businesslike nor profitable," says Geo. S. Bulkley.

"Really good cows are hard to buy and very high priced. The good dairyman takes no chances of buying in cull cows and abortion, but keeps improving his own herd with good bulls. He makes his herd more profitable every year, and occasional surplus stock brings good money from less businesslike neighbors.

"In 1907 the Iowa experiment station bought several native scrub cows in Arkansas, whose average production was only 3,660 pounds milk. Heifers from these scrubs by pure bred bulls averaged 5,990 pounds milk—a 64 per cent increase. Breeding these heifers to other pure bred bulls gave granddaughters of the old scrubs averaging 8,401 pounds milk, or 2 1/3 times as much. Many dairymen have secured like improvement and others should follow their example.

"We advocate the cooperative bull club because it is the most economical and practical method (especially

Lambert's
HEALTH FOR CATTLE

REMEDIES FOR
Cow Cleaning,
Breeding and Abortion,
Scouring Calves,
Hog Cholera

An Insect Destroyer
A Poultry Food

**LAMBERT STOCK
REMEDIES COMPANY**

A. M. Bibens, H. V. Bridgeford,
President Vice President
Factory: Modesto, Cal.
Mail Orders Promptly Filled

Use Hereford Bulls

The Hereford is the range bull without a peer.

My Herefords have size, bone, constitution and are notably thick fleshed. Visit my ranch and get my prices. Send for free literature.

Mission Hereford Farm

John A. Bunting
Mission San Jose Cal.

DIAMOND G HEREFORDS

A few choice young bulls, Big, heavy-boned husky fellows sired by DON PERFECT 2nd, one of the best sires in the West. Priced right and guaranteed.

H. H. Gable Esparto, Cal.

HAMPSHIRE SWINE

Pure Breds—Both Sexes

—FOR SALE—

Fairview Ranch

L. L. Beal, Proprietor Red Bluff, Cal.

The Leading
Live Stock
Auctioneers

**Col. Ben A. Rhoades
Harold B. Rhoades**

Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References. The leading breeders in the state. Write or wire for dates and terms.

Rhoades & Rhoades

1501-3-5 South Main St
Los Angeles, Calif.

Vaughn's Jones

Is a boar that is siring a high class of **POLAND CHINAS**

good enough for the most discriminating buyer. Come and investigate; can show you.

A. J. Van Cleef, Riverdale, Cal.

**DON'T CUT OUT
A Shoe Boil, Capped
Hock or Bursitis**

FOR

ABSORBINE

will reduce them and leave no blemishes. Stops lameness promptly. Does not blister or remove the hair, and horse can be worked. \$2.50 a bottle delivered. Book 6 R free.

ABSORBINE, JR., for mankind, the antiseptic ointment for Bolls, Bruises, Sores, Swellings, Varicose Veins, Allays Pain and Inflammation. Price \$1.25 a bottle at drugists or delivered. Will tell you more if you write.

W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

Headquarters
for
IRRIGATION
SUPPLIES
PUMPS, ENGINES,
SPRAYERS, HOISTS ETC
Catalog FREE on Request
Smith-Booth-Usher Co.
Los Angeles. San Francisco. Taft.

When writing advertisers, mention the Cultivator.

among smaller herds) of securing the use of high class bulls. It is not a half baked theory but a successful practice since 1874, originating in Denmark. It is also the established practice in Norway, Sweden, Holland and Switzerland; nearly 100 clubs are working in the United States, some since 1908. The writer's experience of over five years with bull clubs in Pennsylvania, where 89 bulls, costing from \$250 to \$2,400 apiece, are now serving the needs of over 400 farmers with complete success, convinces him that this idea has great value.

"This is the plan: One, two or a dozen farmers, living close together, owning a total of 40 to 80 cows, combine to purchase one very high class sire for use on all their cows, instead of each owning and feeding a common bull or a scrub. This group or block forms an association with other blocks, three to five blocks forming a bull club. This club buys one bull for each block, each member paying a share in proportion to the size of his herd; then every two years the bulls are rotated or exchanged. Thus each man's original share of part of the cost of one bull gives him the full use of very good bulls for six to ten years without reinvestment.

"In each block the bull is stationed on one central farm where the other cows are brought for service, the members sharing the cost of his feed. To prevent spreading disease he must be kept separate from the regular herd and disinfected at every service, a cheap and safe precaution. If a member's herd breaks out with abortion he cannot use the community bull for two or three years, until it is cleaned up. Where these rules are followed abortion has not and will not be spread by the bull. Ask your veterinarian.

"Where dairymen share in the purchase and feed of one bull, and continue to exchange instead of buying new bulls, they can use these valuable bulls at less actual cost than common or scrub bulls owned alone. Often a man's scrub bull sold for beef will pay his share in a club to last six to eight years. Besides this, the club gives a chance to test out the bulls, and to use the best tested sires as long as they live establishes one breed in a community, encourages members to study breeding and better methods, to combine to eliminate disease and to form breeders associations for buying, selling and advertising their stock.

"Your county agent, agricultural college and United States department of agriculture experts are available and anxious to assist you in organizing a bull club. We realize that the club idea is not suited to every farm or locality, but if you think there is opportunity for one block in your neighborhood, see your county agent or farm bureau officers about it and they will be glad to locate other blocks, help you to organize and select your bulls and to make it a real success. They can suggest to you constitution and by-laws to cover all details of management. It is understood that the dairymen in the club handle their own business by electing officers and one director for each block, whose duty it is to see that the rules are strictly carried out.

"If you want a more profitable dairy herd, consider this idea and try to make your community lead the county in this progressive movement."

DELIVER THE GOODS CLEAN

Of all the mediums of good sound advertising in the dairy industry there is not one which can excel that of "quality."

When we observe the methods of those who have really achieved in the dairy business we will find in every instance that success was made possible through the application of common sense rules of cleanliness and sanitation.

Clean wholesome dairy products are the best advertisements, and any infraction of these axiomatic first principles will work to the dairyman's disadvantage and render it difficult to repair the damage wrought.

Dairymen are, as a rule, in the business to make a success of it, and there is no single factor that will promote business faster than the production of a clean wholesome product.

Nine Full Days of Big Events

THE LOS ANGELES LIVESTOCK

\$55,000 CASH
PREMIUMS
AND PRIZES

SHOW

\$55,000 CASH
PREMIUMS
AND PRIZES

Exposition Park—Los Angeles

October 2-10, Inclusive

Blooded Stock

BEEF CATTLE—DAIRY CATTLE—
SHEEP—GOATS—SWINE—POULTRY
—PIGEONS—RABBITS

Highest Class Horse Show—Pet Stock Exhibits

**REAL DAYS OF
OLD WEST**

RODEO

Wild Bronco and Bull Riding—Trick
Riding—Relay, Roman, Hurdle and
Charlot Races—

FANCY ROPING AND NUMEROUS OTHER WILD WEST EVENTS

RUNNING RACE CLASSICS—DAILY

FAMOUS SANTA CATALINA ISLAND MARINE BAND

BIG STREET PARADE
SATURDAY, OCTOBER, 2ND

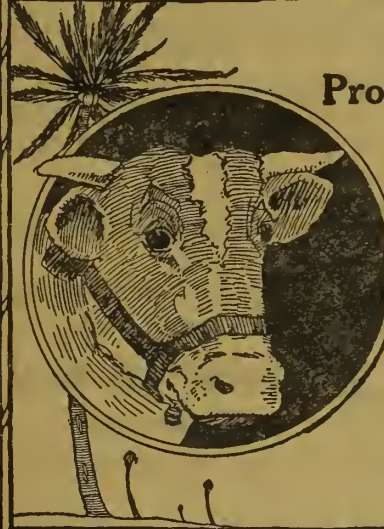
No end of other attractions and
amusement surprises in the great out-
of-doors—

**THE MOST COMPLETE LIVESTOCK
SHOW EVER HELD ON WEST COAST**

CLOSING DATES FOR ENTRIES—LIVESTOCK, SEPT 5th.


POULTRY, PIGEONS, RABBITS, SEPT. 15th. HORSE SHOW SEPT. 15th.

For Premium List or Further Information Apply to C. R. Thomas, Mgr.
Chamber of Commerce Bldg., Los Angeles, Cal.



Do You Want Profit Producing Cattle?

Then feed them profit producing food. Because of the easily digestible protein in COPRO its nourishing value is exceptionally high and the percentage of waste in assimilation is exceedingly low.



is a nourishing, economical, profit producing form of food for cattle and poultry. Mix it with your rations and watch the results. FREE SAMPLE and a copy of our booklet containing valuable information on the subject of "SUCCESSFUL FEEDING," gladly sent on request. Write today. If your DEALER can't quote prices write us direct.

PACIFIC OIL & LEAD WORKS
Manufacturers
155 Townsend St., San Francisco, Cal.

Over Two Million Calves

protected against Blackleg for LIFE with ONE treatment vouch for Purity Blackleg Aggressin (Germ-Free Vaccine made by the Kansas Process). Absolutely safe to use. Cannot transmit disease. Brand, castrate, etc., when you vaccinate. OTHER PURITY PRODUCTS: Anti-Abortion Vaccine for Cattle; Hemorrhagic Septicemia Vaccine for Cattle, and Sheep; Anti-Hog Cholera Serum, and High Count Mixed Infection Vaccine for Swine. For service that counts write, phone, or wire

PURITY SERUM CO., J. L. Thatcher, Mgr. Riverside, California



Our big young daughters of the old champion Superba run like peas in the pod—like begets like. They are the typical big prospective mothers—will farrow September and October litters got by our big boar, Fortuna Bob. Write, or come and see them.

W. H. ROUGH, Arlington, Cal.

Johnson's Defender Jr.

Heads my herd of carefully selected sows. He should be seen to be appreciated. I can spare a few choice females or young stock either sired by or mated to this good boar. You will be pleased with any purchase made from me.

H. C. WITHEROW

Live Oak, Cal.

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.



SOWS AND PIGS

Receive Great
Benefit

Condensed Buttermilk

Both the sow and pigs receive beneficial return from the feeding of the scientifically prepared LACTEIN—both need the tonic and cleaning properties gained through the LACTIC ACID contained to the highest degree in LACTEIN. It affords perfect digestion for both the sow and pigs—LACTEIN produces MORE milk for the sow, and supplies the animal food necessary to prevent "pig eating" of the sow. Start your sows and pigs on LACTEIN TODAY—economy, efficiency and results will make themselves quickly known in the wonderful improvement. When you invest in LACTEIN you are investing in pure added profit.

Ask Your Dealer for LACTEIN Today

LACTEIN CO.

—Main Office and Factory
Modesto, Cal.



Allana Farm, Dixon, Cal.

—Sells—

40---Registered Holsteins---40

at Public Auction

Thursday, September 23, 1920

This sale is held to adjust the existing partnership between J. P. and W. W. Phillips, and will include the entire herd excepting only one heifer and a few heifer calves.

Sir Pietertje Korndyke Ormsby

the first son of Sir Pietertje Ormsby Mercedes ever offered at public sale in the west will be a star attraction, and an opportunity for some owner of a high class herd to secure a son of the greatest sire of long time producers and show winners yet developed in any breed.

Catalog of sale on request.
Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Calif.
Auctioneer—Col. Ben A. Rhoades, Los Angeles.

Berylwood Holsteins and Durocs

At head of our herd of high-testing Holsteins is the great young sire King Segis Pauline Alcartra 282440. We are now able to offer his young bulls from very select dams.

Rancho's King's Col. Orion 286401 is our big-type boar in service. He is sire of all our spring litters. We also have now to offer some extra good fall boars of Great Model, Grand Model, and Ireland's Joe Orion blood lines. Correspondence solicited; also invite inspection at the ranch.

BERYLWOOD INVESTMENT CO.

J. W. Snodgrass, Mgr.

Hueneme, Ventura Co., Cal.

King Korndyke Pontiac Mead

Average of his Dam and Sire's Dam (Both Former World Record Holders)

At Average Age of 4 yrs. 2 mo. 10 dys.

Semi-Official, 365 Days

Official Test, 7 Days

1062.64 lb. Butter

21173.75 lb. Milk

31.91 lb. Butter

615.60 lb. Milk

His Sire—King Korndyke Pontiac 20th

His Dam—De Kol of Valley Mead 2d

Four of his seven nearest Dams have held World's Records

LOS ANGELES COUNTY FARM

Hondo, Cal.

3 miles south of Downey on Downey-Long Beach Boulevard



Sunny Side Farm

where efficiency is our watchword and the production of extra heavy milking Holsteins and big type Poland Chinas is our specialty. A few choice animals of either breed or sex for sale at all times at reasonable figures. Write for information.

R. F. Guerin

Visalia, Cal.

The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

Stanislaus Holsteins Average \$380 at Patterson Fair

The sale of Holsteins held at the Patterson fair, August 21, under the auspices of the Stanislaus County Holstein Breeders Association, resulted in the very satisfactory average of \$380. The sale consisted of the selected tops from a number of the leading herds in that county. The cattle were all entered in the regular classes and the sale held after the animals had been passed on by the judge.

The top of the sale was reached with the attractive heifer, Rag Apple Prilly Alcartra, from the Bridgford Company's herd, that went to Joe Ruddy of Modesto for \$875. The second highest priced female was the six year old cow, Mechtilde Ormsby 2d, consigned by R. L. Holmes and purchased by Mrs. B. F. Fox of Modesto for \$800. Princess Cornucopia Prilly, consigned by Bridgford, fell to the bid of Azeveda Bros. of Patterson for \$790. Ella Josephine Skylark Countess topped the consignment of A. M. Bibens at \$560. Erma Wietske Maid was the top of the Cornwell lot, going to H. A. Steimerjohan for \$385. Irene Beauty, a six year old cow, with 603 pounds of butter in nine months as a four year old, led the Peterposten consignment and was taken by

11, Johanna Segis Abbekerk, March, 1920; Azeveda Bros., \$325.
12, Rag Apple Prilly Alcartra, October, 1918; Joe Ruddy, Modesto, \$875.

Consigned by E. Peterposten, Hughson
13, Alma Goldstone Pietertje, October, 1914, 22.95 lbs.; Glen Shirk, \$475.
14, Sir Paul De Kol Colantha Segis, bull, April, 1920; A. Foster, Patterson, \$110.

15, Hermiana Roma Colantha, September, 1919; David Hoffer, Patterson, \$255.
16, Hermiana Irene Walker, October, 1918; A. M. Bibens, \$530.

17, Irene Beauty 2d, October, 1919; Azeveda Bros., \$375.
18, Irene Beauty, November, 1914, 603 lbs., nine months; Dixon & Dixon, \$625.

Consigned by E. E. Freeman & Edwards, Modesto

19, Inka Escudo Seniorita, January, 1919; A. M. Bibens, \$575.
20, Bull, February, 1920; J. A. Borges, Patterson, \$105.

Consigned by R. H. Davis, Modesto
21, Aaggie Holland Walker, June, 1917; H. E. Cornwell, \$600.
22, Sir Aaggie Holland Colantha, bull, May, 1919; J. G. Follis, Patterson, \$150.

Consigned by D. & H. Rowles, Modesto
26, Bull, Golden West Silver Segis, July, 1919; Frank Borges, Patterson, \$225.
27, Golden West Silver Burke, February, 1920; John Saxer, Modesto, \$205.

Consigned by J. A. Pelanda, Modesto
28, Pelandale Brinka Hengerveld, May, 1919; E. S. Gleason, \$210.
29, Brinka Hengerveld De Kol, March, 1915; Dixon & Dixon, \$400.

30, Bull, Pelandale Hengerveld Posch, September, 1919; C. A. Flippin, Patterson, \$205.

Consigned by J. D. High, Modesto
31, Highland Belle Colantha, June, 1918; N. W. Thompson, Patterson, \$375.

Consigned by James Gibson, Modesto
34, Pauline Pride Segis, February, 1920; E. E. Freeman, Modesto, \$150.
35, Pride Segis Pontiac, February, 1920; R. S. Hull, Modesto, \$130.

Consigned by M. J. Ruddy, Modesto
36, Roxana Creamcup, July, 1918; D. G. Coelho, Ceres, \$500.

Consigned by Walter K. Adams, Modesto
37, Helfer calf, April, 1920; H. F. Dearling, Patterson, \$105.
38, Helfer calf, June, 1920; Azeveda Bros., \$110.

Consigned by R. L. Holmes, Modesto
39, Bull, Holmes King Lillian Walker, January, 1920; C. Wright, Patterson, \$125.
40, Lady Korndyke of Sylvan Irls, August, 1918; F. Klutz, Patterson, \$690.

41, Mechtilde Ormsby 2d, January, 1914, 17.56 lbs.; Mrs. B. F. Fox, \$800.

Consigned by John Saxer, Modesto
42, Duchess Colantha Winnie, November, 1918; A. A. Pearson, Patterson, \$330.

HOW THEY GOT BY

"It's a mighty good thing," said Uncle Eben, "at de Ten Commandments was handed down direct, instead of bein' 'bliged to go through de hands of a lot of committees."—Washington Star.



How a Purebred Holstein Bull Will Make Money for You

The Iowa Experiment Station recently conducted an experiment under the direction of Prof. L. S. Gillette. A purebred Holstein bull was mated to scrub cows and the resulting heifers were bred to another purebred Holstein bull.

Here's what happened—Dams average yield, 3255 lbs. of milk, 161 lbs. of fat.

Daughters average yield, 6313 lbs. of milk, 261 lbs. of fat.

Granddaughters average yield, 11,295 lbs. of milk, 431 lbs. of fat.

In other words, the daughters of the purebred Holstein bull averaged:

94% MORE MILK

62% MORE FAT

than their dams, and his granddaughters averaged

245% MORE MILK

163% MORE FAT

than the original scrub dams.

The short cut to greater dairy profits is a purebred Holstein bull.

Think it over!
Send for free booklets.

THE HOLSTEIN-FRIESIAN ASSOCIATION
120 Hudson Street
Brattleboro, Vermont.

FAIR DATES

California State Fair, Sacramento, September 4-12. Secretary Chas. W. Paine.

Tulare County Livestock and Agricultural Show, Tulare, September 14-18. Secretary John A. Rollins.

San Fernando Valley Fair and Market, Owensmouth, September 15-18. Secretary Chas. L. Schufeldt.

Kings County Fair, Hanford, September 21-25. Secretary Frank C. Russell.

San Diego County Fair Bureau Fair, San Diego, September 22-25. Manager Ed. Davidson.

Ventura County Fair, Ventura, September 22-25. Secretary L. P. Hathaway.

Glenn County Livestock and Agricultural Association, Orland, September 27-October 2. Secretary E. A. Kirk.

Fresno District Fair, Fresno, September 28-October 2. Secretary Walter C. Ficklin.

San Diego County Fair Bureau Fair, San Diego, September 22-25. Manager Ed. Davidson.

Shasta County Fair, Redding, October 1-2.

Los Angeles Livestock Show, Los Angeles, October 2-10. Secretary C. R. Thomas.

Siskiyou County Fair, Yreka, October 5-9. Secretary Claude R. Gillis.

Orange County Fair, Huntington Beach, October 7-9.

Southern California Fair, Riverside, October 13-19. Secretary W. W. Van Pelt.

Northern Arizona Fair, Prescott, October 14-16.

Western Royal Livestock Show, Spokane, Washington, November 1-5. Secretary Bert L. Hilborn.

Pacific International Livestock Show, Portland, Oregon, November 15-19.

Dixon & Dixon of Hughson for \$625. A two year old daughter of the last named cow went to Bibens for \$530, and a second daughter, a yearling, was sold to Azeveda Bros. for \$375, and her 1920 calf fetched \$110. Inka Escudo Seniorita topped the Freeman lot at \$575. H. E. Cornwell got the pick of the Davis entries at \$600.

The sale was held before a large crowd of fair visitors. Auctioneer Geo. A. Gue of Washington was assisted in the ring by Col. Cy N. Clark of Modesto.

A complete list of the sales follows:

Consigned by A. M. Bibens, Modesto

1, Hazelwood Skylark Ormsby, Jan., 1919; N. Franz, Patterson, \$300.

2, Skylark Seniorita Pet, May, 1919; Glen Shirk, Modesto, \$500.

3, Ella Josephine Skylark Countess, March, 1918; Mrs. B. F. Fox, Modesto, \$560.

4, Princess Ignaro Netherland, October, 1918; E. F. Gleason, San Juan, \$410.

5, Aaggie Irene Hermiana Countess, December, 1918; H. A. Steimerjohan, Turlock, \$500.

Consigned by H. E. Cornwell, Modesto

6, Holland Morella, August, 1918; A. M. Bibens, Modesto, \$380.

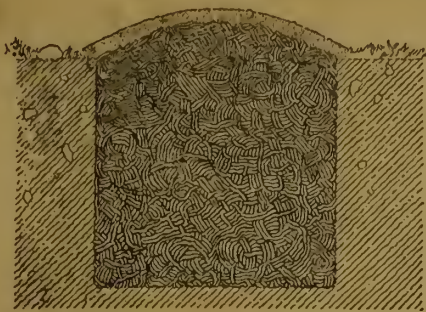
7, Erma Wietske Maid, July, 1918; H. A. Steimerjohan, \$385.

Consigned by Bridgford Holstein Co., Patterson

8, Princess Cornucopia Prilly, July, 1919; Azeveda Bros., Patterson, \$790.

9, Ros Buttergirl De Kol Pledge, February, 1919; Azeveda Bros., \$650.

10, Unnamed, March, 1920; C. F. Gleason, \$300.



OLD ROMAN PIT SILO

Everyone would select the superior article if he would only compare it with the inferior one. That is why we really want you to compare the PAPEC with other ensilage cutters.

Did Horatius Own a Silo?

Every schoolboy knows the story of Horatius, the brave Roman, who, single-handed, held the Tiber bridge against an entire army, and so saved the city of Rome. As a reward for his courage, Horatius was given a large farm. No doubt, he built a silo as many other Roman farmers had done.

The old Roman pit silo, inefficient and crude, was nevertheless a means of preserving feed. Modern science has greatly improved upon the idea, and has dictated the following requirements for the perfect silo:

It must be air tight. The walls should be round, smooth and perpendicular in order that the silage may settle evenly without forming air pockets. The entire structure must be strong enough to resist pressure from within and high winds.

The Simplex Silo is air tight because there are no end-joints to leak air. The one-piece staves of Clear Oregon Pine (a wood noted for its smoothness) make an ideal inner wall, proof against air pockets and honey combing.

The Crissell Tangent Top keeps the Simplex always in a true circle. The steel hoops prevent damage from inside pressure. The Patented Interlocking Anchorage System binds the Simplex to its base so rigidly that nothing short of a cyclone can move it.

Because it complies with all of these requirements instead of only a few of them, agricultural experts have pronounced the Simplex "scientifically correct." Ask yourself the question—"Why should I own any other kind?" Then answer it.

**Modern
Simplex Silo**
"Scientifically Correct"

Santa Fe Lumber Co.

16 California Street

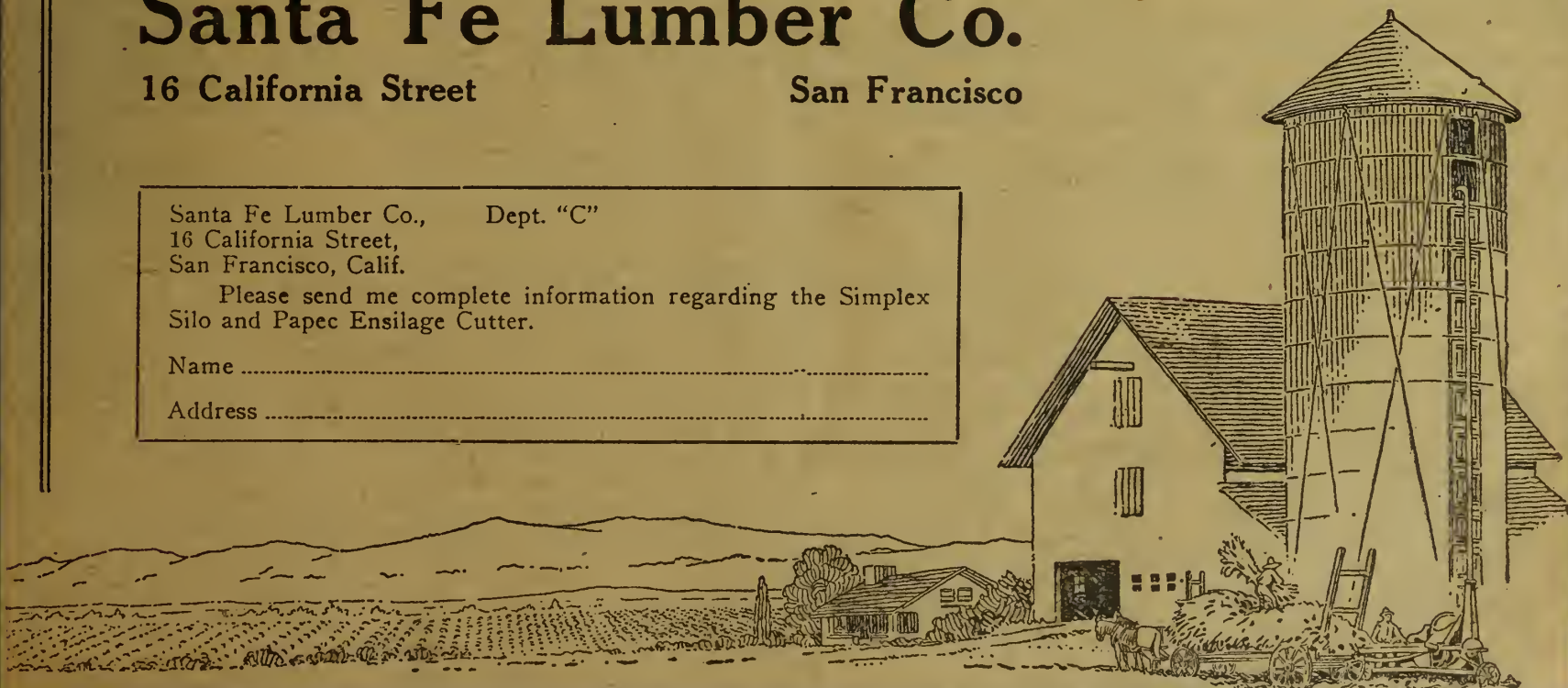
San Francisco

Santa Fe Lumber Co., Dept. "C"
16 California Street,
San Francisco, Calif.

Please send me complete information regarding the Simplex Silo and Papec Ensilage Cutter.

Name

Address



Anchorage Farm

Orland, California

extends a most cordial invitation to all who attend the California State Fair, and who are interested in better hogs, to visit our exhibit of

BERKSHIRES

This is our first exhibit at Sacramento though we have been engaged in breeding Berkshires for the last four years. Our showing will consist largely of the blood of the noted STAR LEADER, junior and reserve grand champion at the P. P. I. E., that heads our herd. We will also exhibit our junior herd boar, NATOMAS BARON DUKE, grand champion at the 1919 California state fair and at the California International Livestock Show.

We are especially anxious to meet our many customers and we will be glad to advise with them on any problem of breeding, feeding or management.



May we not look forward to the pleasure of meeting you at our booth?

Italian Vineyard Company

Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

BIG PUBLIC SALE OF BERKSHIRE SOWS AUGUST 14TH

Alex. Wilson, Supt., Guasti, Cal.



Our age boar Royal Longfellow 5th is just about as good a boar as any at the age of five years. He is a sire, too. Not many stand on four good feet with the large bone, and length and smoothness he has at the age of five years.

It will pay you to pay us a visit. Reasonably priced stock for sale.

Livestock Insurance

The fall fair and exhibition season is at hand. THE HARTFORD LIVE STOCK INSURANCE COMPANY will insure your show stock (horses, mules, jacks, cattle, registered milch goats, and registered swine) against death from any cause, while at home or on the road, including the hazards of transportation. Policies broad and liberal; rates reasonable—yet adequate to insure prompt settlement of claims. Before shipping see the Hartford Agent in your town or address

Roland C. Drake, Asst. Gen. Agt.
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Los Angeles, Calif.

Leland M. Bell, Special Agent,
Hartford Building,
San Francisco, Calif.

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Spokane, Washington.

ALAMO HERD
(Founded by the Late Gov. Sparks)
Registered Herefords
Herd and range bulls reasonable.
Largest Hereford Herd in California.
W. D. Duke, Gazelle, Siskiyou Co., Cal.

Hereford Farms

Geo. Watterson, Owner
Bishop, Inyo County, Cal.

Anxiety, Repeater, and Bonnie
Brac breeding. Bred and raised on
mountain range.

CLARK, HUNTER & CLARK

The Livestock Auctioneers

Sales made any time and any place. Write for sale dates, we can fill them.
Clark, Hunter & Clark Modesto, Cal.

Rising Demand for Horses and Mules on Big Markets

In spite of unfavorable business conditions during the spring months and the fact that building has been very largely at a standstill this season, demand for horses and mules has shown a substantial increase over the first six months of 1919, reports the Horse Association of America. This indicates that business men in the cities have been studying costs of transportation and are increasing purchases of horses and mules which are decidedly the most economical on all short haul heavy traffic and on frequent stop routes, regardless of length. This increase in demand is not a matter of estimate or guesswork. The actual records from the large markets show increases in horses and mules handled during the first six months of 1920 over the first six months of 1919 as follows: Fiss, Doerr & Carroll Co., New York, 4,445 head; Union Stock Yards, Omaha, 5,011 head; Grand Island, Nebraska, Horse Market, 1,451; East St. Louis National Stock Yards Horse and Mule Market, 3,765; Union Stock Yards Horse Market, Chicago, 3,863; Kansas City Stock Yards Horse and Mule Market, 15,482; making a total net gain on the six markets of 34,017.

Farmers may well give heed to these figures. With the increasing demand for horses and mules, and with the greatest shortage of foals and year-

lings in proportion to total horses in existence that has ever been known, there can be but one outcome. Good horses and mules are certain to increase in value, and men who expect to purchase farm work horses will soon wish they had bred their own replacements.

The most serious factor in the present situation is shortage of good stallions. There is a good supply of jacks, but nearly every community reports a lack of suitable stallions for breeding purposes, and dealers who have been replenishing their supply of stallions with a view to being prepared for next winter's trade report great difficulty in finding two and three year old colts of the conformation and size demanded by the trade.

Men having mature draft horses seven or eight years old will do well to dispose of them before depreciation becomes marked, and can well afford to put in good young mares standing 16 hands in height and weighing 1,200 or 1,300 pounds at three or four years of age. Such mares carry two or three crosses of draft blood and grown out under proper conditions will mature into excellent work mares weighing 1,500 or 1,600 pounds, good for work and breeding.

This is a good time for a man to buy young mares of this kind with a view of disposing of his good mature animals later in the season.

Paraffin Protects Silo Interiors

An experienced stockman reported to the United States department of agriculture that five years ago he coated the interior of his concrete silo with paraffin and that this material has efficiently protected the silo ever since, with indications that the protective covering will be good for several years more. This stockman used 40 pounds of melted paraffin in painting the interior of his 110 ton silo. The paraffin was applied hot with a large paint brush. Care should be taken to avoid splashing, since hot paraffin causes severe burns on bare flesh.

This man eliminated the need for scaffolding or ladders by applying the paraffin as the silo was filled, painting a strip as high as he could reach all around the silo and then waiting until the silo had filled up sufficiently so a strip of corresponding size could be applied higher up. He reports that on

thorough examination during subsequent years the only noticeable damage to the paraffin protection occurred where the tines of a pitchfork had scratched the surface. Otherwise the covering remained practically intact. A protective coating is particularly desirable for use in silos made of solid concrete, concrete blocks or similar building material of a semiporous character likely to be attacked by silage juices. The smooth paraffin coating also is believed to permit the silage to settle easily and uniformly, thus avoiding air pockets. Painting the interior of the wooden silo with a mixture of coal tar and creosote protects the building against decay and increases its working life several years where the application is repeated every year. The material costs about 20 cents a gallon and approximately three or four gallons are sufficient for a 100 ton silo.

It Pays to Test Dairy Cows

"The man who persists in milking low grade and scrub cows just because he thinks they require less feed and attention is not only fooling himself but is actually robbing his own pocketbook," says E. M. Harmon of the Missouri college of agriculture. "Through our cow testing associations we are constantly finding that it is the high grade and pure bred dairy cows of high producing ability that are making the real profits on the dairy farms of Missouri.

"In the Cape Girardeau County Cow Testing Association, which recently completed a year's work, we found that after charging the cows with all feed consumed and allowing the nominal sum of \$60 a year per cow for all other expenses, such as labor, interest and veterinary fees, that they were divided according to profit as follows:

	Percent	
Lbs. Fat.	Cows in Class.	Profit.
350 to 450.	4	\$111.10
250 to 350	41	54.24
150 to 250	41	1.72
50 to 150	14	Loss 35.26

"From this data we will see that one of the 400 pound cows will produce as much clear profit as 64 cows in the 200 pound class. A further analysis shows that there were enough actual money losers in the 200 pound

class to make a total of 36 per cent of the cows below the line of profit. It is the dairyman who is getting rid of these money losers who is making the real profits out of dairying. The cow testing association is the surest method of building a profitable herd."

Veterinary

Horse Has Sore Feet

Have a horse with sore feet. Looks like frog was rotting away and there is a slight discharge. Have been cleaning out thoroughly and applying blue vitriol water. There has been very little improvement. Can you tell me what it is and what should be done?—Subscriber, El Cajon.

The condition mentioned appears to be thrush. You should clean out the feet thoroughly, cutting away all of the decomposed hoof necessary and pack powdered calomel in the cracks around the frog of the foot very tightly. Care should be taken to keep the horse standing in a dry place following this treatment. It may be necessary to pack the hoof two or three times if the condition is as bad as it appears to be from your explanation. Careful treatment of this kind should remedy the difficulty in a short time.—G. E. G.

Eggs and Walnuts

By Jean A. Koethen

MORE and more the thoughts of California fruit and nut ranchers are turning to the problem of renewing the soil. How shall necessary fertility be maintained without profit stealing outlay for manures of one sort or another? Mrs. John C. Eads of San Gabriel is one of those who believes the combination of poultry and trees is the solution.

When Mr. and Mrs. Eads found that their 25 acre walnut and orange grove ten miles out of San Gabriel needed more fertilizer than they cared to buy, Mrs. Eads said, "Let us try chickens." Mr. Eads was skeptical. Chickens are a lot of work and they must be fed. Besides, the family were living in town and there wasn't much room for chickens on a back lot. He consented, however, to loan Mrs. Eads the money for buying an adjoining lot and making a try of it.

Chickens on a Back Lot

This lot, 67 by 150, was laid out with great care in order to economize space: Brooder house of the 100 chick unit type, heated by gas pipes that come up from underneath at one end of each hover, every run with its outside run to match; long laying house of the no-yard type, confining the hens in units of 75 to 100; cockerel houses of the open front colony sort that can be transformed into laying houses for small flocks of pullets if desired; neat alleys connecting all buildings; feed and egg room and, best of all, what Mrs. Eads calls her experiment station, a row of small yards where small groups of birds can be kept for observation and experiment. All was not built at once, but it was planned from the beginning and built as occasion required.

All this was five years ago. April 1, 1914, Mrs. Eads bought 500 chicks in two lots of 150 each. The 300 pullets she raised were trapnested to make sure of finding the right foundation stock. Later some new stock was bought from the Oregon station, and there is now in one of the cockerel yards a fine flock of what its owner proudly calls Dryden roosters bred from the original Dryden stock.

By the first of January, 1915, these 300 trapnested pullets had paid back all they cost. The next year was not quite so successful, because Mrs. Eads tried to increase her flock too rapidly. At the end of that year she had \$236 over and above expenses but had not yet paid back to her husband the cost of the buildings. The third year she bought an incubator and did her own hatching, but bought Dryden males to mate to her hens. By the end of the third year she had paid back the cost of the buildings, and at the end of the fourth year she made \$1,450 clear profit from this back yard plant. "Then," she says, "Mr. Eads, who had all along been doubtful of the outcome, decided to get on the band wagon, and we went into partnership." "I often tell people," Mrs. Eads added, "that if I had been absolutely dependent for my bread and butter on the outcome of my venture I should have quit at the end of the second year. There were other things I could have done more easily to earn a living. But a living was not what I was after. I wanted to breed up a productive strain of layers for that walnut ranch. If we must support our hens just for the sake of the manure they produce, we might as well buy the manure. If the hens will pay for themselves and bring in an income beside they are very much worth while."

A Walnut Grove House

The breeding stock, comprising over 300 hens and cockerels, is still housed on the town lot where Mrs. Eads may trapnest and experiment and keep close watch over her birds, which are now the apple of her eye, but the 1,200 layers have been moved to the new Weeks type house on the ranch.

Picture to yourself a long house 240 feet long and 12 feet deep, divided into sections ten feet wide, with a big patch of alfalfa in front of it, and all around magnificent walnut trees, and you will have some idea of the home of these fortunate layers.

This house differs in several important particulars from the regular

Weeks house. In the first place the sections are larger. The Weeks house is built in sections 8 by 8, each holding not over 25 hens. The Eads house is in sections 10 by 12, each holding 50 hens. The Weeks house is entirely open in front and entirely closed at the rear, except for windows. The Eads house has wire over nearly all the front and also at the back under the dropping boards, which are built quite high. As it is shaded on the east by a row of walnut trees, the hens are cool and comfortable on the 'hot-test day, and if there is ever a draft it is below the boards. There is no floor, except the soil of the orchard, which is very sandy. The droppings are raked off when necessary, and once a year, if it proves essential to the health of the birds, the old sand will be removed. In order to test the healthfulness of such housing a careful record is kept of the sick or dead birds taken from each house. The layers here are in charge of Mrs. Macdonald, wife of the manager of the ranch. Mrs. Eads makes weekly trips to see how things are going, besides looking after her end of the work on the home plant.

Experimenting

There are some things nobody seems quite sure about, and so Mrs. Eads in her experiment station is trying to find out for herself. Do hens go broody because they are lazy or because they are tired? In one of these little yards are eight or ten hens that have been banded for broodiness. Will they go right back to laying as soon as they have rested a few days or will they rest too long? In another yard are May pullets. Will they lay as many eggs as pullets hatched in April? Apparently not, but Mrs. Eads wants to be sure before she gives up May hatching. In another yard are pullets that did not begin to lay till they were nine months old. They have laid more steadily than the more precocious pullets since they got started. In two adjoining yards are pullets that had no wheat while they were growing and pullets that had all they would eat. Without question, the wheat fed pullets are larger and lay earlier.

Then there is the "perfect" pen, 13 old hens, daughters of a Dryden cock. Their production since last March (to July 9) was 69 to 80 per cent. If some hens do as well as this, should not all hens be required to do it or quit?

Bookkeeping First

The most essential thing to success with poultry, Mrs. Eads declares, is to be a good bookkeeper. She loves to keep accounts and takes the greatest pleasure making the balance come in the right column. Another important factor in success is buying feed economically, that is, in quantities and at the right time. Haphazard buying and haphazard management must be carefully guarded against.

EGG LAYING CONTEST AT STATE FAIR

A feature of the Santa Cruz County exhibit at the state fair will be an egg laying contest exactly as conducted by the farm bureau at Santa Cruz. This institution has become of more than state wide interest and bids fair to soon become a national contest.

The egg laying contests bear the same relation to the poultry world that cow testing associations do to the dairy world. By a system of daily rattons, tests and the keeping of daily records, the "boarders," or non-producing, hens are eliminated from the flocks.

At the state fair exhibit the practical working of these contests will be demonstrated and will be explained by Max Kortum, manager of the contest at Santa Cruz. Baby chicks will add life and color to the exhibit and the professional poultry raiser and city man with just a few "biddies" in his back yard ranch will find much of interest and profit in the exhibition.

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S. C. White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Now booking orders for this Fall and next Spring delivery. Prices and terms gladly sent on request. Hatchers and shippers of Baby Chicks since 1898. **MUST HATCH INCUBATOR COMPANY**, 438 Seventh Street, Petaluma, California.

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For Sale—1200 Acres of land on the river, 1000 inches of water. Free water now accessible. River running through the land, good ranch house, stable, corrals, all fenced and cross fenced, 3¼ miles from Bishop and from Laws, California. 50 acres of alfalfa. For particulars address Geo. W. Garner, Bishop, California.

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Owner Will Sell equity in 5¼ acres exceptionally good Valencia oranges. Best buy in choice North Whittier Heights district, good crop on trees. \$12,300. Cash required. Box 1206, Puente, California.

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If interested in securing farm lands or have same for sale write me. John G. Mee, St. Helena, California.

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Irrigated Alfalfa Ranches for sale. Other crops, plenty water. C. I. Graves, Fallon, Nevada.

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Irrigated Farms—Five acres and up. Alex. Murdock, Brentwood, California.

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For Sale—Used ranch material, windmills, pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for our "Special Bargain" price list. Demmitt Co., Upstairs, 120 N. Main, Los Angeles.

45 Holt Tractor, 2 3-gang plows, 2 8-ft. double disc harrows, complete outfit, \$4500. R. E. Wilson, Box 234, Rt. D. 9, Los Angeles. Phone Vermont 4552.

For Sale—Typhoon 50 Ensilage Cutter in good condition, two sets new knives. Price \$250.00. Fred W. Cleland, 12429 Compton Ave., Compton, California.

For Sale—Caledonian Bean Cutter and small thresher. Bargain. Chas. Young, Whittier, California, Phone 7694.

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For Sale—Placencia Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. Ketscher's Nursery, 1101 E 4th St., Santa Ana, California. Phone 672WK.

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Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
August 26, W. M. Bray, Sacramento.
September 23, Alana Farms, Dixon.
October 20-21, A. J. Stalder, Riverside.

Herefords
November 4, Pacific Coast Hereford Breeders' Association, Sacramento.
November 5, J. H. Cazier & Sons, Sacramento.
November 6, H. M. Barngrover, Sacramento.

Shorthorns
November 18, Fimmel Ranch Company, Sacramento.

Poland Chinas
September 30, Wilotta Ranch, Suistun.
September 27, Hugh C. Shinn, A. J. Elliott and Alex D. McCarty, Tulare.
October 6, Kings Co. Poland China Breeders Assoc., Hanford.

A pioneer breeder of big type Poland Chinas in Humboldt County is N. Hauck at Alton. He is likewise a breeder of high class Guernsey cattle.

W. B. Hewitt, secretary of the San Fernando Valley Duroc Breeders Association, reports an interesting session at the July meeting of the association at Van Nuys. J. C. Craig made a talk on ways and means of forming a cooperative marketing association. The raising of funds for hiring a state field man for breed promotion was also discussed.

Secretary Chas. Paine of the California state fair has received notice that the Elliott-Brant Rancho, Owensmouth, will exhibit Guernsey cattle and Duroc-Jersey swine. The Elliott-Brant entries are expected to add considerable strength to the various classes.

E. W. Major, Los Angeles, who is one of the best known dairy cattle judges in America, has been selected to place the Jersey classes at the coming state fair. Major has officiated at many of the leading fairs of the West.

In our last issue it was stated that the prospects were that no Ayrshire cattle would be seen at Sacramento this year. Since the publication of the preliminary list E. B. McFarland of San Mateo has entered his popular Steybrae herd. McFarland has been one of the pioneer exhibitors of Ayrshires and his entries would have been greatly missed.

The dam of Cherub's Prince is Imp. Princess Bergere, grand champion at the National Dairy Show in 1916 and 1917. She has a production record of 11,509.9 pounds milk and 516.42 pounds butter fat completed as a mature cow in a double letter division of the Guernsey Advanced Register, also a record of 14,232.9 pounds of milk and 605.67 pounds of butter fat completed as a mature cow in the single letter division.

The American Jersey Cattle Club has announced that Sophie 19th of Hood Farm has just completed her ninth official record and now has to her credit a total official production of 110,918 pounds of milk and 6,353 pounds of butter fat. In the story of her accomplishment the statement was made that she now has a lead over Tilly Alcartra of 693 pounds of fat. That credit is true, but it should be remembered that while the figures on Sophie's production are for nine years, those for Tilly are for seven.

William Briggs of Dixon has just received an important shipment of Hereford cattle from Wyoming and Colorado. From the Wyoming Hereford Corporation of Cheyenne Mr. Briggs secured a number of cows and eight heifers. One of the cows is the dam of two winners at the P. P. I. E. and another one is the dam of a winning calf at 1919 Denver show, that sold for \$4,000. The heifers are sired by one or another of the following bulls: Wyoming Fairfax, Gold Dust and New Era. In the shipment was included a young bull from the Folcher and Kepler herd of Colorado. This youngster, Lincoln Domino, is regarded as a splendid prospect.

The Humboldt County Agricultural Fair will be held at Ferndale, September 14-18. Special stress is to be laid on the dairy cattle exhibits.

The management of the Second Annual Pork Day, to be held at Hanford, October 28, has announced that nine carloads of fat hogs have been entered in the various classes and it is expected several other carloads will be shown.

POULTRY STANDARDIZATION

The American Poultry Association in annual session at Kansas City appointed a committee of 40 to devise methods of standardizing judging of poultry and poultry products for exhibition and market. The committee will report to the next annual, held in August, 1921. Grant M. Curtis of Quincy, Illinois, was selected as permanent secretary of the committee.

The Snow Mountain Water and Power Company has a big force of men at work harnessing the water for their hydro-electric plant at Potter Valley. Richmond, Petaluma and other cities are also to get water from this source.

A cow testing association will be started at Point Arena, Mendocino County, the first of next November.

Hop picking started at Hopland the middle of August. Pickers are paid \$1.50 per hundred.

A PRECOCIOUS CHILD

The school was observing Lincoln's day by having the pupils write stories about Lincoln. One small boy wrote: "Abe Lincoln was born in Kentucky on a beautiful morning in February in a rough cabin which he had helped his father build."

Household Department

MISS PHOEBE'S HOLLYHOCK GARDEN

(Concluded.)

With beating heart she found his leash and fastened it to his collar.

"You'll always be kind to him, Mr. Preston, won't you? as—as long as he lives? I—there is nothing in all the world would make me part with him but going to New York. I—you—" she was down on her knees before Laddie, her arms about his great neck, shedding tears on his collar. She kissed him between his silky ears. David likewise lavishly embraced him. They watched Laddie's departure with tearful eyes.

"He wouldn't have cried so bad, Miss Phoebe," said David comfortingly, a few minutes later when they were in the garden, "if he could have understood why you was giving him away. He couldn't know you's going to New York where there's no place for him to stay at, and he thinks you don't love him any more."

THE VICIOUS CIRCLE

A playful pup pursued his tail in the midst of a busy street. Till his tongue hung limp from his gaping mouth and he wobbled on his feet: The passers-by were stirred to mirth as they watched his exercise. And they held their sides and they laughed so hard that the tears rolled from their eyes:

And someone yelled: "I like the way that you keep on chasin', pup. But you're plain damfool, for you're all one piece, so you never can catch up!"

The trainmen wanted a boost in pay So they argued loud and long, And the railroads let them have their way.

For the Brotherhood was strong; The miners started a husky kick For the raise they felt was due, And just as smooth as a juggler's trick Was the way the thing went through.

The dub that toted the humble hod Held an upturned palm for more, The truckman, too, and the white-wing squad

And the rough-necked stevedore, And after them came the roustabout And the stokers and the crew— A crowd with their eager hands held out, The cook from the galley, too.

The gods that from Elysian field gaze down on the spinning earth And see the frantic, scrambling race must be moved to tragic mirth; And Jupiter doubtless turns to Mars with a dismal smile, to say: "My word, old top, observe these fools run rings in their silly way! They're just plain nuts, for the whole blamed bunch forms a body that is one, And its head won't ever catch its tail, for it simply can't be done!"

—Ralph C. Strohm

"I know, David. Come, let's say goodbye to the garden!" It was early September and the air was fragrant with the lovely late hollyhocks.

"David, I want you to come here and play and look after my flowers when I'm gone, just as if I were here. They must not get lonely."

"Yes'm," replied David huskily. "I'll come, but it won't be nice without you and Laddie. The flowers all know you're going! I told them this morning. The lilacs said they would be awful lonesome next spring when they put on their purple dresses and you wouldn't be here to see them."

"Did they?" smiled Miss Phoebe with misty eyes. "You can tell them I said that I'll miss them too, David."

David suddenly remembered the catpillars. He brought her the box. "You must choose one of 'em, Miss Phoebe, to keep. Will it be a king or a president?"

"Oh, David, what a boy you are! You choose for me, darling, for anything so wonderful as a king or a president I never could make up my silly old head."

He picked her out King-Al-Yellow Top. "He ought to turn into a awful pretty butterfly, and when he does, Miss Phoebe, won't you please take him to live in a park? He would miss the flowers and trees and things. He'd rather live in a park."

"I promise, David, and he shall always have the best of care."

"Goodbye, King Al!" he cried. "And mind you like New York!"

"Goodbye, George Washington!" echoed Miss Phoebe, entering into the little game. "And don't forget the King."

It was late when Miss Phoebe retired and her sleep was light and broken and full of troubled dreams. When she finally opened her eyes, some one was calling her name. It was David. He was pale and trembling and his great eyes were full of pleading.

"Hide me, Miss Phoebe, hide me! There's a man her to take me away with him. I'm afraid of him, Miss

Phoebe—please don't let him take me—please let me stay here with you!"

She gathered him in her arms. "Darling, there is no one after you. No one shall take you—ever, unless you want to go. Now tell me all about it."

"Aunt Baxter, she ain't my really-truly relation-aunt at all. And Luke Jenkins, the man who's come to take me, he and my Aunt talked just now. My father isn't going to ever send her any more money for me 'cause he's dead and so she ain't agoing to keep me. She's going to give me to him to work, and, Miss Phoebe, he whips his horse awful, he does! And he whipped it just now and he laughed and said, 'See that, my young fellow? That's what you'll get if you don't mind me!'"

Miss Phoebe's mild blue eyes flamed. She hugged David's thin little body closer to her as if to protect him from Luke Jenkins' threatened blows. "Oh, David Boy, my dear, are you sure you understood? Are you positive your father is dead and Ann Baxter is not

your aunt? And who is this Luke Jenkins? I can't seem to place him."

She suddenly put David down and went into her room and commented dressing. "David's alone in the world," was what she was thinking. "David's alone!" Presently she came out and David saw that she wore her hat and coat.

"I am going out for a few minutes, David. No, you stay right here, darling, and there is no one coming to get you! Here is a new book. It was to have been my little farewell gift to you today, but you can have it now." She put it into his hands and kissed the top of his wellow curls. "I'll not be long, David, and when I come back we'll have a party."

He became so lost in the adventures of Ali Baba and the Forty Thieves that he did not notice that it was long past noon before Miss Phoebe returned. If David had not been such a little boy he might have noticed how quick her step was and the beautiful light that shone in her eyes. It was the kind of light artists try to paint in the faces of those who have found great happiness and peace. But David noticed nothing but welcoming arms she held out to him. "I'm going to keep you here forever and ever, David."

A sudden burst of sunlight flooded the room and lighted up a picture. It was the picture of the boy on the cover of yesterday's Post—a little yellow haired boy standing in a hollyhock garden. The words of old Vandy came ringing back to her with new significance. "Yes, Miss Mary has talent." (Let her have the picture!) "But Miss Phoebe has genius." (Let her have the boy!)

She laughed a low, rippling laugh that to David sounded like the peal of little silver bells. Then they both noticed that someone was tapping on the door. David hastened to open it. It was Laddie. He had broken his chain and come home.—Farmer's Wife.

To succeed one must be patient. The penitentiaries are full of people who were impatient.



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HOUSEHOLD QUERIES

Dish Cement—Cooky Recipes

Answering query of Ripon subscriber as to mending cut glass: I have saved directions for mending dishes published in Cultivator of November 15, 1919. It is: "A good white cement for dishes is made by stirring plaster of Paris into a thick solution of gum arabic until it is of the consistency of cream. Use brush to paint this on the broken edges. Join accurately together and allow to set three days. Mix only as much cement as is needed for use at one time, as it hardens quickly and is useless for mending."

I would like you to publish in your columns some cooky recipes. Would like recipe for Panama Creams, if possible.—Subscriber, Santa Maria.

We appreciate very much the courtesy of our Santa Maria subscriber in sending the dish cement directions requested by our Ripon subscriber.

As to cooky recipes we give a number in another column. These are from "Mrs. Wilson's Cook Book," reviewed recently on this page. They will be found good and economical. We think the character of Panama Creams is largely due to the method of baking in the large factories. The cookies are baked on revolving trays in a very evenly heated oven. However, would suggest use of recipe given for soft chocolate cookies, leaving out the last step, the covering with damp cloth. Put two of these cookies together, back to back, with filling between made as follows:

Melt one-half pound marshmallows or take same amount of marshmallow cream. Cook one cup sugar and one-third cup boiling water until it threads. Pour slowly onto melted marshmallows, add half teaspoon vanilla and beat until thick enough to spread.

To Remove Calcimine

Please tell me how to get calcimine off a wall. It is peeling in places. The room does not appear to be damp. I want to get as much off as possible in order to paint the room with powder paint.—Subscriber, Crockett.

Use of warm water with cloth or brush will remove calcimine. Sometimes painters use wire brush, which may be purchased at any paint supply store. With this the calcimine is brushed off dry. After brushing, if wall is smooth finish plaster it may be smoothed off with sandpaper. Of course, if it is the rough finish, only the wiping or brushing can be used.

COOKIES, GOOD AND ECONOMICAL

Soft Cookies

Place in a saucepan 1 cup molasses, 6 tablespoons shortening. Bring to a boil and then add 1 teaspoon ginger, 1½ teaspoons cinnamon, ½ teaspoon allspice. Stir to blend and then take from fire and let cool. Now add 1 egg, 1 cup sour milk, 1 teaspoon baking soda. Beat with a Dover egg beater to blend and then add sufficient flour to make a soft dough that can be handled, usually about seven cups. Form into balls the size of a walnut and then flatten between the hands. Bake upon a greased and floured inverted baking pan in a moderate oven for about ten minutes.

English Seed Cakes

¾ cup sugar, 1 egg, 5 tablespoons shortening, 2 cups flour, 4 teaspoons baking powder, ¾ cup milk, 2 tablespoons caraway seeds. Place in a mixing bowl and beat to mix. Pour into a well greased pan and place the following mixture on top: Place in a mixing bowl 6 tablespoons flour, 4 tablespoons brown sugar, 1½ tablespoons caraway seeds, 2 tablespoons shortening. Rub between the fingers until fine and crumbly. Spread over the top of the cake and bake in a moderate oven for 35 minutes. To prepare the pan use a deep layer cake pan and grease it. Then line with paper and grease again.

English Rocks

Place in a mixing bowl 1½ cups brown sugar, 2/3 cup shortening, 2 eggs, 1 teaspoon soda, dissolved in 4 tablespoons water, 2 teaspoons cinnamon, 1 teaspoon nutmeg, 2½ cups flour, 1½ cups finely chopped nuts, 1½ cups finely chopped raisins. Mix thoroughly and drop by a teaspoon on a well greased and floured baking sheet and bake for 12 minutes in moderate oven.

Soft Chocolate Cookies

½ cup brown sugar, ½ cup syrup, 6 tablespoons shortening, 1 egg. Cream and then add ½ cup cocoa, ½ cup milk, 2 teaspoons baking powder, 4 cups flour, 1 teaspoon cinnamon. Work to a dough and then roll, cut and bake in a moderate oven for eight minutes. Cool and cover with a damp cloth for three minutes. Store in an airtight container.

Honey Cookies

Place in a mixing bowl ¾ cup brown sugar, ¾ cup honey, 1 egg, 7 tablespoons shortening. Beat to blend and then add 3¾ cups flour, ½ cup seeded raisins, ½ cup finely chopped nuts, 1 teaspoon baking powder, 1 teaspoon mace. Roll and cut and then bake in a moderate oven for ten minutes.

Crumb Cookies

1 cup molasses, ½ cup brown sugar, 6 tablespoons shortening, 2 teaspoons cinnamon, ½ teaspoon ginger, ½ teaspoon allspice, 1 egg, 5 tablespoons sour milk. Beat to mix and then add 2½ cups coarse bread crumbs and sufficient flour to make a very stiff mixture. Drop by the spoonful on well greased baking sheet, three inches apart. Bake in a moderate oven for ten minutes.

Sweet Potato Cookies

1 cup brown sugar, 4 tablespoons shortening. Cream well and then add 1 cup mashed sweet potatoes, 1½ cups flour, 1 teaspoon baking powder, ½ teaspoon nutmeg, ¾ cup raisins, 1 egg. Work to a smooth dough and then roll out on floured pastry board and cut ¼ inch thick and then bake for eight minutes in a hot oven.

Lace Cookies

Place in a mixing bowl 1 cup syrup, 4 tablespoons shortening, 1 egg, 3½ cups oatmeal, ¾ cup flour, 1 level tablespoon baking powder, 1 teaspoon vanilla. Beat just enough to mix, then form into round balls and set three inches apart on well greased baking sheet. Bake for 15 minutes in a moderate oven. Place ½ teaspoon of marshmallow cream on each cookie.

THREE TIMELY RECIPES

By Mrs. William Coffin, Earlimart

I am a reader of your very helpful paper and find many useful recipes in your household department and I am sending three that may be of help to some of your readers; a nice apple dessert, which can be made use of soon as apples will be plentiful, also fig pudding which will be nice for using up dried figs this fall and winter, and the Italian stew is a very economical dish as it is a whole meal of itself.

Stuffed Apples

9 large apples, 1 cup grated pineapple, 1 cup ground walnuts, 1 pint whipped cream slightly sweetened. Remove cores from apples and bake till nicely done, but do not let them lose their shape. When cold place each apple on a crisp lettuce leaf and fill the cavities with the grated pineapple and ground walnuts mixed together. Garnish with the whipped cream.

Fig Pudding

1 quart dried figs chopped fine, 1 cup bread crumbs, 3 eggs beaten separately, ½ cup sugar, 1 pint sweet milk. Mix all together in order given and bake in a moderate oven. Very nice served with sweetened cream.

Italian Stew

1 cup rice, one cup spaghetti, 1 quart can tomatoes, or the same amount of fresh ones, 20 cents worth of Hamburg steak, 1 medium sized onion, 1 tablespoon grated cheese, 1 teaspoon salt, 1 level teaspoon ground mustard, ¼ teaspoon black pepper, dash cayenne pepper. To prepare, put on to cook in separate saucepans the rice and spaghetti, also the tomatoes if fresh ones are used. While these are cooking cut the onion fine and mix with the steak, using salt and pepper to suit taste, and fry in a generous tablespoon of fat in a hot frying pan until done but not browned hard. Now put the cooked rice, spaghetti and tomatoes into a medium sized milk pan, add mustard, cheese, pepper and salt to taste, and if there is not enough juice in the tomatoes add a little hot water. Mix all well together and bake about 30 minutes, or until a nice brown. This served hot with a nice dessert and a cup of coffee makes a very wholesome meal.

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To create additional available plant food and prevent smut in grain, drill into the soil 110 pounds per acre of TORO BRAND SPECIALLY PREPARED AGRICULTURAL SULPHUR—or our DIAMOND "S" BRAND REFINED POWDERED SULPHUR. This soil treatment has increased various crops up to 500%. Send for Circulars No. 6 and 7, and circular letter of information, "To Whom It May Concern".

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Carried in stock and mixed to order.

SAN FRANCISCO SULPHUR CO.
624 California Street, San Francisco, Cal.

We are equipped to make immediate shipments. Send for "ILLUSTRATED BOOKLET"; also booklet "NEW USES FOR SULPHUR," Price-list and Samples.

Ask us for prices for Carbon Bisulphide, the surest remedy for destroying ground squirrels.

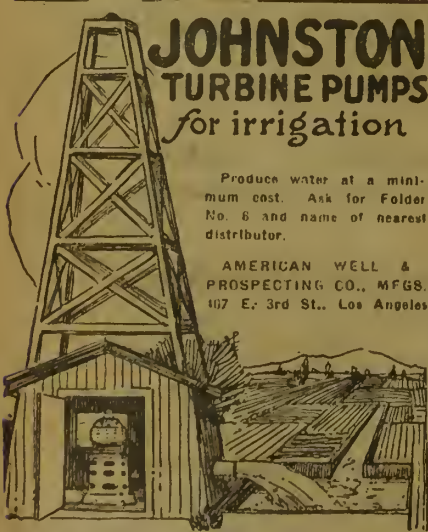


Holt Inspection

Standards accurate to within a hundred thousandth of an inch check all Holt gauges. Holt gauges, in turn, are a double check upon all material and parts that go into the making of the "Caterpillar" Tractor. One set of gauges is used by the workmen, another set by a corps of inspectors who check each process. By every possible means, Holt high quality is protected and maintained.

"Accuracy"—a most interesting booklet—will tell you all about it. If you are interested in "Caterpillar" Products, send for a copy.

The Holt Manufacturing Company
Stockton, Calif., Peoria, Ill.,
Los Angeles, Calif., Spokane, Wash.,
San Francisco, Calif.



JOHNSTONE TURBINE PUMPS for irrigation

Produce water at a minimum cost. Ask for Folder No. 8 and name of nearest distributor.

AMERICAN WELL & PROSPECTING CO., MFGS.
117 E. 3rd St., Los Angeles

The Cultivator costs only one dollar yearly

Los Angeles Markets

Los Angeles, August 25, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 66½ cents.

Dairy Exchange prices last week on extras:

Aug.	18	19	20	21	23	24
'20	63	63	64	64	65	66½

CHEESE

Brokers' prices:
California flats, 29@31 per lb.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 60 per dozen; case count Prod. Exch. closing price 56 per dozen; pullets, Produce Exchange closing price 50 per dozen; pewee pullets, 31.

Dairy Exchange prices last week on extras:

Aug.	18	19	20	21	23	24
'20	56	56	56	56	58½	60

POULTRY

Price to producers: Hens, lt., 25; heavy, 28; colored, 32; broilers, 31-34; roasters, 38; old roosters, 14; fryers, 32; ducks, old, 17; ducklings, Pekin, 3½ up, 20; others, 17; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47.

Belgian hares, live, 14@18; old, 9.

LIVESTOCK

Los Angeles, Aug. 24.—Weighed and delivered off cars without food or water: Hogs (hard-grain): 125 to 175 lbs., 16.50; 175 to 225 lbs., 17.50.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, August 24, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market firm. Local: Early and White Rose, fancy No. 1's, mostly 1.35@1.50; No. 2's, 75@1.00 per lug; 100 lbs. sacked No. 1's, 2.50@3.00. Stocktons, 3.50@3.75; sweet potatoes, lug, 2.50@2.65.

Carrots: Supplies light, market firm. Sales to jobbers: New Stock: Locals: White Rose, 100 lb. sacks mostly 2.50@3.00. Stocktons: Burbanks, fancy, 3.35@3.65. Carlot sales of Stockton Burbanks mostly 3.25.

Onions: Local White and Yellow, lug, 65@85.

Garlic, lb., 12@15.

VEGETABLES

These are the actual prices obtained August 24 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 10@12; Limas, 5@6.

Beets: Doz., 35@45.

Cabbage: Supplies moderate, market steady, movement good, wide range in quality. Best mostly 3½ per lb.; per field crate, best, 2.75@3.25.

Carrots: Doz., 35@45.

Celery: Doz. bunches, 1.00@1.35.

Corn: Local, best 1.10@1.25 per box.

Cucumbers: Market steady; local, best, lug, 40@60.

Egg Plant: Lb., 5@7.

Lettuce: Local, cr., best, 1.00@1.50.

Peppers: Bells and Chilis, lb., 4@5.

Squash: Local summer, large lugs, 60@80; Italian, lug, 80@1.00.

Tomatoes: Local lugs, best mostly 65@90; poorer, 50@65 lug.

Turnips: Per dozen, 30@40.

DECIDUOUS FRUITS

These are the actual prices obtained August 24 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal. Bushel Boxes: Gravensteins, 2.75@3.10. Local Various varieties 85@1.25 per lug. Crabapples, lug, 75@1.25.

Bananas: lb., 10½@11.

Berries: Blackberries—Supplies light, per crate, mostly 4.00@4.50. Strawberries—Local, supplies moderate, market steady, per crate, 4.50@5.00.

Cantaloupes and Melons: Cantaloupes—Market unsettled, supplies heavy, quality and condition wide range. Local: Tiptop and Paul Rose, pink meats, standard crates, best 75@1.25. Watermelons, lb., 1½@2.

Grapes: Thompson Seedless, 6@7; Muscats, Malaga and Hamburg, 9@10.

Nectarines: Lb., 7@8.

Peaches: Local, best, lug, 1.80@2.25.

Plums: Lb., 7@10.

Pears: Bartlett's, best, lb., local, 5@6; Northern, 8@10.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 3.00@3.25; special packed brands, 3.75@4.00.

Lemons: Market dull, wide range in prices. Local stock: Packed, 3.00@3.50; loose, 1.25@1.75; lug, mostly 75.

Oranges: Supplies moderate, market strong. Valencia's, packed special brands, 126's, 6.75@7.25; 150's and 176's, 6.75@7.50. Local packed, second grade, 3.50@4.50. Packing house culls, 75@1.25 per box.

HONEY

U. S. bureau of markets: Demand moderate. Cars f. o. b. usual terms. White orange, 19@20; light amber alfalfa, 15½@17½; Hawaiian light amber, 14½; beeswax, 40@43.

Hamilton & Menderson: There is almost an entire lack of demand for honey.

Prices to producers:

White sage and white orange, nominally, 18; light amber sage, 16; light amber alfalfa, 13½; Nevada fancy white, 15; Hawaiian honey, 12@14, according to the grade. Wax, 38@40.

A. I. Root, August 4: The honey market

is very quiet, with a tendency toward lower prices. Prices to producers: Extracted amber, 15; light amber, 16@17; white, 18½@19. Beeswax, 40 cash, 42 trade. There is practically no comb honey offering.

GRAIN AND FEEDS

Grain Exch. prices bid August 21:

Barley: Carlots, on track, 2.20@2.27½.

bran: Kansas, 55.00.

Milo: No. 3, carlots, 2.75; Eastern No. 3, 2.83½.

Wheat: Mixed feed, Utah-Idaho, 63.50.

HAY

Alfalfa Growers of California under date of August 25 say: Lighter offerings gave alfalfa market an improved tone in most sections of the state. This is most marked in demand for ordinary grades which had been dragging for some time. Receipts in Los Angeles for the week ending August 21 much lighter than week previous, being approximately 1,000 tons, with 100 tons held over, as against 1,600 tons for the week ending August 14.

Choice Alfalfa38.00

No. 1 Dairy Alfalfa.....32.00

Standard Dairy29.00

Stock Hay25.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats23.00@25.00

Barley16.00@22.00

Alfalfa25.00@27.00

Barley straw8.00@10.00

San Francisco Markets

San Francisco, Aug. 24, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras63½

Dairy Exch. prices Extras this week and year ago:

Aug. 16 17 18 19 20 23

'20 61 61½ 61½ 61½ 62 63½

CHEESE

Dairy Exchange quotations:

Jack, full cream23@26

Cal. Y. A.37

Ore Trips30

Cal. Flats27@31½

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras59

Extra Pullets53

Undersized37½

Dairy Exch. prices this week and year ago:

Aug. 16 17 18 19 20 23

'20 58 58 58 57 57 59

POULTRY

Wholesale prices are:

Broilers, 38@40. Colored fryers, 2 lbs. to 3 lbs., 33@45, market firm. Colored

young roosters (smooth), 3 lbs. to 4 lbs., 45@48; staggy, 27@30. Old roosters

(colored), 18@20, market firm. Leghorn

hens, 3 lbs. and over, 26@28. Large

colored hens, 34@38, market firm. Young

Pekin ducks, 25@26; old ducks, 20; young

geese, 25@26, market easy. Live turkeys,

young spring, 50@55 lb., market firm; old

40@45, market firm. Live Belgian hare,

young, large, 60@70, market firm; old,

45@50, market firm. Live Belgian hare,

18@22; dressed, 25@30. Squabs, large,

55@60 lb., market firm. Pigeons, 3.50@

3.75 dozen, market firm.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing

1,000 to 1,200 lbs., 9½@10; do, 1,200 to

1,400 lbs., 9@9½; do, second quality, 7@8,

thin, 6@7. Bulls and stags: Good, 4@5;

fair, 3@3½.

Cows and helpers: No. 1, 8@8½; second

quality, 6@7; common to thin, 2@4.

Calves: Lightweight, 10@10½; medium,

8@9; heavy, 7@8.

Lambs: Milk, 9@9½; yearlings, 7½@8.

Sheep: Wethers, 7@7½; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 16;

150 to 225 lbs., 16½; 225 to 300 lbs., 16;

300 to 400 lbs., 15.

California Farm Bureau Marketing Association reports sale of 101 hogs at Le

Grande, August 18, at 13.00 to 14.75; one

sale very heavy, 420 pounds, 10.00; 2

cars at Madera, August 19, 14.00@16.10,

toppers 87 200 lb. hogs; 3 cars, Fresno,

August 20, 13.10@16.10, small number light

weight poor stuff, 9.00@10.25; 5 cars, 17

consignors, Bakersfield, August 20: 66,

avg. 188 lbs., 15.75; 94, avg. 197 lbs., 15.70;

14, avg. 208 lbs., 15.55; 76, avg. 170 lbs.,

15.55; 82, avg. 202 lbs., 15.50; 12, avg. 259

lbs., 14.75; 9, avg. 147 lbs., 12.00; 23, avg.

140 lbs., 11.00; 16, avg. 292 lbs., 11.00; 1,

avg. 470 lbs., 10.75; 8, avg. 56 lbs., 4.00

each.

POTATOES AND ONIONS

Potatoes, per cental: Delta, 2.25@2.50;

choice, fancy, 2.50@3.00; sweets, 7½@8

per lb. for No. 1.

Onions: New reds, 50@60; yellows, 1.75

@2.00 cr.; green onions, 1.25@1.50. Garlic,

new, 10@12½.

VEGETABLES

Wholesale selling prices:

Artichokes: Doz., 25@1.00.

Beans: Lb., String, 3@5; Lima, 6@8.

Cucumbers: Bay, 50@1.25.

Cabbage: 1.00@1.25 per cwt.

Celery: Doz., 1.25

Corn: 75@1.00.

Eggplant: Livingston, lug, 50@75.

Lettuce: Doz., 30@35.

Okra:hx, 1.00@1.25.

Peppers: Bells, bx., 1.00@1.25.

Pears: Lb., green, 5@10.

Rhubarb: Lug, 1.75.

Spinach: Lb., 4@7.

Squash, Summer: Sacramento, lug, 50

@65.

Tomatoes: Rivers, 30@60 lug.

FRESH FRUITS

Apples: Gravensteins, 2.50@2.75 for 4-

tier, 2.25@2.50 for 4½-tier; 2.75@3.00 for 3½-tier; Crabapples, 50@1.00 per small box; William's Favorite, 1.00@1.50; Alexander, 1.50@2.00; White Winter Pearmain, 2.25@2.50.

Bananas: Lb., 8½@9½.

Berries: Strawberries, large, 75@1.00,

small, 50@65. Loganberries, red, 50@65

per drawer. Raspberries, 75@1.00 per

drawer. Blackberries, 30@40 per drawer.

Cantaloupes and Melons. Cantaloupes

—Poles, 25@40; standard, 75@1.00; flats,

50@75 per box; Honey Dew, lb., 1½@2;

casalbas, lb., 1½@2. Watermelon, imp.,

1@1½.

Figs: 1.25@1.65 for Black one layer, two

layer 2.25@2.50.

Grapes: Malaga, 2.00@2.50 crate; Seed-

less, 1.75@2.00; Muscats, 1.75@2.25; black,

1.75@2.25.

Nectarines: Red, cr., 2.00@2.25; White,

2.00@2.30.

Peaches: Per small box, 90@1.75; bas-

large lugs, 1.25@1.50; No. 3, 1.00 a lug;

Strawberry freestone, 1.50@1.75.

Pears: No. 1, 3.00@3.50, No. 2, wrap

80-90's, 9½c; 90-100's, 9½c.
Growers quality one-half cent less per pound than Sunsweet on sizes 30-40's to 90-100's inclusive.
Raisins: California Associated Raisin Co. 1920 base price 15 cents.

HONEY
Rafael & Wing, in Western Honey Bee: Honey is moving very slowly. There is a large quantity of Australian, New Zealand and Hawaiian honey on the market offered as low as 12 cents. Prices offered to producers: White orange, 20@21; orange, 18@19; water white sage, 20@21; sage, 18@19; light amber, 15@16; amber, 14@15; comb honey No. 1, 6.25; No. 2, 5.75; wax, 49@42.

GRAIN
Wheat: 3.75@3.90.
Oats: Red feed, new crop, 2.50@2.70.
Barley: New feed, 2.30@2.60; shipping, 2.50@2.60.

HAY
Alfalfa Growers of California under date of August 25:
There were 1,670 tons received in San Francisco the week ending August 21. We are selling hay for approximately as follows:
No. 1 Dairy Alfalfa.....29.00
Standard Dairy.....26.00
Stock Hay.....24.00
Under date of August 20 A. W. Scott Co. says:
Receipts past week 1,670 tons, caused by lack of demand and glut of hay on cars in San Francisco. As this is really a temporary condition we quote the market at only \$1 lower. Export is dull. Alfalfa light in arrival.
We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions):

Per Ton
Wheat Hay, fancy26.00@28.00
Wheat Hay (light 5-wire bales)23.00@25.00
Tame Oat Hay23.00@25.00
Wild Oat Hay17.00@19.00
Barley Hay17.00@20.00
Alfalfa Hay, first cutting.....17.00@23.00
Alfalfa Hay, second cutting.....21.00@25.00

Citrus Markets
Los Angeles, August 25, 1920.
Valencias had quite a sensational day in the New York auction on Tuesday. One sale went to \$13.30 while a very large proportion hung around \$7.00 to \$8.00. Practically all the markets show exceptionally good tone. Shipments have been exceptionally heavy in contemplation of the freight raise which takes effect this week. F. o. b. quotations sometimes reach as high as \$7.00.
Lemon market is coming back slightly and the number of foreigners now on dock have been greatly decreased.

Shipments
Shipments to date from Southern California since Nov. 1, 1919: Oranges, 27,443 cars; lemons, 7,200; total, 34,643. To same date last season: Oranges, 30,780; lemons, 8,756; total, 39,536. From Central California to date this season: Oranges, 5,375; lemons, 288; total, 5,663. To same date last season: Oranges, 3,714; lemons, 251; total, 3,965. Northern California this season: Oranges, 261; lemons, 23; total, 284. To same date last season: Oranges, 244; lemons, 2; total, 246.

AT THE AUCTIONS
August 20
New York: 10 or., 1 mixed, 3 lem. Val. 3.35-9.40, lem. 2.05-4.40.
Boston: 2 or. Val. 4.80-8.95.
Pittsburg: 2 or. Val. 1.95-6.15.
Cleveland: 1 or., 2 lem. Val. 5.45-7.65, lem. 3.25-3.60.
Cincinnati: 1 or., 1 lem. Val. 5.00, lem. 2.55-2.70.
St. Louis: 2 or., 1 lem. Val. 3.55-4.95, lem. 2.70-3.10.
August 23
New York: 20 or., 1 grapefruit, 3 lem. Val. 4.30-9.75, grapefruit 1.40-4.20, lem. 50-4.00.
Baltimore: 2 or., 1 lem. Val. 5.75-6.00, lem. 3.45-3.75.
Boston: 6 or., 3 lem. Val. 6.55-9.25, grapefruit 2.50-3.80, lem. 2.60-4.30.
Cleveland: 3 or., 4 lem. Val. 5.75-7.50, lem. 2.30-3.50.
Philadelphia: 5 or., 3 lem. Val. 6.05-7.70, lem. 1.10-3.50.
St. Louis: 2 or., 2 lem. Val. 4.10-5.65, lem. 2.50-4.00.
August 24
New York: 13 or., 1 lem. Val. 4.10-12.30, lem. 2.40-3.45.
Boston: 1 or., 2 lem. Val. 4.85, lem. 3.30-4.00.
Philadelphia: 3 or., 2 lem. Val. 5.20-8.60, lem. 50-3.45.
St. Louis: 1 or. Val. 4.25.

CULTIVATION OF REDWOOD STUMP LAND
(Continued from Page 243.)
stump land as nowhere else has suggested planting on experimental plots berries of all sorts, for berries may be made to spread over and around the stumps, once the preliminary clearing is done.
Grasses, grains and clovers, small fruits and other crops will be given a thorough test. It is particularly hoped that practical grain crops will be found, for the larger areas are more suited to dairying than to orchards.
One grass, the Louisiana carpet grass, which is said to have been used successfully in the sugar pine forests of Louisiana, is one in which the great

est hope is being placed. It is said to be a hardy perennial grass, sprouting at each joint and therefore indestructible. It requires no cultivation after once planted, and no harvesting for the cattle are turned directly in to pasture upon it as it grows, and they thrive on it.
The forestry department of the University of California is also at this time planning a study of reforestation of this land.

AS THE POET MIGHT NOW REMARK
We are living, we are living,
In a grand and awful time!
And a quarter we are giving
For things not worth a dime!
—(Windsor) Border Cities Star.

KEEP IT UP
One step won't take you very far;
You've got to keep on walking.
One word won't tell folks what you are;
You've got to keep on talking.
One inch won't make you very tall;
You've got to keep on growing.
One little "ad" won't do it all;
You've got to keep 'em going.

THESE CHANGED TIMES
"I hear your son is determined to marry an actress."
"Yes."
"Permit me to condole yith you."
"Condone? That stuff's out of date. Why, she makes \$10,000 a week in the movies."—Pittsburg Sun.

CONDITIONS GOOD
H. L. Marsh, Western representative of the Utilitor division of the Midwest Engine Co., has just returned from the factory at Indianapolis. Mr. Marsh has made an extended trip of about two months, visiting all the principal cities of the Western territory. He also visited the factory of the Kardell Tractor Co. at St. Louis, which is now using the four cylinder heavy duty Midwest tractor motor. Throughout the entire field Mr. Marsh reports that conditions in the tractor industry are good.

WEATHER REPORT					
San Francisco, Cal., August 21, 1920.					
Stations	Wk.	Season.	Norm.	Max.	Min.
Eureka	.00	.12	.14	64	52
Red Bluff	.00	.01	.00	119	78
Sacramento	.00	.00	.00	103	70
San Francisco	.00	.00	.01	68	55
San Jose	.00	.00	.02	92	58
Fresno	.00	.00	.00	110	78
San Luis Obispo	.00	.00	.03	92	54
Los Angeles	.00	.00	.00	92	67
San Diego	.00	.00	.00	82	69

WEATHER REPORT					
San Francisco, Cal., August 14, 1920.					
Stations	Wk.	Season.	Norm.	Max.	Min.
Eureka	.00	.12	.13	64	48
Red Bluff	.00	.01	.00	110	66
Sacramento	.00	.00	.00	106	54
San Francisco	.00	.00	.01	71	50
San Jose	.00	.00	.01	92	54
Fresno	.00	.00	.00	110	64
San Luis Obispo	.00	.00	.03	90	43
Los Angeles	.00	.00	.00	88	59
San Diego	.00	.00	.00	80	65

City Comforts for the Farm

Nothing adds so much to the comfort and convenience of the farm home as a dependable water supply system. Plenty of fresh running water means better sanitation, better health and a great saving in time and labor.



Pneumatic Water System

does away with the drudgery of pumping and carrying water. Entire outfit can be placed in corner of basement or barn.

No elevated tank required. Takes water from well, spring or stream and delivers it under constant pressure to any part of house or yard.

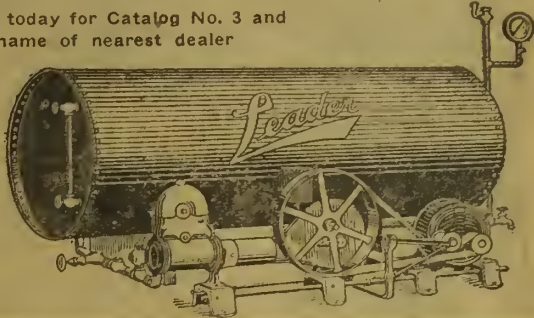
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There is a grade of Zerolene for the Correct Lubrication of each type of engine. Ask your dealer or our agent about the particular grade for your automobile, truck or tractor. Use Zerolene for Correct Lubrication.

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A grade for each type of engine

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"Everything for the modern farm" sums up the service rendered by this organization of experts to the farmers of California.

To supply you with implements and equipment that exactly fit your requirements, we carry in stock for immediate shipment tractors, plows, etc. of standard make and known worth.

Our field men are ever ready to help and advise you. You can buy through our dealer in your territory—or direct from us.

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H. V. CARTER MOTOR CO

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SAN FRANCISCO, CALIFORNIA

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Allis Chalmers 6-12
Beeman Tractor

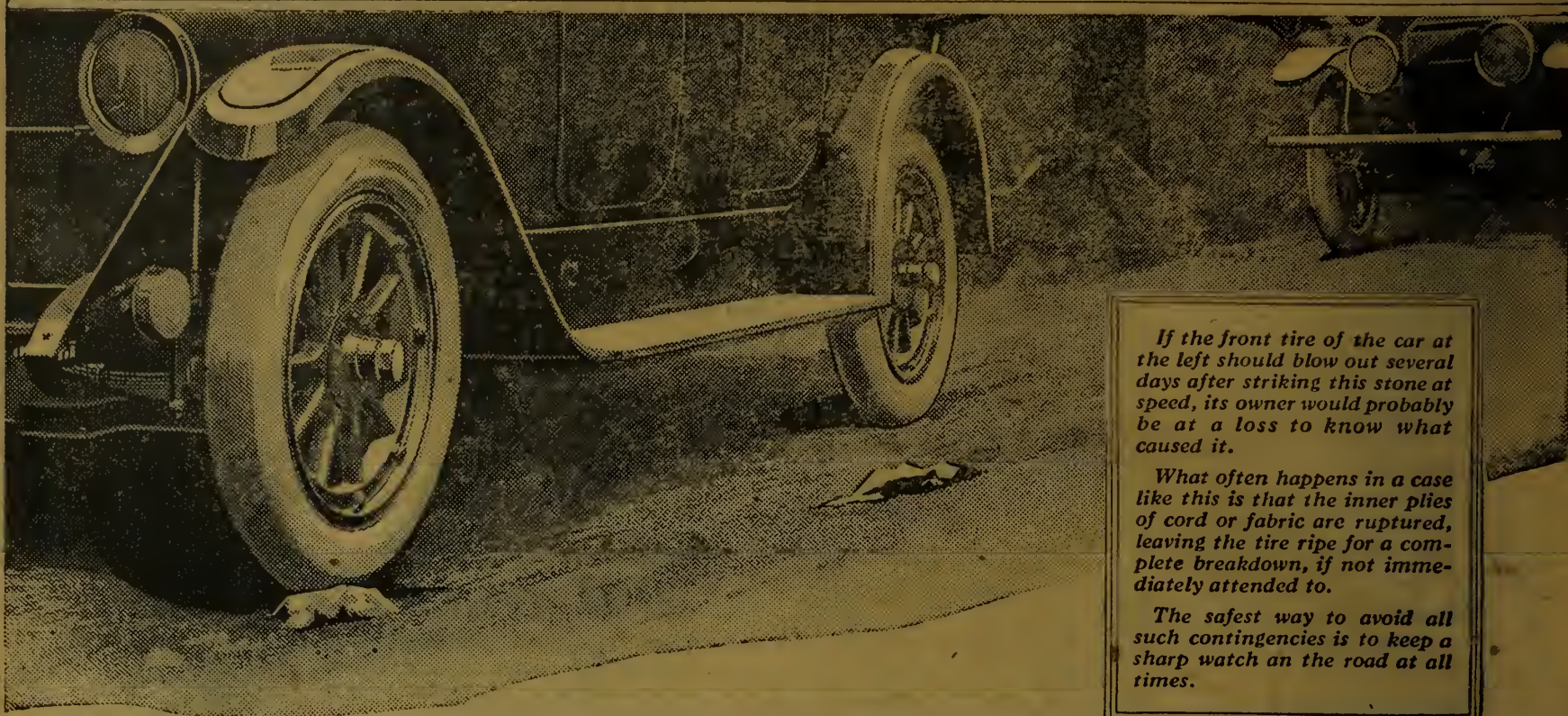
Plows

McKay Combined Power
Lift Disc and Sub-soiler

Implements

Everything for the modern farmer.

Are Car Owners too Easily Satisfied with their Tires



If the front tire of the car at the left should blow out several days after striking this stone at speed, its owner would probably be at a loss to know what caused it.

What often happens in a case like this is that the inner plies of cord or fabric are ruptured, leaving the tire ripe for a complete breakdown, if not immediately attended to.

The safest way to avoid all such contingencies is to keep a sharp watch on the road at all times.

IN every community of any size there are two types of tire dealers—one who encourages his customers in their search for the best and one who tries to persuade them to be satisfied with what they have.

The first man is selling a service; the second, tires.

* * *

There are still too many motorists who meekly accept the blame for a tire that has worn out before its time.

They will listen while the dealer tells them of all the varying conditions that a tire has to undergo.

They will agree when he pictures them as lucky that they

got what they did out of a tire.

Not one motorist in five has yet found out what a tire is really capable of—how much he really has a right to expect from his tires.

* * *

The great mass of motorists in this country are just beginning to wake up to the fact that you can't encourage waste and have economy at the same time.

They are beginning to find out for themselves what makes for economy in tires.

And they are going to the dealer who not only sells good tires to the man who insists

upon them, but who *refuses to have anything but good tires* in his store.

* * *

From the beginning the whole weight of the United States Rubber Company—the largest rubber manufacturing concern in the world—has been thrown on the side of the *good* dealer.

Backing him first and last with all of its great and varied resources—greater and more far-reaching than those of any concern in the business.

And looking forward with confidence to the time when motorists *everywhere* will insist upon a higher standard of tire service.

United States Tires

United States Rubber Company



Fifty-three
Factories

The oldest and largest
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Two hundred and
thirty-five Branches

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

September 4, 1920

No. 10



Greater Interest is Shown in the State Fair at Sacramento



The Cletrac Never Tires~

The long grueling grind of open field plowing doesn't bother the Cletrac. This husky tank-type tractor never tires. Replaces four to eight horses—stands ready to work every minute, 24 hours a day, 7 days a week too, if necessary. Laying its own endless track, the Cletrac travels lightly over *any* soil, no matter how soft, without packing or miring. Plows deep and fast—lightens seed-bed work later on and helps produce bigger crops.

The Cletrac is economical too. Burns kerosene or distillate perfectly—and a boy can run it.

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California Cultivator

Vol. LV, No. 10

Los Angeles, September 4, 1920

One Dollar Yearly

Next Week's Doings at State Fair Grounds

By J. A. Robson

IT has been said that it is impossible to satisfy everyone, but it does not seem possible that there is a person in the whole world who will not find at the 1920 state fair some feature which will amply repay him or her for the visit. There are so many hundreds of features created and conducted for the instruction and amusement of every class that it seems hard to believe that among all this great exposition of the progress of the people of California there is not a sufficiency for each, no matter what his tastes or hobby.

However, this big fair is fundamentally an educational proposition. It is primarily designed to encourage greater production on the farms of California and to create a desire in the minds of visitors from other states to settle here. That it has succeeded is evidenced by the fact that California walked up into the first rank of states providing foodstuffs for the whole world during the late world war. The function of the state fair is to reward the worker and shun the idler, to entertain and instruct and to, incidentally, provide sufficient amusement during its career to make the visit of the agriculturist a glorious holiday.

President George C. Roeding has many times stated that his ideal state fair was one in which every county of the state contributed a display and joined with a spirit of common interest for the benefit of the whole people. The 1920 state fair nearly approximates a perfect exposition. Thirty counties will participate this year, each showing some feature representing the chief industry of the people and embellished with an attraction which compels interest and investigation.

In the big agricultural pavilion which houses the county exhibits one may take a trip through the state viewing the finest products of each section from San Diego to Shasta. There will be golden oranges and cotton from the southern counties and peach trees laden with ripe fruit from the northern ones. All the food products of the torrid and frigid zones as grown in the Golden States will be shown, together with the lumber, mining and manufacturing industries and their products.

Then there will be a novelty which for real educational value will be appreciated by all ranchers and their wives. This is the "Power on the Farm" section. In an eight acre space covered with the largest tents ever made will be housed every kind and make of power machines used on the farm. These will be tested and demonstrated by Prof. L. J. Fletcher and his corps of assistants from the university farm school at Davis. Every bolt and working part of every machine, from the power churn to the tractor, will have its function explained. Experts will also be in attendance to point out the many advantages offered by these labor saving devices.

The theory that vocational training in the schools is the best sort of fit-

ting the young people for the serious business of life will be amply demonstrated by the school children of Oakland, Modesto, Los Angeles, Red Bluff and Sacramento. Each of these cities will bring a number of pupils who will engage in the actual work as taught in their respective schools. The Woman's Building will house the nursery, where nurses will be in attendance at all times to relieve the

head have been entered at this date and it is expected that over 2,000 will be the final number. The cream of the breeds on the Pacific Coast are here, and among them a \$41,000 Holstein bull and a \$10,000 Duroc boar. This is only a sample of the blue bloods of the barnyard that will be seen, all curled and manicured for the delectation of the visitor.

Hogs and horses, pigs, sheep and

latter each afternoon. All classes are well filled and the sport of kings will help fill the grandstands while these features are on. The racing greyhounds that chase a stuffed rabbit propelled by a motorbike will thrill and also amuse. Big money purses are offered these fleet footed animals and some track records are sure to be broken.

The director of amusements has not overlooked any bets in arranging his program for the afternoon and night shows, so there will not be a wait of a minute between races. A fashion show parade along a runway in front of the grandstand will show every class of gown from the evening creation to the bathing suit. Big circus acts, fireworks, boxing matches and a hundred other startling novelties, including a sensational parachute leap, will keep the crowd busy every minute.

If there is a feature which has been overlooked that would provide either education or entertainment for the patrons of this fair, in the language of the Southern gentleman, "It jist ain't."

SURVEY OF VENTURA'S SOILS

A thorough tillage of the soil rarely excelled anywhere distinguishes the agricultural methods of the well cultivated areas in the Ventura region, according to United States department of agriculture representatives who have made a soil survey of this section in cooperation with the University of California experiment station.

The results of the survey have been published in an illustrated pamphlet of 87 pages, together with a large soil map indicating in colors the various kinds of soils and their distribution. A study of the map, together with detailed comments in the text of the bulletin, will prove very much worth while to persons interested in determining the character of the soils on their property and their adaptability to various crops.

The investigators separate the soils of the area into four groups: Residual soils, or those derived from the breaking down and weathering of consolidated rocks; old valley filling and coastal plains soils, consisting of elevated and weathered unconsolidated deposits laid down in ages past by water; recent alluvial soils derived from sediments that have not undergone much change or internal modification since they were deposited and which are still in process of formation; and wind laid soils. The latter are confined to a narrow belt of drifting sand dunes along the ocean front. A striking characteristic of the soils of this region which lie near and slope toward the ocean is their relatively high content of organic matter as compared with soils of farther inland, and therefore less humid areas of the southern part of the state.

For the growing of sugar beets, the Yolo very fine sandy loam is considered best. It is thought probable that the culture given the beets aids in moving the alkali to lower depths, and this puts the soil in condition to grow beans. More than 95 per cent of the walnuts, another important crop, is grown on the soils of the Yolo series, mainly on the silt loam, fine sandy loam, and loam types. The investigators found that apricots thrive on a wide range of soils but are confined mainly to deposits derived from recent alluvial and old valley filling materials.

Anyone interested in learning the principal characteristics of the soil on his property should write to the United States Department of Agriculture, Washington, for a copy of this soil survey, which will be sent free of charge.

SOMETHING EVERY MINUTE

A NEW system has been inaugurated this year at the state fair which provides for a big and generous program of morning, afternoon and night attractions every day. In former years it was unhappily the custom to concentrate the big attractions on "Governor's Day," which worked an unnecessary hardship on visitors unable to arrange to visit the grounds on that date. The 1920 state fair will go down in history as a fair lacking any one big spectacular feature, but filled with those wholesome, entertaining and educative attractions which appeal to all ages, all tastes and all classes. Each day is so filled that it presents a never ending kaleidoscopic panorama of the state's best products, best music, best racing and biggest attractions. Hence, the visitor on any one day will feel that he or she has been well repaid for the visit. The tentative program including special days, is as follows:

SATURDAY, SEPTEMBER 4—"OPENING DAY"

"Agriculture Clubs Day"

Morning.—Judging poultry and rabbits.

Afternoon.—Two harness races; three running races; two dog races; auto hurdle act; Tiny Broderick parachute jump; "Airdevil" Panghorn in wing walking stunts; the five Avalons doing double wire performance; the Alf Golum troupe of Persian acrobats; Italian sextette in Grand Opera selections; Matheson's Military & Naval Band of 30 pieces; Boys' Band of Sacramento, of 30 pieces; Indian Boys' Orchestra of 10 pieces in Woman's Building.

Night.—Fireworks display; all circus acts, same as afternoon; Night Horse Show.

All Buildings Open Until 11 P. M.

SUNDAY, SEPTEMBER 5

Afternoon.—Band contests for \$3000 prizes, Military & Naval bands, Junior Amateur bands; all vaudeville attractions in front of grand stand.

MONDAY

"Sacramento Day"—"Business Woman's Day"

Morning.—Judging Holstein, Shorthorn and Jersey cattle, Poland China and Berkshire swine, Hampshire sheep.

Afternoon.—Same as Saturday.

Night.—Boxing match in front of grand stand; no fireworks; Dancing on Lawn Pavilion.

TUESDAY

"San Joaquin Valley Day"

Morning.—Judging Hereford, Ayrshire and Guernsey cattle, Duroc swine and sheep other than Hampshires.

Afternoon.—Attractions same as Saturday.

Night.—Fireworks; vaudeville attractions; Night Horse Show; No boxing.

WEDNESDAY

"Sacramento Valley Day"—"Cattlemen's Day"

Morning.—Judging draft horses.

Afternoon.—Afternoon attractions same as Saturday, including in addition the opening of the Kennel Club Show.

Night.—Attractions same as Tuesday.

THURSDAY

"Governor's Day"—"Rotarian's Day"

Morning.—\$1,000,000 Stock parade at 10 o'clock; Governor's Reception at Noon.

Afternoon.—Special Racing program and Bench Show; all afternoon and night attractions with special Rotarian stunts added.

FRIDAY

"Coast Counties' Day"—"Fruit Growers' Day"

Afternoon.—All afternoon and night attractions same as on previous days, including Bench Show.

SATURDAY

"San Francisco, Los Angeles and Farm Bureau Day"

Morning.—Demonstration Auction of Hogs by Farm Bureau officials; Auction of prize steer.

Afternoon.—Attractions same as previous days, with special stunts for San Francisco and Los Angeles visitors.

Night.—Attractions same as previous days, with Boxing Contests.

SUNDAY, SEPTEMBER 12

"Oakland Day"

Afternoon.—Band contests for Senior Amateur, Elementary and High School Bands. Afternoon attractions same as previous Sunday.

tired mother. Playgrounds also have been provided and every comfort offered the mothers and children.

The art department and the other features of interest to women will all be contained within this building. Rest rooms provide ample room for all and this year's fair may be visited in comfort by women with babies in arms.

The livestock classes have filled to the satisfaction of the directors of this important department. Over 1,500

goats will be here by the hundred. Pets and poultry never before seen in the show ring will grace the buildings set apart for the fanciers. A kennel show under the auspices of the American Kennel Club will attract dog fanciers from all parts and the night horse show always has been a big drawing card for the lovers of thoroughbreds.

Then there are the wonderful attractions, the harness and running races, two of the former and three of the

Agricultural News Notes of the Pacific Coast

Northern California

Butte County reports record number of forest fires during August.

Mendocino is planning a big county exhibit at the state fair in September.

The Southern Pacific has put on a special fruit train to handle shipments from Eldorado County.

Sonoma County board of supervisors has made an appropriation for display of exhibits at the state fair.

The Arbuckle, Colusa County, chamber of commerce is sending out premium lists for its almond fair.

The Live Oak Calf Club of Sutter County has made selection of calves which will go to the state fair.

The new evaporator of the farm bureau exchange of Eldorado County is now in operation at Placerville.

The first convention of the Sacramento Valley Draymen's Association was held at Chico, August 21-22.

The Livermore farm bureau center will hold its annual meeting and picnic on September 19 at Cresta Blanca.

The Eden Township Farm Products Show in Alameda County was this year bigger and more successful than ever.

Hop field inspectors say sanitary and housing conditions in the hop fields are up to state requirements in every way.

Colusa County has just filed four suits against rice growers for damage to county roads by flooding from irrigation of rice fields.

Prices named on prunes by the Prune and Apricot Growers Association are from a cent and a half to three cents higher than last year.

The application of the Pacific Rice Growers Association for lowering of the freight rate on rice 25 per cent is under advisement by the railroad commission.

The general committee of the Farm Products Show of Eden Township in Alameda County issued statement that the recent fair was a decided success.

Designs for the 1920 auto plates have been selected. The plates will be poppy colored and "Cal." will follow instead of precede the numerals as last year.

The Alameda County farm bureau home department devoted its last meeting on August 27 to reception to the new home demonstration agent, Mary G. Collopy.

Successful fruit packing schools were held in Eldorado County through cooperation of the farm bureau, University of California and the horticultural commissioner.

The federal public health service is investigating in the rice fields of Butte County to find out why mosquitoes breed in one field and not in another. Apparently the mosquitoes' choice of breeding grounds depends upon the character of the algae growing in the water.

Standardization of rice products is urged by Secretary Helleman of the California Farm Bureau Marketing Federation in a letter to the Glenn County Rice Growers Association. He further suggests sending Prof. Jaffa of the state university to a meeting of nutrition experts in Washington this fall.

Central California

San Joaquin County fair, Stockton, September 14-18.

The heat wave is passing and present weather conditions are fine.

Electric power users are greatly concerned over the continued shortage of juice.

Stanislaus County fig men are touring Merced and Fresno fig producing sections.

Lindsay has closed a successful cantaloupe season, the high price being \$6.50 per crate.

Bakersfield is planning for a Kern County cotton festival to be held Saturday, October 16.

Mono County is taking steps to protect its water supply and retain it on Mono County lands.

The Pacific Coast Labor Union is demanding \$7 to \$8 per ton or 75 cents per hour for vineyard work.

Horticultural Commissioner of San Joaquin County finds some Zinfandel grapes testing as high as 20 per cent.

One independent packer has announced New York prices of raisins four cents above raisin company prices.

Prune prices for the coming season on bulk basis range from 9½ to 25 cents per pound, according to size and quality.

Mariout barley, tested in San Joaquin Valley, shows remarkably successful production compared to common barley.

Modesto, Stanislaus County, is marketing its new crop of beans. Shipping does not begin usually till about September 10.

The California Farm Bureau Marketing Association continues to secure remarkably fine returns in all of its fat hog auctions.

Olive growers are concerned as to prices the coming season. So far no sales have been reported and present indications are that market will not be strong.

Investigation of vineyards and orchard trees shows material damage to fruit crops by the early August heat wave. Temperatures as high as 100 to 114 were recorded.

Cotton growers of Tulare County recently met at Lindsay and discussed matter of more complete organization of cotton growers and especially of securing sufficient ginning equipment.

San Joaquin County farm bureau meetings: Linden, September 8; Douglas, 9; Tracy, 10; directors' meeting, 11; county fair, 14-18; Lockeford, 13; Manteca, 17; Escalon, 20; Ripon, 21; Live Oak, 27.

San Joaquin County farm home department schedule: Manteca, September 3; Farmington, 7; Douglas, 8; River, 9; Escalon, 10; Ripon, 15; Lockeford, 16; Lodi, 17; Linden, 21; La Fayette, 22; Live Oak, 28.

Japanese associations, especially in the neighborhood of Lodi, Acampo and Woodbridge, are applying for articles of incorporation to "promote and protect union among the Japanese of America and maintain their rights."

Fruit dryers were startled at the light rain of last week, fearing a repetition of the hard rains of two years ago. However, no material damage was done excepting to table grapes, some of which were lowered in quality.

Southern California

The new Abbott gin north of Blythe has begun operating.

Escondido is completing its plans for Grape Day, September 9.

Ventura County reports: "Condition of Limas 51 per cent of normal."

Coachella Valley cotton harvest is on, the gin at Coachella starting on August 9.

Many a column of smoke has indicated forest or field fire during the past few weeks.

The first cotton of the season to sell from Holtville, Imperial County, commanded 35½ cents.

Poultrymen of Imperial Valley are getting together to form a cooperative marketing association.

Honey producers report season now ending as most successful; honey of higher quality than usual.

"Greatest goat milk producing center in the world" is the claim of Los Angeles County milk goat people.

Some cotton seed growers of the Palo Verde are holding for \$40. They say the \$20 price offered is preposterous.

A convention of the American Legion at San Diego declared in favor of the Colorado irrigation-reclamation plan.

John F. Osborne, recently selected assistant farm adviser for Riverside County, assumed his new duties September 1.

A Santa Ana hay dealer says that Orange County this year for the first time has raised sufficient barley for its own needs.

San Fernando Valley Fair and Market, September 15-18, at Owensmouth. Several thousand dollars will be distributed in cash prizes.

The Orange County Walnut Association will use the Gowen and White packing house at Santa Ana to handle this season's walnut crop.

A local center of the Riverside County farm bureau has just been formed in Coachella Valley. Organization meeting was held at Indio.

Coachella Valley had a half inch of rain the last week in August, accompanied by thunder and lightning. Indio was the storm center.

A number of Tulare County citrus growers will tour Southern California citrus sections this month. They will be in Riverside September 15.

Old folks of Southern California are asked to gather in Sycamore Grove, Los Angeles, Saturday of this week and have a jolly old folks' picnic. Only those above 70 are invited.

Yucaipa, San Bernardino County, is shipping Gravensteins. The fruit is higher quality than usual and the growers are supplied with improved packing house equipment as never before.

Some of the largest dealers and growers of cotton met in Los Angeles last Friday and discussed matter of quarantine which has caused some little friction between growers and authorities of California and Arizona.

Local farm bureau meetings will be held in Imperial County at Alamitos, September 7; Westmoreland, 8; Meloland, 10; Acacia, 13; Central-Highline, 14; McCabe, 15; Magnolia-Mulberry, 17; Seeley, 20; Alamo-Verde, 21; Lantana, 22; Mt. Signal, 24; Eastside, 27; Jasper, 28.

The Coast and General

Mint growing is a feature in Grand Ronde Valley, Oregon.

Mabton, Washington, will hold its annual hay palace fair September 15 to 18.

Bean jobbers at Denver estimate the commercial output of beans for that state at 600 cars.

Scarcity of water in many apple growing sections of Washington has seriously cut down the output.

Idaho will ship about 2000 carloads of fresh prunes to the East. These are mostly of the Italian variety.

A bonded cotton warehouse with limited storage capacity for the Salt River Valley is now an assured fact.

Many pear growers of the Wenatchee district of Washington report \$75 to \$80 a ton received for their fruit.

Several community inspection trips during August have been carried through by different farm bureau organizations in Washington.

A unit of the Oregon Dairymen's Cooperative League has been formed at Harrisburg, and a cheese factory and creamery will be erected at that point.

State tax levy for Arizona for 1920 has been set at 47½ cents; last year it was 60 cents. The county tax of Maricopa is 55 cents this year as against 73 cents last year.

From a small beginning the El Verjel Rancho Cannery at Chandler, Arizona, has grown to a point where they expect to put up 400,000 pounds of canned fruit during this season. This will be equal to 12 carloads.

Tillamook County, Oregon, fair, Tillamook, September 14 to 17; Hood River County fair, Hood River, September 17 to 18; Lane County fair, Eugene, September 21 to 24; state fair, Salem, September 27 to October 2.

Klickitat County, Washington, holds its fair at Goldendale, September 15 to 18. Walla Walla County holds its fair at Walla Walla same date; Adams County at Ritzville, September 16 to 18; Kittitas County at Ellensburg same date. The state fair will be held at Yakima, Washington, September 20 to 25.

It is stated that the federal horticultural board is considering the building of a big fumigation house at Nogales. This would have a capacity of ten cars. Products which might possibly bring from Mexico pink bollworm so disastrous to cotton would then be fumigated, greatly lessening the danger of importing this pest.

Rainfall over the ranges of Arizona has been rather more general than early in the season and has helped out pastures very materially over a considerable portion of the range. The rainfall has been light, but it is believed that there will be no serious shortage of either rain or pasture. Cattle generally on the range continue in good condition.

A pool of cotton representing a substantial number of bales sold recently in Phoenix for 85 cents a pound. There is some question as to whether this is considered the real opening market price for long staple cotton or not. Some growers have been confident of \$1 a pound, while some, not so optimistic, have expected that the opening price would be around 60 to 65 cents.

Summertime Motor Dangers

By James De Camp



As the thermometer rises owners of trucks, tractors and automobiles should increase their vigilance. California's warm weather will inevitably ferret out and bring to notice any latent weak spots in the anatomy of automotive equipment.

Tires, battery, lubrication and the cooling system demand more particular attention during the reign of summer than at any other time of year. Driving a machine does not require exceptional intelligence or long training, but keeping a piece of equipment on duty incessantly and economically is a science.

Overheating is one of the most common and disastrous of summer evils. Its prevention requires but a few minutes of time and, when one is working on schedule, a vast amount of patience. Fresh water should never be poured into the radiator until the temperature of the cylinder walls is such that the hand can be placed on the motor without discomfort.

This is a matter of five or ten minutes, yet many owners and operators will risk cracked cylinder walls and a steep repair bill rather than grant this short interval for the readjustment of the terrific temperature conditions existing within the motor.

If conditions prevent a stop of this length the best alternative is to introduce the fresh water with the motor running. Injury is less likely to result from following this practice, since the circulatory system churns the cool and the superheated water together, effecting a rapid fusion of temperature between the two.

The various units of the cooling system should be inspected occasionally to make sure that the water is circulating with maximum freedom and that no leaky joints or packings are causing mischief.

Lubrication is even more important in reducing the temperature of the internal combustion engine than is the cooling system. To run day after day and week after week without replacing the worn out vitiated oil in the crank case is comparable to using the same pan of water over and over again to wash your dishes.

The function of lubricating oil is to minimize the wear of surface against surface by interposing a smooth film of oil between. This oil is subjected to terrific heat and pressure and eventually loses its "body" or breaks down and conducts heat instead of resisting it. "Frozen" or burned out bearings soon result from continued delay in replacing oil in this condition with fresh, dependable stock.

Some engines, especially those that have seen several seasons of work, will render better service in hot weather on a slightly heavier oil than that used during winter. Thus many operators who use a light oil during the balance of the year substitute medium oil for the period from June to October as local conditions may warrant. Others replace medium with heavy oil. This practice results in placing a heavier film between the wearing surfaces during the months of highest temperature.

The general practice is to drain the reservoir at least once each thousand miles. By opening the drain cock or level indicator and drawing off a small quantity of oil in a can lid or some convenient receptacle the general condition of the oil supply may be noted. If the sample is dark in color and does not have a slick, slippery feel when pinched between the thumb and forefinger the oil supply should be renewed.

Flushing the crank case with kerosene after the oil has been removed is desirable providing no kerosene is allowed to remain in pockets or distributing pipes. If the oil system is of such a nature as to make depositing of kerosene impossible a full gallon or two flushings of a half gallon each should be used. Utmost cleanliness of funnels, containers, etc., is of course imperative.

If one has neglected to care for pneumatic tires his sins will find him out during the good old summertime. Then it is that the invisible fingers of the heat insinuate themselves between the layers of fabric, hunting incessantly for a spot weakened by under inflation, rim cutting, a neglected tread cut or some kindred evil.

Tires just recently put in service should stand the stress of the heated road while carrying their full load of pressure. Older tires that have seen several thousand miles of service or have worn down to the fabric should be inflated to within but five or seven pounds of their specified pressure when summer heat prevails.

Never commit the folly of placing a new tube in a casing that has seen the major part of its battle with the road. Many shekels are wasted by the American public through this common mistake which so frequently results in the rending of new rubber via the blowout route. If you have several old casings of dubious quality which you wish to wear out, postpone the experiment for cooler weather.

To get the greatest possible mileage from a set of tires it is necessary that each of the four units involved wear down evenly, losing its tread at the same relative rate as its fellows. This is impossible without a little well timed jockeying of the position of the tires.

The right rear tire will, of course, deteriorate more rapidly than the rest of the set, providing all are of uniform quality and age. The action of the differential in rounding curves and the wear of gutters, etc., make life a list of trials for this particular casing. When the right rear tire evidences a pronounced wearing down of the tread, usually after 2,000 to 3,000 miles of service, it should be shifted to the left rear wheel to balance the depreciation of the rear casings and the left rear tire be placed in the "wheel horse" position.

Later in the game, perhaps at 4,500 miles, the careful tire user makes a wholesale change in the position of his casings, usually placing the left front tire on the right rear and the right front on the left rear. At this time the casings should be inspected

(Continued on Page 277.)

Farm Power Exhibit and Service Demonstration



THE state fair offers a remarkable opportunity for an education as to farm implements, more particularly farm power, trucks and tractors. Presumably the auto exhibit will be near the entrance, as heretofore, and the truck, tractor and power exhibit near the south end of the race track, but

the arrangements of the tents and of the exhibits generally will make much more satisfactory display possible.

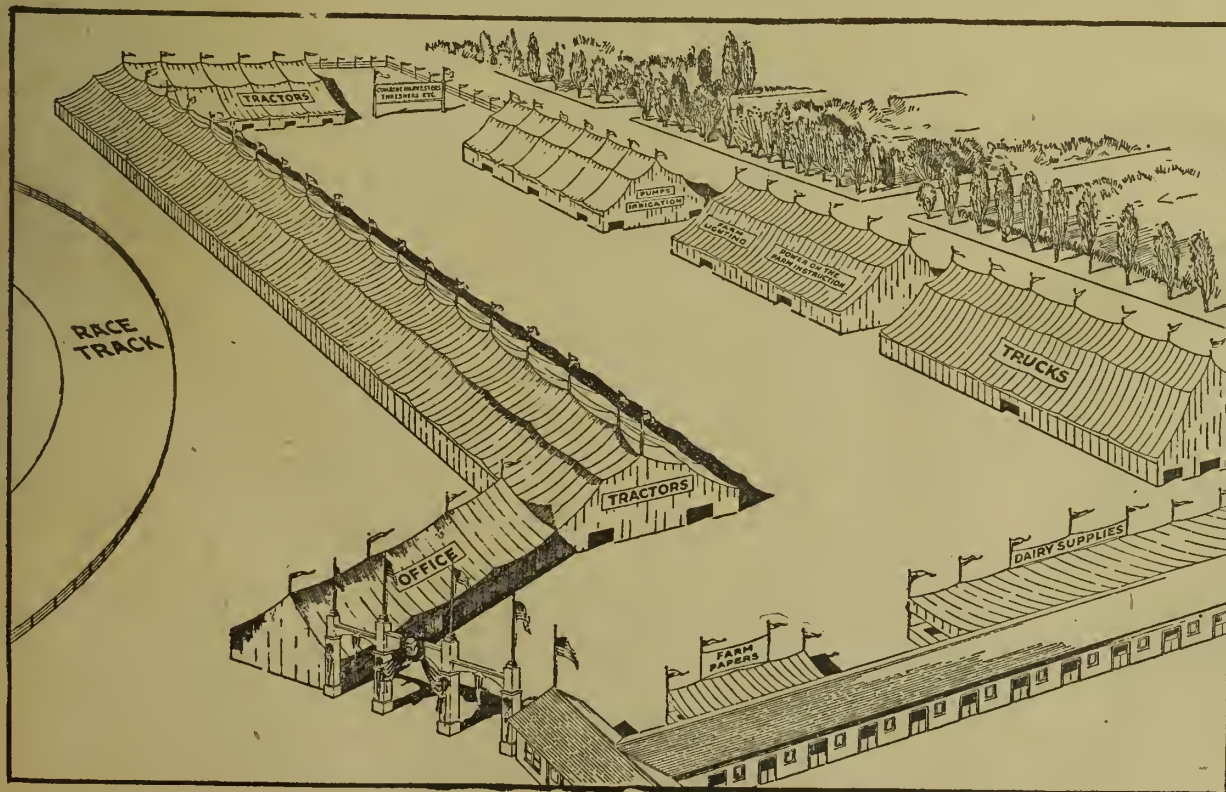
One of the most important features connected with this exhibit will be in the demonstration tent and in charge of Prof. L. J. Fletcher of the state university. There will be a big sign, "Repair and Adjustment of Power

Equipment," and under this sign Prof. Fletcher, with a staff of factory service men, will show visitors many of the things which mean so much in gas engine maintenance.

Prof. Fletcher remarks regarding this feature of the fair:

"Everything will be taught by steps. I call the plan we have in mind a

'cafeteria style' of instruction. Little groups of people will be given their chance in turn to learn one of the principles of gas engine maintenance after another. The tent will have an open space in the center for tables, chairs and displays of farm books and magazines. There will be an entrance on one side and an exit on the opposite side. The rest of the space around the walls will be divided into about 12 compartments, separated by



Where the Tractors, Trucks, Pumping Plants and Farm Power Exhibits will be made at the State Fair. The California tractor association is making an especially strong effort to gather one of the greatest exhibits of tractors, trucks, and power yet assembled on the fair grounds. Last year's exhibit was great; it was informal; it was an inspiration. This year's will exceed it in magnitude and as an exhibit of farm efficiency. It will be an opportunity for a liberal education.



George Collins.

railings. In each there will be a practical instructor conducting an informal school along the lines of his particular specialty."

The greater number of exhibits will be under direction of the California Tractor and Implement Association, of which George Collins is manager.



When You Flew a Kite *you recognized the value of three-point suspension*

Three-point suspension equalized the strain. With each gust or shift of wind the three leader-strings distributed the tension, and that's all that saved your kite frame.

Tracks and body-frame of the Best Tracklayer are connected on the same principle—at three points. Uneven strains and shifts of tension are taken up and evenly distributed. This relieves motor, transmission and frame from injurious twists and jolts. It means longer life for your tractor with fewer repairs. Tracks of the Best also oscillate independently, which lessens the bumps and jars and keeps ground traction uniform.

Design, materials and workmanship are the all-important factors in tractor success. Best Tracklayer design is the result of long years of tractor-building experience. So is the selection of correct materials for the different parts. Workmanship and plant equipment are the same as you will find in the plants manufacturing the highest-grade automobiles. The features that have made possible the reputation of the Best Tracklayer for power, dependability, long life and low cost of operation are described in our complete catalog. If you are interested in tractors we will be glad to send you this book. Write us.

C. L. Best Gas Traction Co.

SAN LEANDRO

CALIFORNIA

BEST TRACKLAYER SIXTY

60 H. P. at Pulley
35 H. P. at Drawbar



Shipping Point Inspection Service on Fruits and Vegetables



THE California department of agriculture, in cooperation with the federal bureau of markets, has perfected the establishment and application of grades and standards for fruits and vegetables, and the shipping point inspection service is now open to the trade. Inspections of carlots of fruits and vegetables will be made upon request by growers, shippers, receivers or other interested parties. Handlers of California fruits and vegetables in terminal markets should make application for such inspections as they desire through their California shipper.

Inspections will be made at the rate of \$5 per carload and \$2.50 for less than carload lots. A fee of \$10 will be charged for mixed cars containing five or more varieties or commodities. Inspectors will be located at the following points: San Francisco, Los Angeles, Sacramento, Stockton, Lodi, Fresno, Watsonville and Sebastopol, and others will be added as the needs warrant. Inspections will be made anywhere in the state as the facilities of the service may warrant. Certificates of inspection, receivable as prima facie evidence in the courts and practically identical in form with the certificates issued by the bureau of markets at the terminal market centers, will be issued on each carlot inspection. Inspections will be made at all the above points for the fees established. The expenses of the inspector will be added to the fee for all inspections made at outlying points.

Every car of apples moving from the Watsonville and Sebastopol districts this season will be inspected by duly authorized state inspectors and will carry certificate of inspection. The grape deal is manned by a corps of highly trained inspectors and requests for inspection will receive prompt attention. A corps of men will also be located in Southern California to handle the vegetable shipments from the Los Angeles district.

All receivers desiring to take advantage of this service should make application through their shipper. All shippers should make application direct to the local office of the inspec-

tion service or to the state department of agriculture at Sacramento.

F. W. Read, for five years connected with the federal bureau of markets, has been appointed to take charge of the work. L. J. Weishaar, formerly inspector for the federal bureau of markets in Kansas City and Chicago, will take over the active supervision of the inspection work, will give it the same thorough attention and will train the inspectors in the same thorough manner as the federal inspectors are trained. H. E. Truax, standardization and grading expert for the federal government, has been assigned to California to assist by making a thorough investigation of proper grades and standards for California products. H. W. Samson, in charge of the grades and standards project for the federal bureau of markets, will make a trip to California during the month of September with a view to training the apple inspectors in the Watsonville district in the proper method of handling a shipping point inspection service. The inspection service announces requests for inspection have been made for 8,000 cars.

While the federal government has for years maintained a system of inspection at receiving markets, no adequate system of inspection has ever been undertaken at the shipping point, and in undertaking this work the state department of agriculture fully realizes that trained men with a commercial viewpoint are essential to the success of the plan. Receivers having no personal representative in California may now obtain an impartial inspection by a disinterested third party, which should prove of value in making purchases. Shippers desiring to sell f. o. b. California or f. o. h. California acceptance will be able to make wide use of the inspection service.

The big grape deal which is now in full swing will receive careful and thorough attention and all receivers of grapes may make use of this service on any cars they desire. Inspections will also be made on Stockton potatoes and onions, either in Stockton, San Francisco or Sacramento, and as far as facilities permit on any commodities shipped from the state.

Fumigation and Cover Crops

By Ernest Branton



FUMIGATORS are most active now in all citrus districts and men, tents, and even the old fashioned cyanide pots may be seen from every well travelled highway. After the scales are killed the orchardists will prepare for the sowing of winter cover crops. The greater part of this work will be done during the first half of September.

Out in the Whittier section, east of Los Angeles, where soils are heavy, none could be found among the orchardists who were not going to sow mellilotus and generally a light sowing only. C. L. Trueblood states that he gets a good crop in his young orchard with about seven pounds of seed to the acre. This is quite in contrast to those who sow 30 pounds. He says that mallows, filaree and foxtail so fill up the soil that he cannot plow it all under and last year had to haul some off the land and use for hedging in the stable. Each year he sows broadcast, harrows it lightly, opens furrows for irrigation and so leaves the soil until time for disking in spring.

A nearby walnut orchardist said that in 1918 he had little time and did not irrigate either just before sowing mellilotus or for some time after. The crop scarcely grew at all until in spring just when he should have liked to plow it under, so he deferred plowing until May, when he had a fair growth. In 1919 he irrigated first, prepared the soil well and again irrigated after sowing. Results were highly gratifying, the crop being early and of great size. He said the best way to treat mellilotus is to give it a good start early. If it does not get this hoost before cold weather comes its development is slow and disappointing, yielding its best a full month

later than it should be turned under.

A neighboring lemon grower had rather an odd tale to tell. With a heavy soil he needed humus. Finding that he could get for the hauling all the "cleanings" from a nearby barley feed mill, he hauled tons of it into his orchard. He says that among other things it contained enough mustard seed to sow the entire country, with assurance of a good stand. If every other species of weed was not in evidence it was because the mustard choked it out. Now when he sows a cover crop the mustard so overwhelms it that the attempt to grow mellilotus or other preferred crop is as rank a failure as the mustard crop is a success. An orange grove in heavy black soil was found to have scaly bark throughout, up in the trees to a height of 15 feet. Dead wood an inch in diameter was thickly shown in all parts of the trees, though foliage color was generally good. A new owner had just taken charge and the dead wood was being cut, while a "tree doctor" was up in the tops scraping every scaly spot found and painting it with an asphalt mixture. It is expected this treatment will restore trees to their former vigor and healthful appearance.

IN A HURRY

A college student once asked President Eliot of Harvard University if he could not take a shorter course than the one laid down in the prospectus of the institution. "That depends," replied the level headed president, "upon what you wish to make of yourself. When nature wants to make an oak she works away on the job a hundred years, but if she only wants to make a squash she needs only about six months."



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EXTENSIVE rural experience, like that related above, has confirmed the tendency of farm land prices to increase when Goodyear Cord Tires are used to cover long or difficult hauling routes.

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GOODYEAR
CORD TIRES

Manufacture and Preservation of Cider

Cider has long been a most popular beverage. The demand for it during the fall months is seldom equaled by the supply. Certainly during seasons of high apple prices, like the present one, good cider is at a premium. It may be doubted, says V. R. Gardner of Missouri college of agriculture, if it is profitable to use for cider purposes fruit that can be placed upon the market as a first grade or even second grade product when these grades represent a value of over one dollar a bushel at the orchard; but in practically every orchard of good size there will be a portion of the crop that can and should be made into cider. This portion includes undersized, misshapen, mechanically bruised, scabby or spray injured but otherwise sound fruit. It is a mistake to think that low grade culls, wormy, underripe, partially decayed, or early windfall specimens will make good cider. The juice from such fruit may be pressed out, but it is suitable only for a low grade of vinegar. The quality of cider as a beverage, or for vinegar making, depends very largely upon the sugar content of the fruit juice, and this in turn is largely dependent upon degree of maturity of the fruit. Green, underripe fruit contains much starch but little sugar. Highest content is reached when the fruit is mature, when it is neither under nor overripe. The importance of proper maturity cannot be overemphasized if quality of fruit is an important consideration; for high sugar content is usually correlated not only with richness of flavor but with color and clearness as well. Likewise, it is difficult to overestimate the importance of cleanliness from the time the fruit is gathered and sorted for cider making until juice is pressed out, clarified, pasteurized and stored in containers. Dirt, dust and decaying organic matter of all kinds are laden with bacteria and yeasts that cause undesirable fermentations, cloudiness, sliminess, and deterioration in other ways.

Cider will keep sweet for a number of days, generally long enough to dispose of for beverage purposes to good advantage, if made under sanitary conditions and promptly stored in a cool place. The colder the storage room the better. It can be kept for weeks if at once placed in cold storage at a temperature of 30-32 degrees Fahrenheit. If desired for beverage purposes long after its manufacture in the fall, canning may be resorted to. It should be canned like any of the ordinary fruits, such as peaches or pears. Canning, however, imparts to cider a slightly "cooked" taste that is objectionable to many. A half cup of powdered ginger added to a barrel of fresh cider serves to check fermentation and keep it sweet for quite a while, especially when it is stored in a cool place. The ginger imparts some of its flavor to the cider, but this is not apt to be found objectionable.

Still another method of procedure is, immediately after being pressed out from the apple pulp, and before any fermentation sets in, to run the cider through an ordinary cream separator. This serves to remove particles of solid matter and gives a bright clear product. Then at once put in sterilized containers, such as bottles, cans, carboys, etc., and heat for one hour in a water bath at a temperature of 150 degrees Fahrenheit. This will sterilize the juice without producing a "cooked" taste and when hermetically sealed will keep for a long time. There are other methods of preservation, but they are more adapted to use in large by-product plants provided with equipment for clarifying, sterilizing, pasteurizing, bottling and refrigeration. The farmer who has only a few barrels of cider to dispose of can generally market it to best advantage in the fall shortly after it is made, or if he wishes to preserve it for his own use he can employ some of the simpler methods mentioned in this article.

Regulations for Packing Ripe Olives

For several years past in California a number of cases of botulism have occurred in persons who ate home canned fruits and vegetables, chiefly asparagus, corn, apricots and string beans. The reason that cases of this disease did not occur in persons who used commercially canned products is due to the fact that the intense heat to which most commercially canned products are subjected destroys the causative organism. Last year it was found that some packs of commercially canned ripe olives, not properly sterilized, were responsible for several cases of botulism in persons residing in Eastern states. The National Canners Association immediately provided a grant under which Dr. E. C. Dickson, Stanford University, Dr. Carl Meyer, University of California, and Major J. C. Geiger of the United States public health service started investigations to determine cause and prevention of botulinus poisoning. W. B. Cruess, assistant professor of zymology of the University of California, also carried on investigations from a commercial standpoint regarding the effects of various methods of sterilization of ripe olives against botulism.

These experts have now provided the California state board of health with data upon which regulations for the packing of ripe olives have been prepared. Accordingly, packers of ripe olives are now required to comply strictly with the food sanitation act in the packing, handling, cooking and other preparation of the product. They are also required to keep all holding solutions, holding tanks, separating trays, curing tanks and curing solutions, as well as the premises on which their operations are conducted, in a strictly sanitary manner, as provided by law. The board requires further that ripe olives shall be deemed adulterated, within the meaning of the California pure food act, unless they shall have been sterilized at a temperature of 240 degrees Fahrenheit for a period of not less than 40 minutes. The director of the bureau of foods and drugs is instructed to seize and quarantine all ripe olives that are not

produced in conformity with these regulations. Based upon the extensive investigations conducted by Drs. Dickson, Meyer, Geiger and Prof. Cruess, the California state board of health is convinced that all danger from botulinus poisoning due to ripe olives will be removed through the enforcement of these regulations.

DEPARTMENT ACTIVITIES

Out at Alhambra, Los Angeles County, where both state and federal governments have insectaries, experiment stations and laboratories, time works many changes. Messrs. Larsen and Simmons of the bureau of entomology have combined headquarters with Roy E. Campbell, specialist on investigations of insects on vegetables and truck farm crops. W. M. Davidson, formerly in the same building, investigating insect pests on fruit trees, has been called to Washington for instructions and will go to Virginia on insecticide investigations. D. G. Milbrath, pathologist, is in Washington for consultation and hopes to return with one or more assistants. These absentees and removals, with Mr. Woglum's going, make quite a change in Uncle Sam's forces at Alhambra.

ALTADENA AVOCADOS

On the site of the old West India Gardens, formerly a nursery for tropic and subtropical fruits, F. O. Popenoe has a very interesting collection of such plants formerly used as stock for budding, mainly of avocados. One new variety, the Atlixco, is believed to be confined to one tree here and one at J. T. Whedon's, Yorba Linda, where both are fruiting. Mr. Popenoe has 500 trees, consisting of 100 Fuerte, 50 Perfecto, 50 Grande, 50 Taft, the remainder of many varieties. With Mr. Popenoe the Cultivator man visited a beautiful young grove of Fuerte near San Gabriel, owned by W. F. Moomaw. There are 150 trees planted 24 feet apart, two years old, in splendid vigor.



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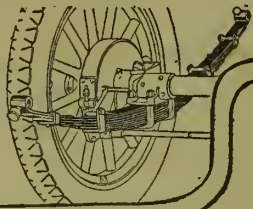
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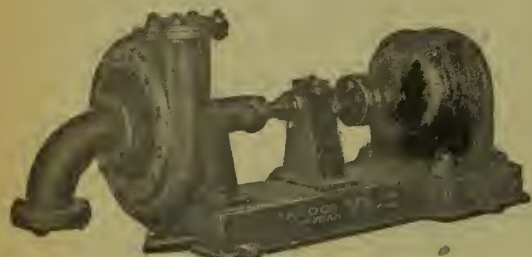


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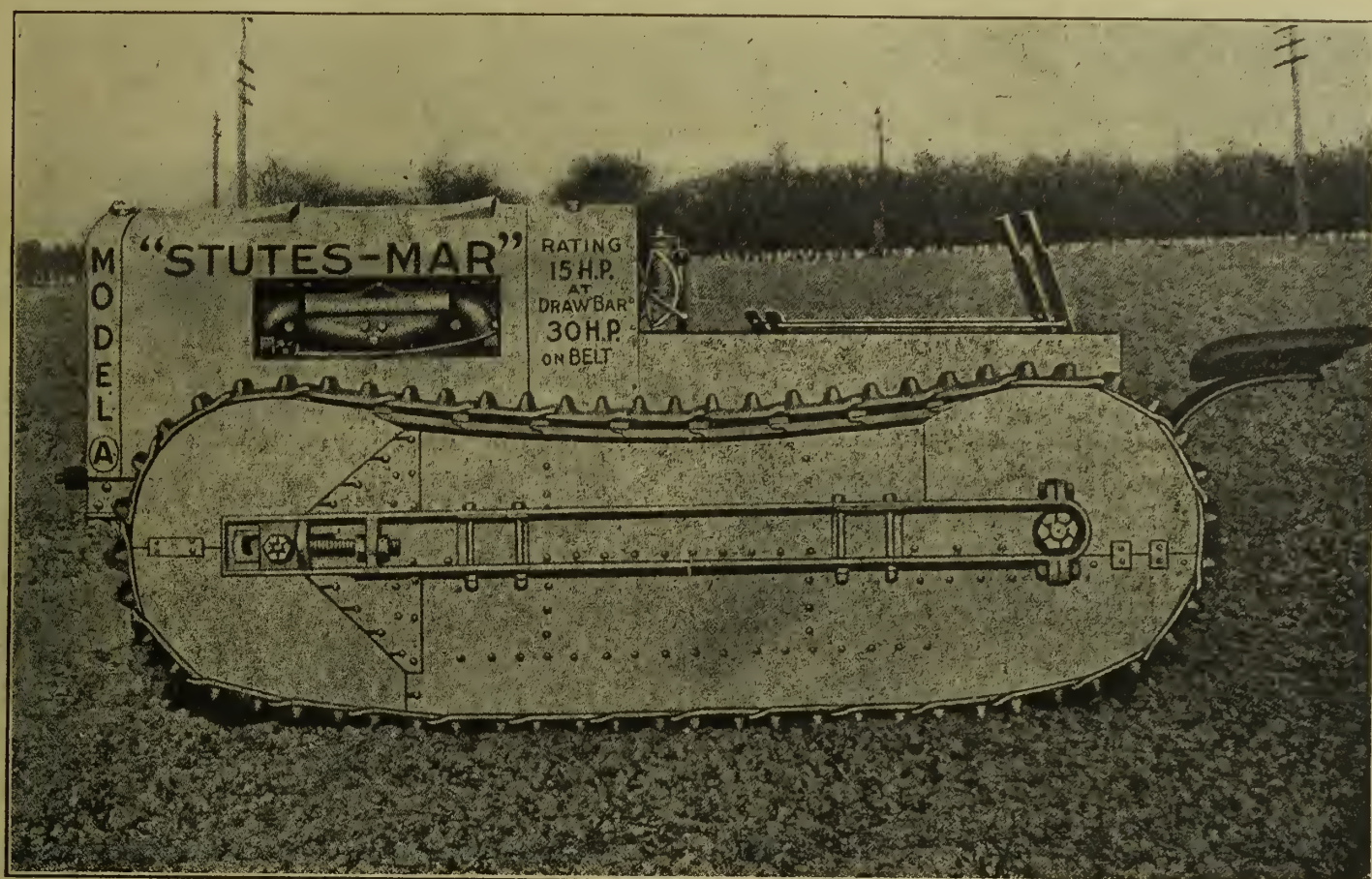
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Wise Men of East and West

THE business side of farming is coming more and more to the front. Formerly our state conventions and various county or section gatherings discussed questions of culture, questions of methods, how to do this or that for the crops, or how to do this or that for the purpose of killing certain pests. That custom has not been discontinued entirely, but many a grower today is saying "We can grow the crops, but who will sell them." California began a discussion of this farm business the first of all producers. At least it was one of the first to arrive at commercial methods, and these successful methods have been an inspiration for others of both East and West, for from Europe and our own Eastern

states delegates have come to learn of the wise men of the West, and from Australia and New Zealand they have come to the wise men of the East. Our last delegation came from the great wheat and corn belt of America. It was under the general leadership of the American Farm Bureau Federation. The delegation started under the direct leadership of President Howard of the federation. He came with the delegation as far as Denver, at which point cooperators in the marketing of wool gave and asked information as to marketing of that, one of the greatest products of the mountain states. President Howard then found it necessary to return. The delegation was met on their entrance to California and first given a view of cooperation as it affects

the producers about Riverside. Messrs. Wherrell, Valle, Fox and Neublung were members of the committee receiving and giving welcome and showing on their way the investigators. Additional glad handers from the Los Angeles chamber of commerce, the farm bureaus of Los Angeles and Orange Counties and all the cooperative organizations aided the visitors in securing information as to every angle of cooperative marketing. Complimentary luncheons or dinners were

fund of information, and we believe of inspiration, for the grain growers of the Middle West. California wishes them all kinds of success. The entire state is to be traversed after investigating Southern California conditions, visiting fat hog auctions in Kings County, learning as to raisin, peach, fig, dalry, prune and apricot cooperators. There was much disappointment in that President Howard of the American Farm Bureau Federation was un-



On the Heights of Orange County

The farm bureau marketing investigators were led in a merry chase by the Orange County committee, being taken over the skyline drive of Lemon Heights. The view from where the autos are standing is magnificent. Thousands of little farms and some great estates are lying at the foot of these hills. The view stretches on to the island of Catalina in the distance. The camera does not do justice to the wonders which were visible to the eyes of the visitors.



One of California's Finest Citrus Packing Houses

The packing house of the Placentia citrus growers. This building is wonderfully attractive in appearance and fitted with equipment more complete than any we have ever seen. The handling of fruit is almost automatic from the time the box is set on the carrier where the boy with bicycle is standing till the time it is carried out at opposite side of the building and loaded in freight car. The cost of this building and equipment is approximately \$120,000. The farm bureau marketing investigators were visiting this building at the time this photo was taken.

served at almost every stopping place.

The grain growers of the Middle West have a vastly more difficult problem than have the fruit growers of California. Take, for instance, the walnut or the citrus people. They are gathered together at a comparatively small section and are more at the mercy of unjust commercial practices than are the wheat growers. This necessity forces a getting together. The great distance from market is another factor calling for cooperative methods and the further fact that the products are more easily controlled or cornered by the trade also induces cooperation. In either case 10,000 or 15,000 growers make up the entire industry, while with wheat growers they are numbered almost by millions. But plainly the farm bureau movement has enabled a closer getting together and the few who visited California with open eyes are returning with a great

able to continue his trip this side of Denver. Other attendants assured California people that they would see that President Howard likewise would regret his not being able to observe California methods of cooperative marketing and enjoy California hospitality. Those who did come from the East were R. R. Bausman, county agent of White County, Indiana; J. G. Brown, president Indiana F. B. Federation; H. G. Beal, treasurer Ohio F. B. Federation; E. G. Nourse, professor agricultural economics, Ames, Iowa; H. Steen, Prairie Farmer, Chicago; Wm Eckhardt, business manager Illinois Agricultural Association; M. C. Phelps, Arizona F. B. Federation; C. F. Brown, president Arizona F. B.; Andres Kimball, president Arizona state board of agriculture; Dr. W. H. Walker, president California F. B.; J. A. Teagarden, chairman marketing committee California State F. B. Federation.

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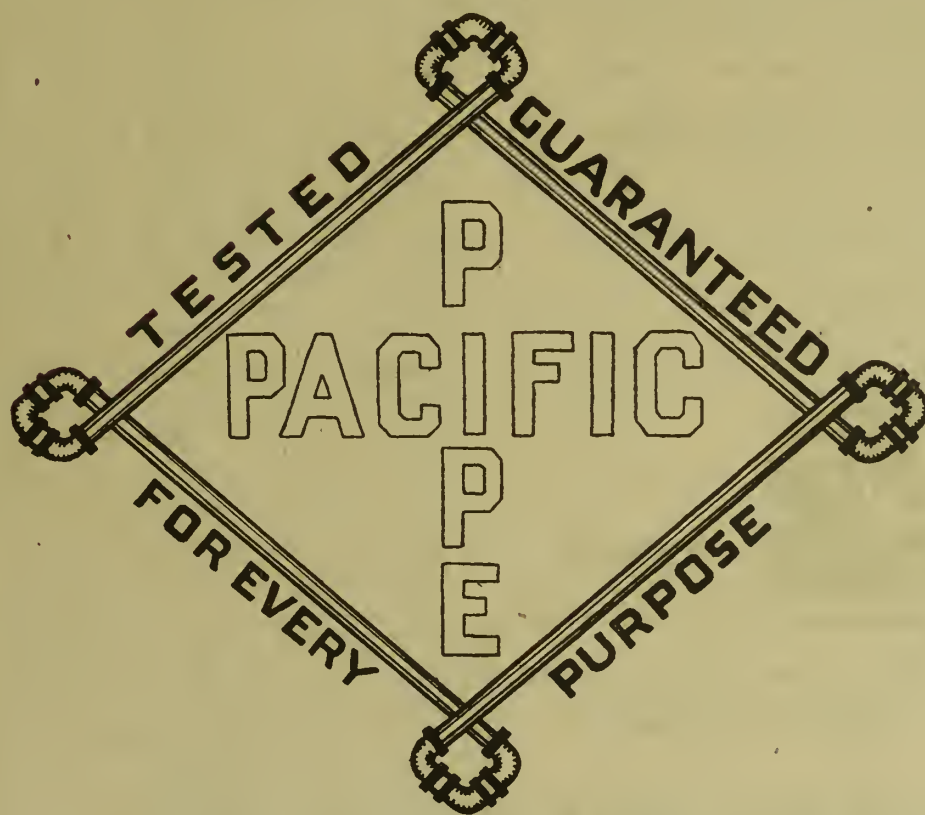
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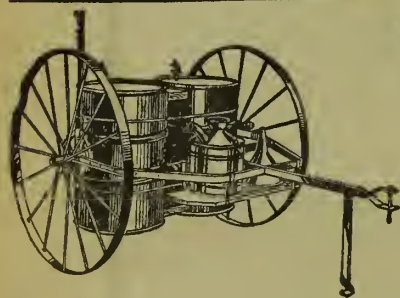
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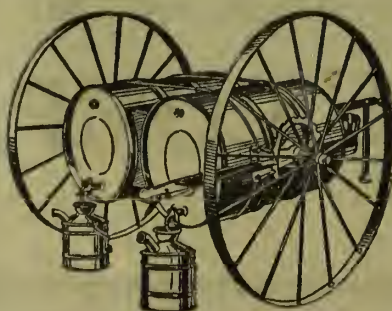
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THE FARMER AND WORLD TRADE

By E. W. Wilson

The author of this article and of others which will follow is E. W. Wilson, vice president of the Anglo & London Paris National Bank. He has made a special study of foreign trade problems and particularly of their relation to agriculture. All of these articles will be short and we trust of value in giving to Cultivator subscribers facts regarding trade relations.



THE American farmers should not pass lightly the statement made by the secretary of agriculture to the effect that their prosperity depends largely upon foreign markets. Something like one-fourth of the products of the farm find ultimate purchasers in the markets abroad. Sixty per cent of the cotton raised in this country is exported. In California alone the products from the prune orchard, the raisins from the vineyard, lumber from our forests, peaches, apricots and other fruits, canned and dried, are all exported in large amounts.

Widening Markets Stabilize Price

This fact is alone sufficient to warrant a campaign of education urging the study of international markets by all of our people. In this study of world markets it is necessary to become familiar with the various agencies that are brought into use in locating markets, in selling merchandise in foreign lands, in transporting and in financing these products.

All great world movements are preceded by campaigns of education. At the present time people located in the vicinity of export and import centers are interested in these market problems but until their interest extends back into the country and until the farmers who receive very large benefits thoroughly understand it, this country will not be engaged in international trade in either an intelligent or a substantial way. There is every reason why the cotton raiser of the South, whose cotton goes abroad; the corn producer of the central states, whose products are distributed throughout the world, and the raisin grower and prune producer of California, the price of whose products is largely controlled by the demand abroad, should be active advocates of international trade and fully informed on every angle that influences this trade.

To be effective in this educational work, the subject must be presented to those engaged in tilling the soil so that its relation to their profit account may be made apparent. The farmer does not differ from the man of the factory, the store or the accounting house. Like his fellow business man, he sees more readily and more clearly those things that yield him a profit. When he can reckon in dollars and cents the benefits he receives from foreign trade, he will at once be interested. This interest will be manifested in the sympathetic aid on the part of his congressman and other governmental agencies that he can influence.

Is the interest of those engaged in agriculture worth while? If it is, does it not become a problem of sufficient importance to enlist the aid and support of all who advocate a policy of helpfulness?

WATER POWER ACT FINDS FAVOR

Applications for more than one-half million horsepower have been filed with the U. S. forest service in connection with the water power bill signed by the president on June 11.

The increasing cost of fuel and the difficulties of its transportation have put a premium on water power, say forest service experts. It is expected that the legislation will mark the beginning of a new era in power development in the United States. Big developments are to be undertaken in the near future in the East, South and West.

The act applies to all power sites on public lands and reservations and on the navigable waters of the United States, including international boundary waters. Its administration is charged to a commission comprising the secretaries of war, interior and agriculture. Full details of the act, such as licenses, rates and service, may be had upon application to any of the departments named.

ARIZONA STATE FAIR

The Arizona state fair dates have been definitely set for November 8 to 13 inclusive. Preparations are being made for a worth while exhibit in all lines. Shirley Christy, secretary of the fair association, says: "It will be the special purpose of the commission this year to emphasize the vari-

Easy Now to Saw Logs and Cut Down Trees

Only one man, or even a boy, with the improved Ottawa Engine Log Saw can easily cut twenty-five to forty cords a day, and at a cost of less than 2c per cord. This machine, which outdoes all others, has a heavy, cross cut saw driven by a powerful especially designed 4 cycle gasoline engine. It's a fast money-maker for those using it, and does more than ten men could do, either cutting down trees, sawing logs, or buzzing branches while you rest. When not sawing, the engine can be used for other work requiring power.



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The entire machine is mounted on truck wheels to make it easy to move to the trees or logs, and from cut to cut on a log without stopping the engine. For moving on the road, the truck wheels are placed parallel with the skids and the rig hauled straight ahead. The wheels turn on a two-way spindle. You do not have to take them off, but can change direction of wheel travel by merely taking out a pin.

The Ottawa can be fitted for sawing down trees. It cuts level with surface of ground, thereby getting all the timber and leaving no stumps sticking up. An automatic friction clutch stops the saw in case of undue resistance. Two men can fall forty to fifty trees a day in ordinary timber.

The outfit is compact, simple, durable against a lifetime of hard wear, sells for a low price, cash or easy payments, guaranteed for reliable operation in the hands of every one who has trees to cut down and logs to work up.

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sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

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For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men \$5 per day for making the solution and applying same.

To create additional available plant food and prevent smut in grain, drill into the soil 110 pounds per acre of TORO BRAND SPECIALLY PREPARED AGRICULTURAL SULPHUR—or our DIAMOND "S" BRAND REFINED POWDERED SULPHUR. This soil treatment has increased various crops up to 500%. Send for Circulars No. 6, 7 and 8.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dusting Sulphur, Mixtures, etc.

Carried in stock and mixed to order.

SAN FRANCISCO SULPHUR CO.
624 California Street, San Francisco, Cal.

We are equipped to make immediate shipments. Send for Price-list and Samples.

Ask us for prices for Carbon Bisulphide, the surest remedy for destroying ground squirrels.

ous exhibit departments in a way they have never before been emphasized. To this end we have made a very careful selection of department superintendents and can assure exhibitors that they will be tendered fullest cooperation, and that a proper interest will be taken in their displays."

SUMMERTIME MOTOR DANGERS

(Continued from page 269)

carefully for cuts and bruises. If time allows it is also a good plan to remove the tubes and dust the inside of the fabric with talc.

This plan of rearrangement applies only to trucks and passenger cars beginning the season with an entire set of new pneumatic tires. When tires of various ages and conditions of servitude are used, only observation and condition can dictate the way to greatest service. One thing is certain—the man who places a tire on a wheel and runs it there until it becomes useless is sacrificing real hard coin in the shape of mileage.

A common summer tire peril in California is the softening and melting of crude oil in imperfectly surfaced roads. Crude oil and rubber mix with disastrous results—as far as the rubber is concerned. A piece of waste moistened with kerosene and a few minutes of vigorous sponging will antidote tire decay from this source.

Right here it seems apropos to address a plea to truck and tractor owners for the protection of California's incomparable highway and roads system. Many short sighted persons are damaging public property and increasing their own taxes as well as the assessments of others by butchering expensive road surfaces with tractors and overloaded motor trucks during the hot part of the day.

In many cases this is unavoidable, yet considerable damage could be prevented if tractor operators would change fields in the early morning or late evening when possible and would, whenever opportunity offers, seek dirt roads in shifting about. Ranchers along the Rio Hondo in El Monte district are setting a good example by using the firm sand of the river bed as a tractor causeway during the rainless months.

Modern motor equipment will not carry one far afield if the battery fails to function, unless he is so fortunate as to be equipped with a magneto as well. On the contrary, one would probably remain far afield for some little time, at least until a service car could arrive, if his battery should become overheated beyond the safety point.

This trouble is particularly liable to occur when taking a long run on a hot day. If the car is used steadily and the generator keeps the battery cells well charged the battery should be inspected for overheating several times a day when touring in warm weather. If the connectors on top of the case feel hot to the touch all the lamps should be burned until relief is noted. If a dairy thermometer is at hand, take the temperature of the fluid in the cells. If the reading is around 100 degrees, switch on the lights at once. A temperature of 120 degrees will, in most instances, send the battery to the junk heap.

Although the external appearances of a piece of equipment may seem to count for but little, the preservation of color and finish is a factor to be reckoned with in re-sale value. Agriculturists who protect their automotive equipment carefully from rain often permit the sun to damage appearances to a greater extent than moisture is capable of doing.

If there is a shady spot handy for your truck or tractor, make use of the opportunity to treat these dumb work-fellows with the same decency you would accord a horse. Remember that while clothes do not make a man they reflect character and personality. Likewise, the condition of your equipment shouts abroad your habits and your attitude toward your property.

RANGE OF THE GIPSY MOTH EXTENDED

The gipsy moth has been discovered in west central Pennsylvania on trees from a New Jersey nursery. Shipments from this nursery have gone to 14 states, and there is a strong probability that the moth is widely scattered at this time, but the utmost efforts of federal and state officials will be centered on its extermination.



See How Essex Proved Economy

A Nation-Wide Demonstration No Motorist Can Overlook

Connecticut—With 12 cars over Mohawk Trail and Hoosick Mountains and 12 over a coast route—many owner driven—216 miles average distance per car, 18.7 miles per gallon were shown. One car with 35,000 miles service averaged 21.2 miles per gallon.

Nebraska—A Hastings, Neb., woman drove her Essex from Lincoln to Hastings, 109 miles, averaging 28 miles per gallon.

California—Four women drove from Los Angeles to San Francisco and return averaging 22.3 miles per gallon. A San Francisco Essex made the round trip, 846 miles, in 33

hours with 23 miles per gallon. Hood and radiator sealed. **San Antonio, Tex.**—In a 166 mile run to Austin and return Essex averaged 25.5 miles per gallon.

Sacramento, Calif.—Defeated 19 entries and took Tallac Cup for highest gasoline, oil and water mileage in Sacramento Dealers reliability run.

Baltimore, Md.—Essex sedan, on original tires with 15,000 miles service, traveled 221 miles over Maryland hills, averaging 23 miles per gallon.

Florida—On a measured gallon an

Essex covered 23 miles and without change or adjustment of any kind showed speed of 68 miles per hour.

49 Cars Average 18.9 Miles Per Gallon—Records cover every kind of test at a speed of from 5 to 72 miles per hour.

Los Angeles, Calif.—To San Francisco over 828 mile route of steep grades and frequently far from water supplies Essex which had previously gone 28,000 miles and under U. S. Marine observation made trip sealed in high gear with sealed hood and sealed radiator. Average 22.8 miles per gal. gasoline.

Also Broke World's Dirt Track Record---1261 Miles Made at Dallas, Texas, by a Car That Had Already Gone 12,000 Miles

From the mere standpoint of gasoline mileage, Essex in its nation-wide tests showed a performance worthy of cars which possess that advantage as their principal quality.

Records were kept on 49 cars. They averaged 18.9 miles to the gallon.

But bear in mind this was not done by taking advantage of every device possible to increase gasoline mileage. Under conditions of that sort, Essex showed as high as 37 miles to the gallon. However, men don't drive that way. How obviously unfair it would be, therefore, to offer such carefully economized fuel mileage tests as typical of all Essex cars.

In the Essex tests, conditions and performances adverse to gasoline economy obtained.

These cars were being driven at speeds from 5 to 72 miles per hour. They were reeling off

thousands of miles over all sorts of roads in inter-city runs that set new time marks. They were making new hill-climb, acceleration and endurance records.

Many were owner cars—owner driven. Women piloted some.

Some of the Essex cars used had already traveled upwards of 30,000 to 35,000 miles.

So you must not view Essex economy merely by its gasoline consumption. You must also consider its endurance and reliability.

If there were nothing more striking about the Essex than its gasoline mileage, it would be a worthy subject of our advertising. But important and impressive as that fact is, does not its other qualities take first rank in your consideration?

Essex Motors, Detroit, U.S.A.

(216)



WATCH the ESSEX



HERCULES

The REAL Ranch Engine
300,000 in Daily Use

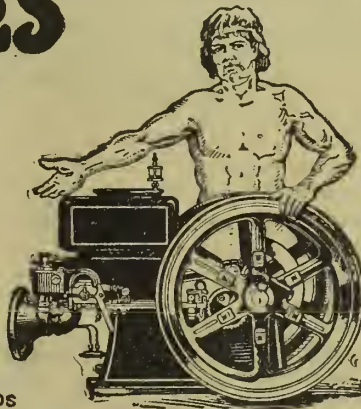
BEST CONSTRUCTION
LOW FIRST COST
LOW OPERATING COST
HERCULES RELIABILITY
UNFAILING POWER
WHEN YOU WANT IT
WHERE YOU WANT IT
AND AS YOU WANT IT

BUILT IN SIX SIZES
1½ h. p. to 12 h. p.

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SMITH-BOOTH-USHER-Co.

PUMPS-ENGINES-MOTORS-MACHINERY SUPPLIES
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Forty-third Year

CALIFORNIA CULTIVATOR

A Journal of Horticulture, Agriculture and Livestock
 Rural Californian, Established 1877
 Combined with California Cultivator 1914
 Livestock and Dairy Journal, Established 1901,
 Combined with California Cultivator 1916

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Saturday, Sept. 4, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

THIS WEEK'S COVER

Anyone who has been at the state fair on "the big day" and has tried to negotiate the grandstand at the tragic moment in the afternoon is reminded of the sights, the sounds, and the smells by a look at the cover. This scene shows only about half of one of the grandstands. There is another, nearly back of where the camera stands, of equal capacity, occupied even as to standing or sitting room as is this.

It is worth a trip to the fair to see the crowd.

ORGY OF LYING

After those farm bureau delegates had visited a few sections in California and had been lunched and dined a few times, Prof. Nourse of Iowa referred to "an orgy of competitive lying in which California shone." We do not recall much of the context other than that the speaker finally admitted that there was much of truth in our lying. As usual, the Californians' stories were substantiated by credible witnesses, all of which added to the brightness with which Californians shone. The trouble is with Easterners it takes them a long time to arrive at a full realization of California's conditions and opportunities

Here's hoping that Prof. Nourse returns to California and qualifies to enter the competition.

PRES. ROEDING'S DREAM

Our readers may recall that on the cover of the Cultivator of July 3 there appeared a photo from the model of the California fair grounds. This model was made out of the head of George Roeding and some of the other members of the board of directors. In other words it was a dream and the dream is coming true. The dream has to do with exhibition buildings and equipment for displaying California's agriculture. It will take some years to complete the dream but the one \$300,000 horticultural building, now practically in the center of the fair grounds, is an earnest of the things that are to be in other parts of the grounds. Designs or even the details of these buildings are already worked out by the architect and year by year steps will be taken which will work toward one completer whole.

We recall well our first visit to the state fair. It was in the days when the "grounds" were close in, in fact in what is now one of the denser populated portions of the city of Sacramento. The horticultural building was separated from the fair grounds and in the Capitol Park. The center of this horticultural building, or rather pavilion, was covered with tan bark and the elite of California gathered in the evening to see six-in-hands,

nia's 117,000 farms should give stronger support, both financially and morally, to a movement which will mean far closer cooperation, and cooperation spells success.

FAIRS

This is agricultural fair season. Two of California's county fairs have already been held and their story appeared last week and will appear this week in the Cultivator columns. About the time this paper will be received by our readers the California state fair will be opened at Sacramento. President Roeding, Secretary Paine, the whole board of directors, the whole clerical and working force have been working day and night getting ready for this, the big agricultural event of the state. We wish it were possible for every reader of the Cultivator to attend this fair. We will have several of our staff on the ground to tell us later of livestock, of implements and machinery, trucks and tractors, horticulture and field crops, manufactures, educational matters, activities of the state department of agriculture, commissions, and other activities and appliances which will be there represented. But no matter how great the abilities of these writers, nor how many of photographs the Cultivator camera shall be able to secure, we will still be unable to visualize—we will still be unable to give the full lessons which may be secured by personal inspection or examination of

OPEN TO ALL AND NO STRINGS

The columns of the California Cultivator are absolutely free and open to any farmer on the Pacific Coast, whether a subscriber or not, for the answering of any question pertaining to any branch of farming. These questions will be answered absolutely free of cost. If you are a subscriber and your neighbor who is not has some perplexing question to solve, have him send it to California Cultivator, 115½ North Broadway, Los Angeles, and the question or questions will be answered. No one will be required to sign any agreement or subscribe for the paper.

Why contract for information service? The California Cultivator gives it without strings.

four-in-hands, tandems, coaches and saddlers. The enclosure between the grandstand and the track, out at the grounds, was filled with almost as many bookmaking stands as there were people. The path around and under the grandstand to a bar, somewhere near a hundred feet long, combined with the bookmaking stands to give an appearance like unto that at Tia Juana of today. Them wuz the days of the ponies—and for a high old time. Today is the day of agriculture.

FINANCE THE BUREAU

While the visit of the delegates from the Middle Western states was made in California in order to secure information as to marketing of farm products it resulted also in bringing to California people an inspiration to more vigorous action along farm bureau lines. They were live people and they spoke of real live doings. For instance, California has succeeded in raising its annual dues of the members of the farm bureau from \$1 to \$2. Probably in doing this a few members have been lost. Illinois has raised membership dues from \$10 to \$15, while Iowa considers the cause and accomplishments, likewise the needs of the future, worthy the fee of \$25. These are days when it costs money to finance any large movement which means advancement. Leaders cannot secure results unless backed by hearty support of membership and by use of sufficient capital. Califor-

animal, implement or product. An agricultural fair is one of the most educational functions of our state, county or district institutions.

There are sensational features and stunts of various degrees of attractiveness which will draw thousands of pleasure seekers. We hope the thousands of knowledge seekers will outnumber them.

OTHER FAIRS

The state fair monopolizes much of the Cultivator space this week. The state fair, however, is not the only fair, in fact there are a great number of these educational events held in California this year. These vary from a one day combination picnic and farm products event to a full week of a "regular" fair. The dates and places of these events are given in another column of this issue. One of the newer ones to enter the field is San Fernando Valley. A fair is combined with a public sale event which will attract attention to that section.

The Southern California fair will be held at Riverside. Riverside is no novice. She has had several years' experience, and last year's showing of livestock, agricultural products, implements, farm power, art products and manufactures showed her to be entirely up to the minute in fair management.

And Fresno, almost in the exact center of California's great territory, and also, in the center of that rich San Joaquin Valley, will show of her rais-

ins, her livestock, her peaches and figs, in fact of all her agriculture in a more generous way than ever.

San Diego farm bureau will use liberally of the beautiful Balboa Park, site of the 1915 exposition, in the exhibit of the agriculture of that county.

Ventura County is getting ready as is Tulare, both of which have rich resources which will be gathered and shown.

Los Angeles is to have two great exhibits. One of livestock which will be gathered from all portions of the state and even from the Middle West and the Mountain states. The tractor, truck and farm implement people hold later at Verdugo Park a great exhibit under the auspices of the national association.

Every one of these events have great educational possibilities. The Cultivator will bring the lesson so far as possible and yet urges its readers to get the lessons at first hand.

Besides, over the Colorado at Phoenix, plans are in the making for a great state fair which will represent the products of a great portion of the Southwest. Various other agricultural counties are also working for an exhibit of their wares.

STATE FAIR NOTES

One of the slogans of the state fair will be "More Power on the Farm." More than \$500,000 worth of "Power on the Farm" machinery will be displayed at the California State Fair, by the California Tractor and Implement Association. In 1915 the Pacific Coast states as a whole had about 3000 tractors. There were about 23,200 on June 1, 1920. The movement has been so recent that most of them are still in operation. Tractors are not yet being scrapped.

It is announced by Superintendent of Exhibits Kavanagh of the state fair that all boys entering calves in the classes for special prizes, or in open competition, must act as their own herdsmen during the period of the fair. "The fundamental reason for awarding these prizes is that the young men may become proficient in the actual care and feeding of the animals," says Kavanagh.

In livestock there are over 2000 entries.

The judges in horticultural classes will be Dr. J. C. Whitten; L. B. Scott, formerly with the U. S. department of agriculture and now with the California Bud Selection Association; H. J. Eustace, professor of horticulture, Michigan Agricultural College; J. B. Fox, and W. S. Killingsworth.

The kennel show is to be one of the features during the dates of September 8, 9 and 10.

The state department of agriculture will feature a laboratory during fair week in which will be illustrated some of the methods employed in official testing.

The art gallery promises some exceptionally fine showings of great artists.

Auto economy run is one feature which will begin and end at the state fair.

The poultry show promises better than any former exhibit.

Agricultural Clubs Day will be Saturday, September 4.

Kern County will exhibit Pima cotton.

Horticultural commissioners will have charge of several county exhibits.

California cattlemen will meet September 8 on the state fair grounds in the counties' exhibit hall at 10 o'clock. Governor Steptens has been invited to speak, as have Director Hecke of the state department of agriculture, Judge Shields, President Bixby, Dr. Iverson, Dean Van Norman, Prof. Baldwin and Secretary Wilson of the agricultural legislative committee.



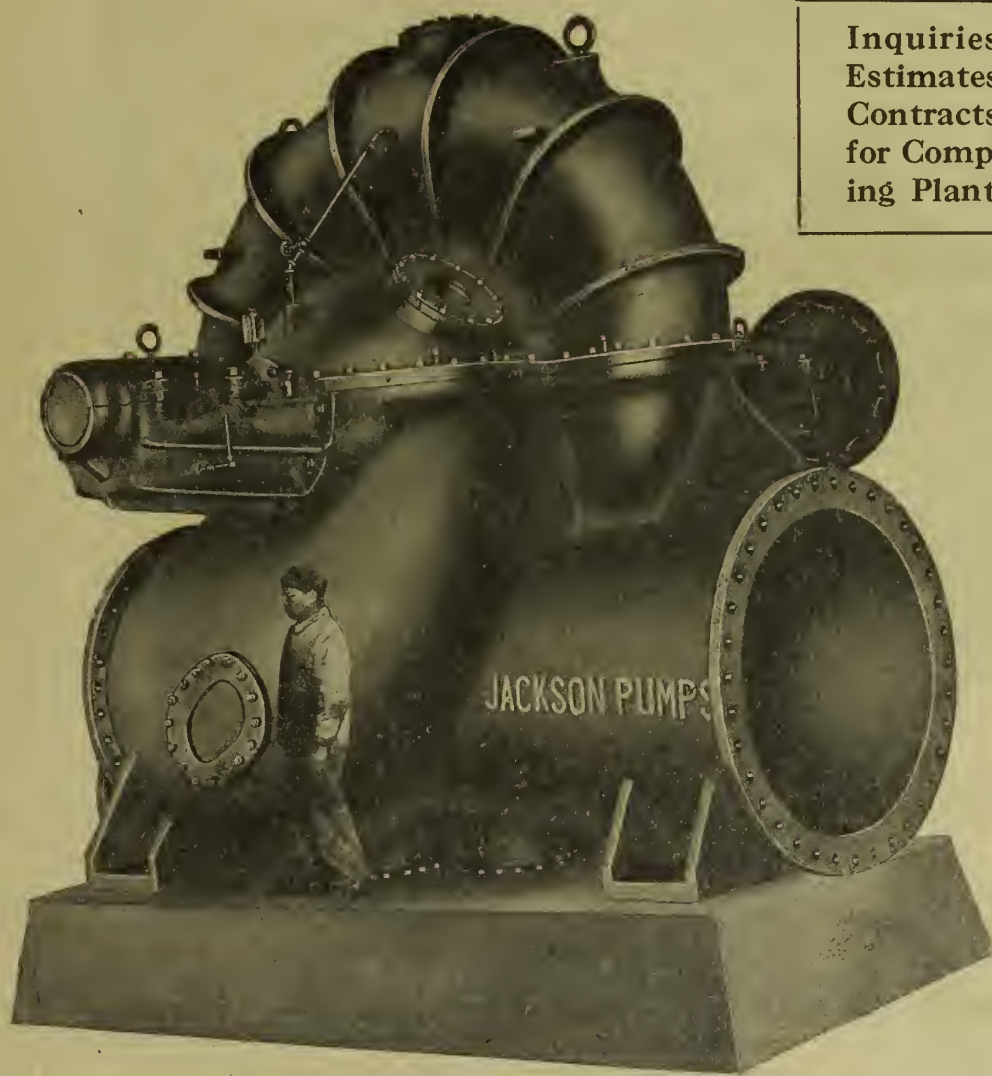
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Walnuts and Markets

ARLYLE THORPE, general manager of the California Walnut Growers Association, is now in the East making a trade survey and gathering data which will be of value in the disposal of the 25,000 tons of walnuts which California will soon be harvesting. Mr. Thorpe sounds a word of warning that greatest care must be used in marketing these nuts and, further, in so shaping our national affairs that these industries may be guarded from great loss because of present international trade conditions. For instance, exchange rates between this country and all European countries are greatly in favor of America, that is, the American dollar is pre-eminent while the unit of value in the European countries has depreciated to a half, a fourth or possibly a tenth of face value.

We have spoken of lemons being at a disadvantage because the American dollar is worth practically \$4 in Italian money, while even in France it is worth nearly \$3, and France ships many a walnut to us. Mr. Thorpe estimates that more than 50,000,000

pounds of European walnuts have been laid down in Eastern markets during the past nine months, which is a greater quantity than any previous importations in any 12 month period. Mr. Thorpe says:

"Owing to the terrific break in foreign exchange Europeans are shoving practically all their walnuts into our markets where the dollar reigns supreme. The advantage they gain when the returns are changed into their money affords them a good profit despite the fact that they are offering their walnuts here at less than the actual cost of producing California walnuts.

"Unless a reasonable protective tariff is placed upon such importations to offset Europe's ridiculously low cost of production and the advantage she gains by reason of her lower standard of living, the California walnut industry may suffer a long period of unprofitable production. We may be forced to face such conditions as are causing California lemon growers to suffer heavy losses at present. They are compelled to dispose of the highly standardized California lemon in competition with the low grade lemon from Southern Europe. If this condi-

tion continues for long it will probably result in the grubbing out or budding over of many valuable lemon groves in Southern California.

"This country will make a grave mistake if it fails to give its horticultural interests suitable protection against such competition. It is a fact that during the war the fruit growers of Southern California strained every nerve to produce bumper crops with which to feed the world in an emergency, and unless such industry is given proper encouragement those who are engaged in it will become discouraged and quit the business, making the country largely dependent upon Europe which, it has been fully demonstrated, is not in a position to supply any considerable amount of food to outsiders, and only resorts to the sale of citrus fruits and walnuts in this country because it knows America has the ready money to buy products which cannot be marketed elsewhere to advantage.

"The gathering of this year's crop of California walnuts will begin about two weeks later than usual. The harvest, it is believed, will be in full swing early in October. The crop will amount to 80 or 85 per cent of last year's production, which broke all records. There will be approximately 46,000,000 pounds of high grade nuts. They are of better size than for several years. The quality is better than

usual. The meats are filling out with nice, light, plump kernels.

"It is thought that the bulk walnut pack will bring the growers from \$10,000,000 to \$13,000,000 and that from \$1,000,000 to \$2,000,000 will be derived from the sale of shelled walnuts meats and charcoal which is made from the shells. Barring the remote possibility of a heat wave and untimely rains, the present crop will mature in fine shape.

"Owing to the erratic condition of the market since the arrival of European walnuts in large quantities, many independent walnut buyers and brokers in this country have retired from the field, and there has been a regular landslide of walnut growers to membership in all the old cooperative associations as well as the five new cooperative associations which have been organized this year and affiliated with the California Walnut Growers Association. New associations have been organized at Simi and Santa Ana, in Santa Clara and Contra Costa Counties, and in the San Fernando Valley.

"Each of these new organizations will operate its own packing house this fall. Several hundred thousand dollars have been spent in recent months to modernize all of the association packing houses with the latest equipment so they can handle this year's harvest as fast as the nuts can be delivered, and in that way get the crop to market promptly. The new walnut packing house at Puente, which cost between \$175,000 and \$200,000, is a good example of the modern association plant. More than 80 per cent of this year's walnut production will be handled by the associated growers.

"It is the opinion of association officials that the handling of so large a percentage of the production under one management makes it possible to transact business more economically, sell the product at reasonable prices and at the same time return a greater sum of money to the producers. Attention is called to the fact that the California Walnut Growers Association, which at the beginning of the year adopted a new selling plan that does not guarantee the price for an entire year, but sells the crop subject to market fluctuations from day to day, has again pioneered in a new field, since the federal trade commission only a few days ago published a report on recent investigations, in which practically all changes in the Walnut Association's selling plan were recommended to other shippers of food products.

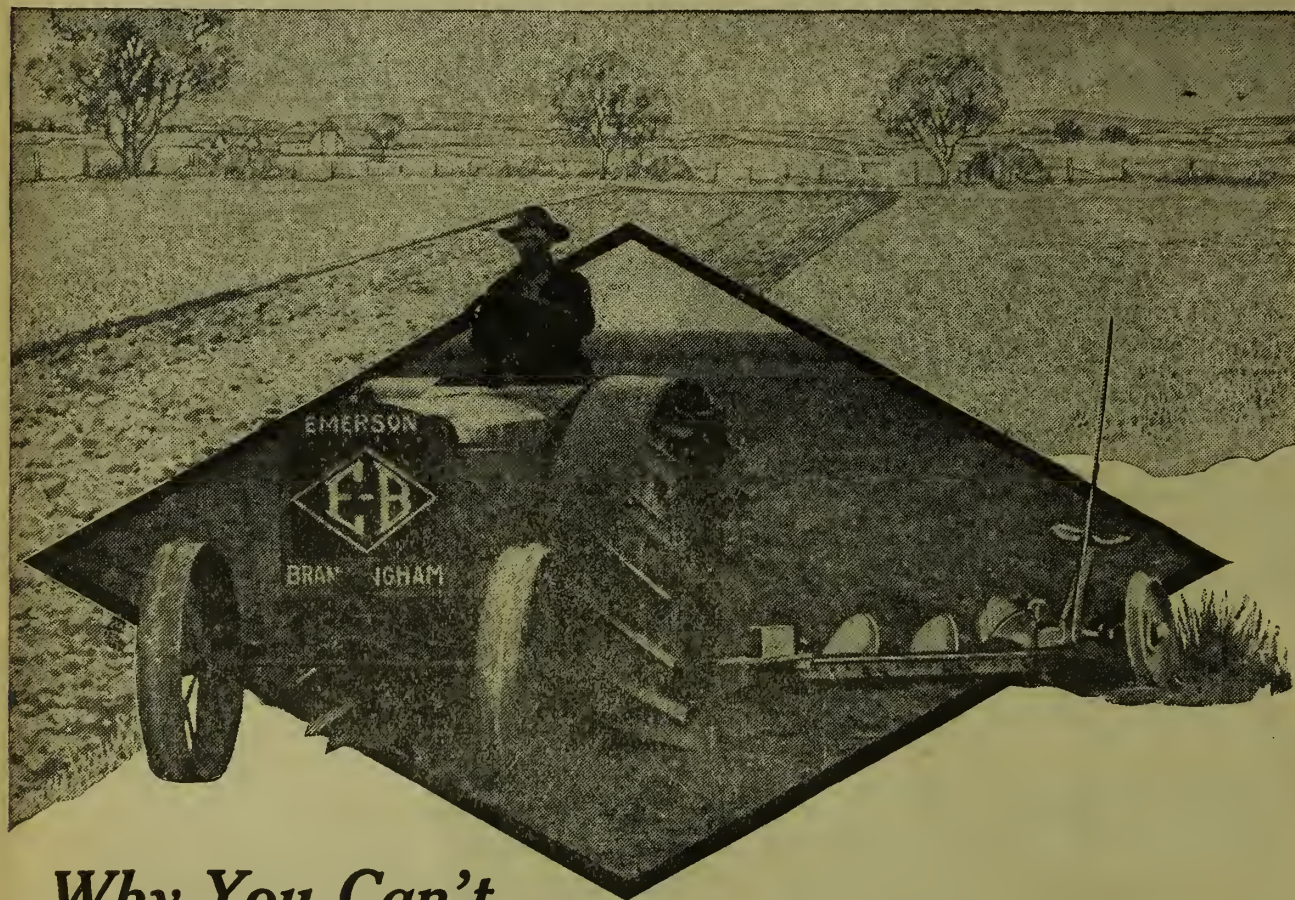
"The association is advised that the fact that it took the initiative in this move which is recognized by the federal authorities is likely to result in similar plans being adopted and followed by packers of food products in general. The new policy has been given the hearty endorsement of the National Wholesale Grocers Association, as well as that of the various district associations."

CANNERS ENCOURAGING AGRICULTURE

The canners of the country have united in a National Canners Association, and as one feature of the new organization have formed a bureau through which a study of the problems of farmer and truck grower will be made. The work of the new bureau will be largely research and investigation. It is planned to work as much as possible in cooperation with state and federal agencies engaged with the same problems. In this connection the bureau will serve as a means of bringing to the attention of the scientific leaders of the country problems connected with the production of canners crops. It is recognized that work already performed by state and federal agencies has been of great value to the industry.

In the bureau of raw products research, however, there will be a sort of central clearing house where the results of all investigation and research carried on throughout the country can be brought together and used to the advantage of those various sections of the industry which can use it most profitably.

San Diego County citrus growers, who accompanied the party of farm bureau members which toured Southern California citrus groves recently, report interesting and instructive trip.



Why You Can't Overwork An E-B Plowing Outfit

NEVER mind how hard the ground, or how hot the day, an E-B plowing outfit goes right on turning land, as many hours of the day as you want to drive it. What makes a plowing outfit as dependable as this? No one feature, nor for that matter, a dozen. Only the longest experience, under the widest variety of farming conditions—and then a manufacturing organization big enough and far-sighted enough to utilize all the lessons of that experience.

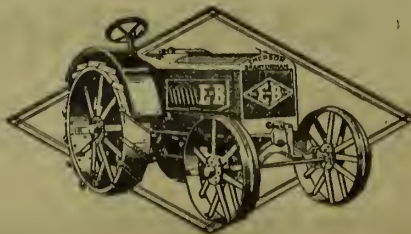
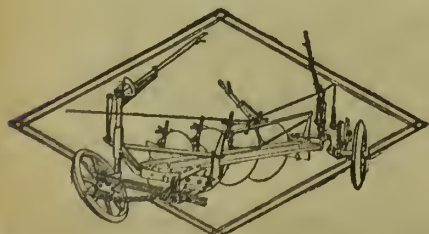
Sixty-eight years of implement making have taught us what is necessary for dependable service. A manufacturing organization of vast extent builds this knowledge into E-B plowing outfits.

Ask Your Dealer

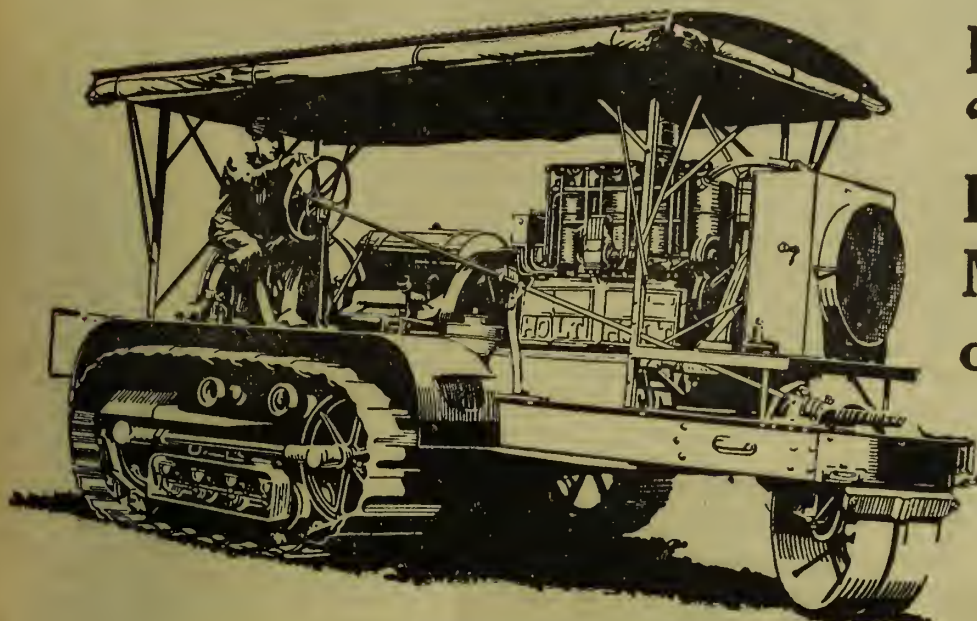
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Established 1852

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A Complete Line of Farm Machinery Manufactured and Guaranteed by One Company



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Don't underestimate your power needs. Don't try to do heavy tractive work with inadequate power. Overloading causes 60% of all upkeep expense. Eliminate that 60%. Buy a "Caterpillar" 75 Tractor—a machine with plenty of power for pulling an 11½-foot land leveler, the biggest size ground drive harvesters, a subsoiler or deep tillage plows, absolutely without danger or fear of overloading.

Remember that the extra big power of the "75" entails little additional first cost or operating expense and no extra labor or maintenance cost. Every week in the year there are times when you'll wish you had that extra power. *Play safe on power*, as well as on service, on durability, on performance—make your choice a tractor of proved performance—the "Caterpillar" 75 Tractor.

"Caterpillar" 75 Tractor stands first in power—it has become the standard machine for deep plowing, subsoiling, chiseling, leveling and other heavy work.

It stands first in economy, using less fuel and oil than other tractors of considerably less horsepower.

It stands first in accomplishment—results behind the drawbar. It is geared right—on direct drive it handles a big width of plows at the proper plowing speed.

It stands first in accessibility—a more important advantage than most people realize, for in the course of a year it means a considerable saving of the time necessary for cleaning, oiling, adjusting, etc.

"Caterpillar" 75 Tractor works on any ground surface without power-loss due to slippage. It turns as short as the implements can follow. Its durability is proved by the fact that the first "75s" built, seven years ago, are still in successful service. It is backed by *real* factory service, that insures success and eliminates delays in the field. It is built better, especially since the adoption of rigid Government standards during the war, than any other tractor.

You can get immediate delivery of a "Caterpillar" 75 Tractor if you place your order without delay. Buy now and be equipped to do your work properly, economically, quickly.

Remember This—
"Caterpillar" 75 Tractor
Is by Far the
Most Powerful Tractor
on the Market Today

The "45"

The "45" is a big tractor in power and capacity for work—a small tractor in its ability to do the light power jobs economically and to work in orchards; small, irregular shaped fields, etc. There's a special low-built, shield-protected model for orchard work that every orchardist should investigate.

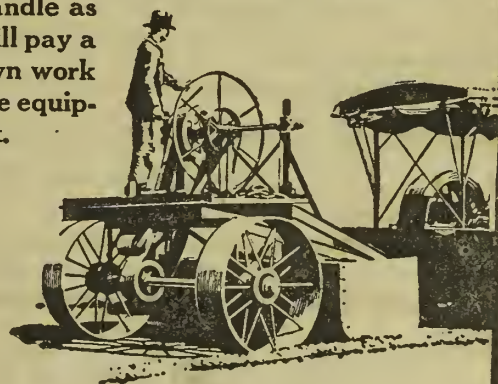


"Caterpillar" Disc Plows

The "Caterpillar" Disc Plow is adaptable to every kind and condition of plowing—extra deep plowing, soft land, Bermuda grass, side-hills—convertible into a moldboard plow if desired. The only four wheel plow built. The only plow that positively overcomes side draft. Plows any width without running the tractor on plowed ground. Besides all these features it has the strength and durability that eliminate breakdowns and delays in the field.

"Caterpillar" Land Levelers

Here is a tool that will do your leveling at minimum cost and in just the way you want it done. It's as simple as an anvil, as easy to handle as a wheelbarrow. It will pay a big dividend in your own work and is highly profitable equipment for contract work.



THERE'S ONLY ONE

CATERPILLAR

Builds U.S. Tractor

HOLT BUILDS IT

The Holt Manufacturing Company

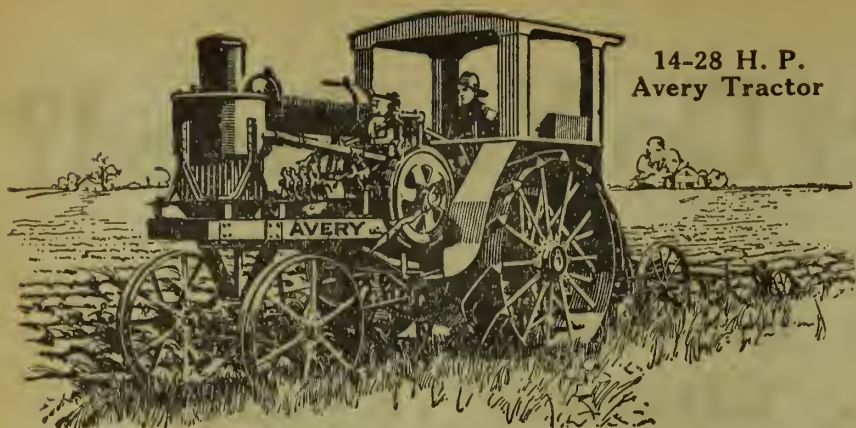
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Representation in every
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Get Your AVERY Now for Fall and Winter Work

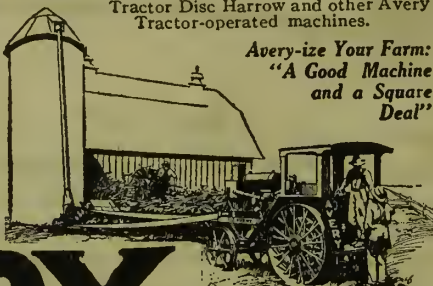
Get your Avery Tractor NOW when it can give you the most valuable service in your fall and winter work. Avery owners use their machines the whole year around—winter as well as summer. Think of the belt work you could do with your own Avery on the job. Not only get your fall plowing, discing and seeding done on time, but fill your silo, saw wood, grind feed and do other jobs. The extra work you can get done with an Avery Tractor this fall and winter will help to pay for a big share of its cost. Now is the time to get it.

You can get an Avery Tractor outfit to exactly fit your size farm or the kind of power work you have to do. Avery Tractors in sizes from 8-16 to 40-80 H. P. are built with the famous Avery "Draft - Horse" Motors and "Direct - Drive" Transmissions. They have Renewable Cylinder Walls, Adjustable Crankshaft Bearings, Gasifiers which turn kerosene into gas and burn it all, and other features which enable Avery Tractors to give unusual service.

There are also two small sizes of Avery Tractors, 6-cylinder model "C" and 5-10 H. P. model "B." Ask for special circulars describing these machines or

Write for the Avery Catalog

Also learn about Avery Roller-Bearing Thrashers and Silo Fillers, Avery Motor Cultivators, Avery "Self - Lift" Plows, "Self - Adjusting" Tractor Disc Harrow and other Avery Tractor-operated machines.



Avery-ize Your Farm:
"A Good Machine
and a Square
Deal"

AVERY CO.

3909 Iowa St., Peoria, Ill.

Branch Houses: San Francisco,
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Calif.

**Motor Farming, Threshing
and Road Building Machinery**

TEAGUE TREES

Stand Supreme For Growth and Productiveness

You can't afford to buy anything but the best if you expect remunerative returns from your grove.

CITRUS TREES

Ours are the best that can be produced and always give satisfaction. Why take chances on inferior stock?

AVOCADOS

We still have a few extra fine field grown trees of the recommended varieties ready for immediate delivery.

FEIJOAS

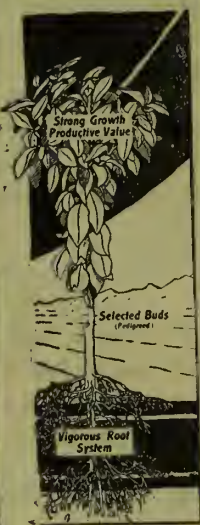
Every garden should contain at least two plants of this delicious fruit. Will grow any place in California. Send for our new descriptive price list.

The R. M. Teague Nurseries

Box A

San Dimas, California

Founded in 1889 by R. M. Teague



Save Your Crops

The labor of an entire year may be swept away by one night of frost. Save your crops by installing the

"Bolton" Orchard Heater

Burns cheap fuel oil. Can be lighted quickly. Produces maximum heat, evenly distributed. Burns a long time on one filling. No waste—you light only as many as required to keep desired temperature.

SEND FOR BOOKLET "C"

Tells you how to save your crops the Bolton Way. Filled with valuable frost prevention information.

Ames-Irvin Company

Irrigation Pipe, Orchard Heaters, etc.
8th and Irwin, San Francisco, Cal.

A NEW WRINKLE IN PRUNES

By Ernest Branton



MORE than 600 prune orchardists gathered at the A. R. McClay Ranch five miles from San Jose on August 26 to witness a practical demonstration of an electric prune picker. This device works on the same principle as a Chinese endless chain bucket pump, except the "buckets" are canvas pockets on an endless canvas belt. The picker is light and easily handled by a ten year old child. The operating power is electricity, but as Mr. McClay is a mile or more from a feed wire the "juice" was furnished by a portable Delco light machine recently purchased for home and orchard use.

The writer asked at least 40 visitors as to their opinion of the merits of the picker and they were unanimous in the statement that in its present state it was not an improvement over hand picking so far as cost is con-



Prune Picker In Action

Ten year old girls operating a couple of the Hurd electric prune pickers. Lower picture shows more of detail of the cups on the carrier which takes each prune to the bag or bucket.

cerned. But not all were pessimistic over its future. Said one: "We made much fun of the first automobile, a little coughing, wheezing, shaky inefficient machine, but look at the latest. This picker needs improvement but the fundamental principle is a good one and should not be lost sight of. We need improved methods for harvesting prunes."

At present the machine picks up but one prune at a time and the operator has to touch the nose of the machine to each one. One could do it as quickly by hand if young and alert. It may, however, save many a back from aching, for the operator stands upright, the machine is light, and the prune is picked from the ground and elevated by electricity. From the upper end it drops through a canvas spout or guide into a bucket fastened by straps to the leg of the operator. While not a great success it may be the forerunner of a valuable labor saver.

Pear Growers:

Pear Blight has destroyed millions of dollars in property values, and is a standing menace to every pear orchard.

Scientists believe no district is PERMANENTLY immune — that sooner or later it is likely to appear in EVERY pear orchard, as conditions occur favorable to its development.

They are convinced—after 140 years' study — that ABSOLUTE PREVENTION of blight is not possible so long as we grow our present varieties, which belong to the blight-susceptible European species.

Some species of Asiatic pears are wonderfully resistant to blight. In the GREATEST SCIENTIFIC EXPERIMENT in blight-resistance ever conducted, Dr. F. C. Reimer, of the Oregon agricultural college, proved beyond question that the species *Usuriensis* (first discovered growing along the Usuri river in eastern Manchuria) was MORE RESISTANT TO BLIGHT than any other known.

Scientific investigators agree that the MOST PRACTICAL SOLUTION of the blight problem is to plant our orchards to trees whose roots, trunk, and main-limb crotches shall consist of a species practically blight proof, budding or grafting the branches with our commercial varieties.

Seedlings of cultivated types of *pyrus Usuriensis* are ideal for this purpose, being extremely vigorous, forming a well-branched, round-headed tree, and making good union with our commercial varieties. When budded or grafted in the branches, BLIGHT DANGER IS ELIMINATED below the point of union.

Such trees will double the value of pear orchards; blight control will be simplified; and the great expense and loss incidental to blight infection in the roots, trunk, and crotches, will be saved. We are so sure of this that we agree to REFUND THE PURCHASE PRICE of any such tree if killed by blight within ten years. This is LIFE INSURANCE for your orchard—something no nurseryman ever offered before.

Many of the leaders in California pear growing are planting our seedlings in orchard rows — husky, "stocky" trees, 3 to 6 feet high—and will top-work them next season to Bartlett, etc. This practice will effect a substantial saving over the price of similar trees nursery grown, and has the sanction of the best authorities. We follow this method in our own orchard and will plant ten thousand seedlings in orchard rows next spring.

Unfortunately, owing to frequent failure of the Chinese pear crop from frost, the seed supply is irregular; and we do not know when we can again offer seedlings when this season's supply is exhausted. For this reason the man who cares enough for his pear orchard to wish to make it one of the best, and who wishes the GREATEST MEASURE OF BLIGHT-PROTECTION that scientific men have devised after 140 years' study of this disease, will need no urging on our part to prompt him to at once make sure that his order is booked before our limited supply is sold.

The price: \$40.00 per 100, straight; less than 100, 50c per tree; no orders accepted for less than 10.

Considering all essential points—affinity for the commercial varieties, vigor, shapeliness, habit of growth, etc.—we believe *Usuriensis* seedlings are incomparably superior to any other pear stocks now in use, and that their use in connection with top-working as recommended constitutes the most important advance in American horticultural methods for more than a century, so far as pear growing is concerned.

Loma Rica Nursery

Pear Specialists

A. L. Wisker, Mgr. Grass Valley, Cal.

NOTE.—All pear men, whether planting this season or not, who are interested in the subject and who will send their address, will be sent free a copy of a bulletin on blight-resistant stocks which we shall publish this fall. We still have a small stock of pears in usual varieties on Jap root, and a few apples; sold on all other stock.

HYDROCYANIC ACID GAS GENERATOR

James W. Van Meter of New York, inventor of a chlorocyanic gas process, has been in California conducting a series of tests in tree fumigation. The apparatus used consists of a retort containing sodium cyanide mixture in one chamber underneath which is a capillary moisture and chlorine diffuser. Chlorine gas under pressure from cylinder enters retort at base and becomes charged with moisture in passing through diffuser. The intense heat developed by the chemical reaction of the moist chlorine and sodium cyanide mixture rapidly liberates the cyanogen from the latter in the form of chlorocyanic gas. Mr. Van Meter asserts that this manner of generating the gas lessens danger of injury to humans for there is no handling in the field of the liquid or



New Method of Daylight Fumigation

Inventor Van Meter standing behind the tank of liquid chlorine with small generator on ground underneath tripod. One feature making for safety in the use of this appliance is the smoke or cloud of gas which gives warning and lessens danger to humans.

other chemicals. The illustration shows the compactness of the apparatus with its automatic register of amount of gas used. The inventor adds:

"If chlorocyanic gas in tree fumigation be used with an excess of chlorine, the chlorine by its gravity will remain at the base of the tree, killing all insects that may have fallen and at the same time destroying all detrimental vegetation around the base.

"For underground fumigation and animal extermination chlorocyanic gas is used with an excess of chlorine. The chlorine by its gravity acts as the distributing agent or medium carrying with it to the lowest depth the deadly cyanogen."

This process, due to Mr. Van Meter's ability as a manufacturing chemist, has been given thorough test by the Argentine Republic in destroying many agricultural pests, and its success there has induced the Justinian Caire Company to introduce it to the Pacific Coast, though it is not at present on the market.

NATIONAL TRACTOR SHOW

Recognition of the National Tractor and Implement Show to be held September 20 to 26 at Verdugo Woodlands, Glendale, has been received from many official sources. Several days ago the commercial board of Los Angeles placed itself on record as solidly behind the show, making one more influential body of men to boost for the first agricultural exhibition of national scope to be held on the Pacific Coast. The show will be held under the immediate auspices of the Tractor and Implement Dealers Association of Southern California, and has also the endorsement of the California Tractor and Implement Association of San Francisco, the Portland Tractor and Implement Association and the Northwest Tractor and Power Farming Association. It is sanctioned by the National Implement and Vehicle Association, the big parent organization of the prominent manufacturers

of implements and vehicles throughout the United States.

The big feature of unusual interest is the bringing together of all the well known makes and models of modern farm machinery, exhibited to best advantage, giving the prospective purchaser opportunity to compare at close range the various makes. The show will be in every sense a practical business show for busy farmers. There is every reason why the National Tractor and Implement Show of the West should prove to be the huge success that is anticipated. In the past tractor shows of great success have been held in Kansas City under the active direction of Guy H. Hall, the man who is at the helm in the Western show and who has been very actively on the ground for several weeks.

The many changing conditions in agriculture and the manufacture of equipment have definitely confirmed the need for such exhibitions. This need has increased steadily with the rise of new angles in scientific agriculture and the increasing demand for better and more versatile and adapt-

able equipment. The National Tractor and Implement Show of the West will be a monster exhibition which no farmer or implement man can afford to miss.

ORANGE COUNTY FAIR

One of the interesting exhibitions of Southern California's farm produce will be the Orange County fair to be held at Huntington Beach October 7-9. Orange County is famous for her diversified production, raising nearly everything under the sun, and the 1920 fair will undoubtedly show excellent samples of the staples as well as the rare in fruits and vegetables. Walnuts, oranges (Valencias), lemons, apples and other fruits will be shown, along with all the other county products, oil, sugar beets, avocados, beans, persimmons, potatoes, etc. The women will have a chance to show their canning, preserving and baking art. The poultry department will be unusually large, and one of the four large tents will be devoted to auto, truck, tractor and accessories displays.

D. W. McDannald, Orange County's

publicity man at the Los Angeles chamber of commerce, who arranged the county's exhibit at the Riverside fair last year, will assist in procuring and placing exhibits for the fair at Huntington Beach.—Wayne Goble.

PHYLLOXERA SURVEY

R. L. Nougaret, viticulturist with the state department of agriculture, is making a survey of vineyards of Fresno County. The survey consists in determining as to which areas are infested with phylloxera. Later a bulletin will be issued, showing by means of maps the correlation which exists between phylloxera infestation and different types of soil.

The acting secretary of agriculture has signed the pink bollworm of cotton quarantine, applicable to Louisiana and Texas. It is effective August 1. The operation of the quarantine is restricted to areas known to be infested or suspected of possible infestation, but this restriction is conditioned upon enforcement by the states concerned of certain necessary control measures.

As Standard as the masterpiece parts of which it is built

10-INCH Single Plate Dry Disc Clutch	MUNCIE Standard Transmission	STEWART Vacuum and Speedometer	ZENITH Automatic Carburetor	JAMESTOWN Cellular Radiator	CONNECTICUT Standard Ignition
DYNETO Starting and Lighting. EXIDE Battery					C. A. S. Steering Gear STANDARD Universal Joints
NEW DEPARTURE Ball & TIMKEN Roller Bearings					FIRESTONE Tires 33x4
HERSCHELL- SPILLMAN 4-Cylinder L-Head Motor					SALISBURY Wheels & Axles

The greatest and most modern factories in the world have contributed something to the excellence of this remarkable car. Each of these leaders in parts manufacture, dedicates all of his energy, equipment and resources to a single purpose—the maintenance of pride and reputation for excellence on some one part of the TULSA.

Such nationally famous units and parts, as listed above, are recognized as the best by the foremost automotive engineers, dealers and experienced motorists. Their reliability is beyond question—proven by the fact that they are features in some of the highest priced cars built.

Check and compare the TULSA specifications—not with cars at its price—but with those costing from \$300 to \$500 more. You'll find every important TULSA part in some car costing \$2,000 or more. The TULSA establishes a new value in moderate priced cars.

Touring Car---Oil Field Specials---Roadster
Price \$1550 f.o.b. Factory

The TULSA

TULSA AUTO MANUFACTURING COMPANY - TULSA, OKLAHOMA

Pacific States Automotive Co., State Dist.
585 Mission St., San Francisco, Cal.

Guarantee Motor Co., S. Cal. Dist.
1136 Figueroa St., Los Angeles

Alfalfa Bulletin

Dr. W. P. Kelley's investigations in alkali waters and alkali soils is briefly summarized in Circular No. 219 of the agricultural experiment station, college of agriculture, Berkeley. This is from the address delivered before the annual conference of farm advisers last March. The summary of the bulletin is:

Drainage, especially if it be accompanied by flooding, is a reasonably successful means of removing white alkali from soils. Other things being equal, the degree of success will depend upon the readiness with which the water penetrates into and percolates through the soil mass.

If large amounts of black alkali occur ordinary drainage will probably not restore the land to a state where crops will succeed unless the black alkali first be neutralized in the soil mass. As yet we have not found an economical means of neutralizing large amounts of black alkali, especially where it occurs in the subsoil. Consequently we are not ready to make definite recommendations concerning this point. In other words, ordinary drainage, even when accompanied by flooding, cannot be relied upon to remove black alkali. This should not be interpreted to mean,

however, that we do not believe in drainage as an important step in the reclamation of white alkali land where the water table is high, or as a means of lowering the water table.

Lands containing only comparatively small amounts of black alkali, especially if the black alkali occurs mainly in the first foot of the soil, can probably be successfully reclaimed by drainage, provided an application of gypsum also be made. However, unless an application of gypsum be made, or some other agent producing similar effects, the probabilities of success with such soils are not assuring.

With such soils as occur on the Kearney ranch and probably with loams and clays generally, we believe it desirable, in fact frequently necessary, to apply some such material as gypsum before flooding, even though black alkali be practically absent. This is for the reason that a very poor physical condition is likely to be produced as a result of the leaching. The soil may become highly colloidal and deflocculated, with the resulting loss of tilth and the production of unfavorable condition for the growth of crops generally. Gypsum will tend to flocculate the soil. In

some cases it may even be necessary to make an application of manure or some other organic material following the flooding as a means of building up the soil.

Drainage, as a means of preventing the accumulation of alkali in the first

place, is advisable wherever the water table is rising. Artificial drainage, if properly planned and installed, will largely prevent the further spread of alkali.

Tile drains, if properly planned and installed, undoubtedly afford a successful means of lowering the water table.

Motor Trucks Are Time Savers

By N. C. Wilson

IN hauling materials to and from farms trucks save from one-half to two-thirds of the time required for horses and wagons to do the same work, according to the California Tractor and Implement Association.

About one-fourth of the time farmers have return loads for their trucks.

Horses are still used by the majority of the farmers in the United States, for some road hauling. About one-fourth of the men use their trucks to do some custom hauling.

The roads on which three-fourths of the trucks travel are all or part dirt. During about eight weeks of the year these roads are in such a poor condition owing to mud and snow that trucks cannot be used.

Since purchasing trucks about one-fourth of the farmers have changed their markets for either all or part of their produce. Where the average distance to the old market was seven miles, it is usually 20 miles to the new market.

According to findings of the U. S. department of agriculture, it is estimated that on the average trucks travel 3820 miles per year and are used during 173 days each year.

Depreciation is the greatest expense in connection with the operation of a truck, during the six and a half or seven years it is used.

Most of the owners of trucks larger than one ton prefer solid tires. The owners of one-half and three-fourths ton trucks usually prefer pneumatic tires. Owners of one ton trucks are about evenly divided in their preference.

When the report was being made two-thirds of the owners stated that they had not lost any appreciable time during the year on account of motor and tire trouble, breakage, etc. About one truck out of 30 had been out of commission ten days or more.

The average cost per mile for the operation of the one-half ton trucks was about 8 cents; of the three-fourths ton trucks, 13 cents; of the one ton about 12 cents; of the one and one-fourth ton, about 19 cents; and of the two ton, about 20 cents.

Valuing the driver's time at 50 cents an hour, the average cost of hauling crops was about 50 cents per ton mile with the half ton trucks, 34 cents with the three-fourths ton, 26 cents with the one ton, 24 cents with the one and one-fourth ton and one and half ton trucks, and 18 cents with the two ton trucks.

Four-fifths of the farmers using trucks estimate that they decrease the expenses for hired help. This decrease amounts on the average to \$324 per year.

On more than half of the farms of the 205 truck owners, whose farms contain more than 120 crop acres, there are tractors. Farms of corresponding size, where only trucks are owned, keep only slightly more work stock than is kept on the farms where both trucks and tractors are used.

BARLEY DISEASE IN COLORADO

Reports received by the Colorado agricultural college indicate that a serious disease of barley is becoming very prevalent in that state.

This disease is known as barley stripe and is caused by a fungus which lives over the winter on the seed. The plants may be affected at any stage of their growth from the young seedling to the almost mature plant. Affected leaves show yellowish to straw colored longitudinal stripes. The stems are also usually affected. The tissues in the stripe soon die, frequently resulting in the lengthwise splitting of the plants. Later the stripes commonly have brown margins. At or just following heading time entire affected plants may die, and following a heavy dew may become dark ashy gray from the abundance of spores produced over the surface. Often as high as 25 per cent of the plants in a field may be killed by this disease.

There is no remedy for this disease after the seeds have been planted, but experiments have shown that the disease may be largely prevented by treating the seed with formaldehyde solution of one pint to 40 gallons. The seed should be soaked in this solution for two hours and then allowed to dry. The seed should be planted as soon as sufficiently dry to pass through the drill.



Delivering full Power from Your Fordson

The supreme duty of the tractor belt for your Fordson is to deliver in the greatest degree the *full* power of the tractor motor to the belt machine.

A considerable wastage of power through slippage, often leads the Fordson owner to imagine his tractor is not developing its rated horse-power. But the Little Giant tractor belt, because it eliminates all this wastage, has been specially designed for the Fordson.

First, it is designed to maintain a clinging grip on the pulley, because the slip-proof belt not only prevents loss of power through slippage, but also the serious wear to the belt that slipping causes.

Second, it is built to withstand the effects of rain, snow, heat, cold and the abuse that every farm tractor belt must meet.

It is an endless canvas belt, made of four folds of a single piece of highest grade, heaviest weight canvas duck, stitched as a belt has never been stitched before, and specially treated to give increased toughness and wearability. Double stitching at the edges, an exclusive feature of this belt, eliminates edge wear.

Your Fordson dealer has a stock of Little Giant belts in three lengths—50 ft., 75 ft. and 100 ft. If you are buying a Fordson, get a Little Giant belt at the same time—if you are now a Fordson owner, insure your tractor's maximum performance on the belt by using a Little Giant.

United States Rubber Company

Distributed by
William L. Hughson Co.
San Francisco
For sale by all authorized Fordson Dealers

MOLINE

The Universal Tractor

3-2 Plow
Capacity



The Moline is unique in the tractor field—made so by our patent protection.



It is the correct farm power unit, doing all belt and field work, including cultivation, with one man.

Engineering and manufacturing development of the Moline Tractor and Moline Tractor Plows enable us to announce a 3-2 Plow for use with the Moline Tractor.

3 plows for ordinary conditions which prevail in most sections of the country.

2 plows for extreme conditions and unfavorable seasons.

An average saving of 4.7 horses per farm, and a total average saving of \$1,408.16 per year, is reported by yearly Moline tractor performance records received from owners to date. We will be glad to give anyone interested the opportunity to personally inspect these records.

If desired you can use the "drag behind" or horse drawn implements you now have with the Moline Tractor the same as with other types of tractors.

See Your Moline Dealer or Write Our Nearest Branch at:

Moline
Atlanta
New Orleans

Dallas
Oklahoma City
St. Louis

Poughkeepsie
Baltimore
Los Angeles

Indianapolis
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Salt Lake City
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Denver
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Des Moines
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MOLINE PLOW COMPANY, MOLINE, ILLINOIS

GOMBAULT'S CAUSTIC BALSAM

THE STANDARD REMEDY
HUMAN and VETERINARY



It is generally true that an external remedy that is good for the animal is also good for the human body, and Gombault's Caustic Balsam is no exception to this rule. The many testimonials received from physicians and veterinarians are convincing proof of its merits. Rheumatism, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Throat, Stiff Joints, in fact any ailment requiring an external application can be treated with absolute safety and the beneficial results produced are all that could be desired.

Soothing and Healing--A Perfect Antiseptic

As a veterinary remedy its curative qualities have been acknowledged for many years in cases of Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Spavin, Ringbone and other bony tumors. A trial will convince anyone that here is a remedy without an equal. Write for any information desired. \$1.75 per bottle at druggists or sent by parcel post on receipt of price.



The Lawrence-Williams Co., - - - Cleveland, Ohio

Getting Close to the Truth

A well known breeder of beef cattle of another breed was dispersing his herd. Talking to several intimate acquaintances when the sale was over he said, "If I ever go into the business again I will breed Shorthorns." Asked why, he said, "Because there's a man on every fence post who wants 'em."

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave., Chicago, Ill.

CARRUTHERS SHORTHORNS Bull Bargains

We have 12 young bulls that we want to sell during the next 30 days. They are well-bred, strong, heavy boned and of good colors. Several are sons of the Champion, Count Glory; others are by our proven sire Hallwood Villager. The bulls are priced to sell. Come and see them or write for price.

W. M. CARRUTHERS
Live Oak California

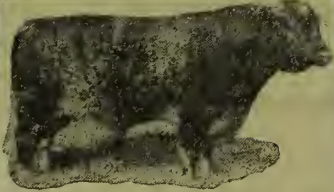
Ormondale Ranch Shorthorns Redwood City, Cal. HERD SIRES

Boquhan Guinea Stamp, the great Imported Young Broadhooks bull. Golden Goods Jr, sire of LITTLE SWEETHEART, Grand Champion International Show, Chicago, 1919.

Bulls and heifers for sale.
Duroc-Jersey hogs for sale.

James McDonnell, Supt.

CALEDONIA SHORTHORNS



Imp. Caledonia

Caledonia Shorthorns constitute one of the choicest collections of the breed owned in America. Our herd bulls, Imp. Caledonia, Gainford Matchless, grand champion at the 1919 San Francisco show and Pine Grove King stand out prominently in the West. Our females represent choice Scotch and American families, and are noted for their type and quality. We can at all times furnish foundation material and bulls suitable for any herd or for the range. Our prices are moderate and every animal is guaranteed. Visit our farm and herd. Send for special bull list.

CALEDONIA FARMS
WEST SACRAMENTO, CALIF.
OFFICE-57 POST ST. SAN FRANCISCO.

The Fair That Came Back

LAST week the agricultural and livestock interests of Sonoma County, led by J. Francis O'Connor, president, and H. J. Waters, secretary of the Sonoma County Fair Association, set a stiff pace for other county fairs to follow. This was the first fair held in that county in five years and the vigor with which the comeback was staged resulted in a decidedly creditable showing in all departments.

The success of the event demonstrates what can be accomplished by well directed effort and, further, it was proof positive that "where there is a will, there is a way." Really the story back of the fair is as well worth the telling as the story of the show itself.

Years ago the Sonoma County fair was rated one of the best in California. That was in the days when folks went to the fair to see the races. The management of the old fair built almost a model plant. One of the best combination mile and half mile tracks was constructed; permanent buildings were erected and the entire grounds were beautified with cypress plantings. Good horses came and good races were staged. Finally interest dwindled in the racing game and after 1916 the fair was abandoned.

During the last four years there has been a marked growth in the number of pure bred breeding establishments in and around Santa Rosa. One of the leading men in the development of the pure bred business of the community has been J. Francis O'Connor. O'Connor early set about encouraging the youngsters of the community to become members of pig clubs and made it possible for all who might be interested to secure one or more pure bred pigs. Because of his enthusiasm other breeders put their shoulders to the wheel and worked for a better class of Sonoma County livestock. It was to be expected that such general enthusiasm would end with a demand for an annual fair where could be shown in a practical way the accumulated accomplishments of the local breeders.

A fair was needed. When the matter was taken up with those who should be interested the proposition met with little encouragement. The fair spirit was dead. Now O'Connor happens to be the type of man who glories in doing the things that "can't be done." He knew they had the plant to use; he knew that there was a quickened interest in better agriculture and livestock and he knew that a fair could be held if the right men could be interested. No time was lost in locating those men, and good fortune guided their selection of H. J. Waters as secretary. O'Connor and Waters were the team.

The next big problem was to finance the fair. It was financed on a three year basis, with a third of the amount pledged callable each year. With the plant provided and a plan of financing in operation the next big thing was to develop public sentiment to the point where considerable money could be counted on from the advance sale of season tickets. To put across the sale of tickets the management hit on the plan of placing the sale in the hands of children of the community with several prizes as rewards. The two leading prizes offered were Shetland ponies, and the fact that over \$10,000 worth of tickets were sold before the gates opened is evidence that the plan worked.

Another source of income was from the concessions. Effort was made to sell all the concession space available. Aside from "The Valley," the term applied to the midway, over 120 commercial firms were sold sufficient space to leave a net profit of \$3500 to the fair association after paying for the exhibit tents.

The fair management then went after livestock exhibitors. They entertained no plan to confine the exhibitors to the local community—the fair was open to the world and that fact was made plain. The fact that the fair came just before the state fair at Sacramento materially aided the management in attracting a number of the best herds and flocks in this state.

The fair opened on time with all details arranged and for eight days it proceeded with a smoothness that

would do credit to many of the older established fairs and shows. Every one in the county came once or twice; every one helped in whatever way they could and every one had a good time, was satisfied and went home happy.

Each day was provided with a fine racing card, rodeo stunts, aeroplane flying and automobile racing. Each evening of the week was given over to a night horse show. This last named feature proved an exceptionally attractive event and included the leading stables of this state that were induced to stop over at Santa Rosa on their way to the state fair at Sacramento.

Practically all the farm bureaus of the county took active part in the fair and were represented by splendid exhibits. The Annapolis center won first place, Cinnabar second and Occidental third. Other districts represented were: Bennett Valley, Bodega Valley Ford, Porter Creek, Kenwood, Rincon, Olivet and Kellogg.

The horticultural and agricultural exhibits were mostly included in the showings made by the various centers. During the week a dahlia show was held.

The livestock show was easily the feature of the fair. Every available stall was crowded with the best of the county. Nearly all the important breeds were represented with more or less strength, and in the stalls and pens were many exhibits that will be seen at Sacramento.

CATTLE

The showing of dairy cattle was especially creditable. Holsteins led in point of numbers and Guernseys and Ayrshires followed closely. Only a few Jerseys were on exhibit. A feature of the dairy division was the splendid exhibit of Milking Shorthorns.

The Shorthorns were declared by the judge, Roy A. Cook of Iowa, who is secretary of the Milking Shorthorn Association, to be the equal in quality of any that he had seen this year. The class for aged cows was especially strong.

The awards follow:

Milking Shorthorns

Aged bulls—1, John Lynch Ranch, Petaluma, on Oxford Duke 2d.

Senior yearling—1, Thomas Harrison, Santa Rosa, on Count Tickford.

Junior yearling—1, Lynch, on Frantic Royal Type; 2, H. H. Doane, Rincon Valley, on Santa Rosa Type.

Senior calf—1, Harrison, on Santa Rosa Pioneer; 2, William Bond, Newark, on Golden Type.

Junior calf—1, Harrison, on Santa Rosa Victor; 2, Harrison, on Frantic Pioneer.

Senior champion Lynch, on Oxford Duke 2nd; junior and grand champion, Harrison, on Count Tickford.

Aged cow—1, 2 and 3, Harrison, on Floretta Clay, Naomi 2d and Bess Borough Curlew.

Two years old and under three—1, 2 and 3, Harrison on Vocalist, Welfare Belle and Welfare Naomi.

Senior yearling—1, Harrison, on Santa Rosa Queen; 2, Harrison, on Helarite; 3, Bond, on Cumberland Goldie.

Junior yearling—1, R. Heckley, Santa Rosa, on Frantic Maid; 2, G. W. Heckley, Santa Rosa, on Cumberland Jewel.

Senior calf—1 and 2, Harrison, on Dolores Lee and Diana Lee 2nd.

Junior calf—1 and 2, R. Heckley, on Frantic Belle and Rosa Lee.

Senior and grand champion, Harrison on Floretta Clay; junior champion, Harrison on Santa Rosa Queen.

Calf herd—1, Harrison; get of sire—1, Harrison; produce of dam—1, Harrison; 2, Bond; 3, G. W. Heckley.

Holstein-Frisian

Aged bull—1, J. W. Scudder, Escalon, on Model Domino Glista; 2, W. P. McAlpine, Santa Rosa, on unnamed.

Two year old bull—1, Mrs. E. M. Holje, Calistoga, on King Morco Alcartra 17th.

Senior yearling bull—1, Holje, on Holje Alcartra Aralla Segis.

Junior yearling bull—1, George A. Smith, Corcoran, on Korndyke Pontiac Valdessa; 2, Scudder, on Pontiac Segis Abbecker; 3, Smith, on Korndyke Colantha Pontiac.

Senior bull calf—1, 2 and 3, Smith, on Prince Hengerveld Butter Boy, Admiral De Kol Pontiac and Count Korndyke Rag Apple.

Junior bull calf—1, Holje, on unnamed; 2, Smith, on King Netherland Segis; 3, Scudder, on Commodore Stockton.

Senior and grand champion, Scudder, on Model Domino Glista; reserve senior champion, Holje, on King Morco Alcartra 17th; junior champion and reserve grand champion, Smith, on Korndyke Pontiac Valdessa; reserve junior champion, Holje, on Holje Alcartra Aralla Segis.

Aged cow—1, Scudder, on Riverview Pontiac Korndyke.

Two year old cow—1, Scudder, on Manteca Pontiac.

Senior yearling heifer—1, Scudder, on Manteca Honolulu Baby De Kol.

Junior yearling heifer—1, Holje, on

Golden Glen Jerseys

60 Registered Females in Herd

At our Golden Glen Stock Farm headquarters we are building up a herd of well bred high-testing Jerseys under ideal ranch conditions.

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Visitors welcome always. See herd at Riverside, October 13-19.

Geo. W. Thomas & Sons

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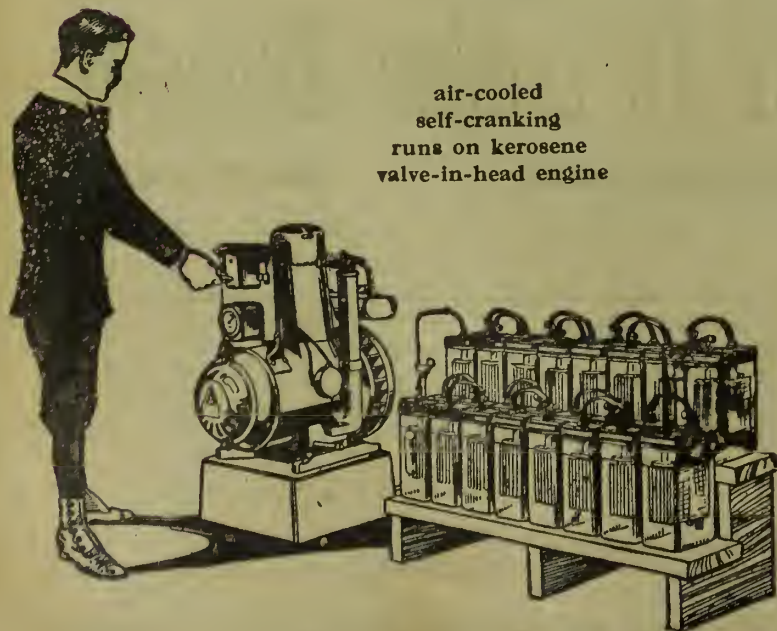
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Prove to me how DELCO-LIGHT
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Princess Madrigal Plebe.
 Senior heifer calf—1, Holje, on Cleo Pontiac Snookums Duke.
 Junior heifer calf; 1, Holje; 2 and 3, Scudder.
 Senior and grand champion female, Scudder, on Riverside Pontiac Korndyke; reserve senior champion, Scudder, on Manteca Pontiac; junior and reserve grand champion, Scudder, on Manteca Honolulu Baby De Kol; reserve junior champion, Holje, on Pontiac's Snookum DeKol.
 Aged herd—1, Scudder; calf herd—1, Scudder; get of sire—1, Scudder; 2 and 3, Smith; produce of dam—1, Scudder; 2, Holje.

Guernseys

Aged bull—1, A. B. Humphrey, Escalon, on Escalon Challenger.
 Two year old bull—1, Humphrey, on Nobleman of Maple Hill.
 Senior yearling bull—1, J. Francis O'Connor, Castlevlew Ranch, Santa Rosa, on Cherub's Sunny Jim of Nevada.
 Junior yearling bull—1, Fred S. Dashiell, Santa Rosa, on Escalon True Type.
 Senior bull calf—1, 2 and 2, Humphrey, on Escalon Angelo, Escalon Advancer and Escalon May King.
 Junior bull calf—1 and 2, Humphrey, on Escalon Rex and Escalon Governor.
 Senior and grand champion, Humphrey, on Escalon Challenger; reserve senior champion, Humphrey, on Nobleman of Maple Hill; junior and reserve grand champion, Humphrey, on Escalon Angelo; reserve junior champion, Humphrey, on Escalon Rex.
 Aged cow—1, Humphrey, on Imported Doria of Sarnia.
 Two year old cow—1 and 2, Humphrey, on Escalon Evangeline and Revada Princess Pat.
 Senior yearling heifer—1, Humphrey, on Escalon Lassie; 2, L. A. Bridinger, Bella Vista, on Braef Roselsie of Bella Vista.
 Junior yearling heifer—1 and 3, Humphrey, on Escalon Daisy and Escalon

Rose; 2, O'Connor, on Dorothea's Broadie of Castlevlew.
 Senior heifer calf—1, O'Connor, on Princess Patricia of Castlevlew.
 Junior heifer calf—1 and 2, Humphrey, on Escalon Marjorie and Escalon Golden Anne.
 Senior and grand champion, Humphrey, on Escalon Evangeline; junior and reserve grand champion, Humphrey, on Escalon Lassie; reserve junior champion, Humphrey, on Escalon Daisy.
 Aged herd—1, Humphrey; breeder's young herd—1, Humphrey; calf herd—1, Humphrey; get of sire—1, Humphrey; produce of dam—1, Humphrey.

Jerseys

Senior yearling bull—1, Maj. C. L. Tilden, Cazcerdero, on Sans Aloï Golden Fox.
 Two year old bull—1, M. A. Luce, Santa Rosa, on Quiglenook Loss King.
 Senior bull calf—1, Mathias Rogina, Santa Rosa, on Dairy Maid's Prince; 2, E. C. Rand, Santa Rosa, on Gordon of Brae Brawn.
 Senior and grand champion, Luce, on Quiglenook Loss King; junior and reserve grand champion, Tilden, on Sans Aloï Golden Fox; reserve junior champion, Rogina, on Dairy Maid's Prince.

Ayrshires

All Ayrshire awards went to the Steybrac herd owned by E. B. McFarland, San Mateo.

Professor C. W. Rubel of the University of California judged the dairy cattle classes.

While the showing of the beef breeds was not so extensive as had been expected there was nevertheless an attractive display. The William Bond herd of Shorthorns, on their way to Sacramento, walked off with the principal winnings. Chas. Rule of Duncan's Mills, had the only exhibit

of Herefords. Senator B. F. Rush of Suisun rated the beef classes.

SWINE

The local Berkshire breeders were out in force and had by far the largest exhibit in the swine division. Two of the leading herds of the state, those of A. B. Humphrey of Escalon and J. Francis O'Connor of Santa Rosa measured strength and divided honors. These established breeders did not have clear sailing in all classes as they were forced to meet a number of new breeders. Especial interest centered in the junior yearling sow class which was won by an entry owned by Mrs. J. G. Throckmorton of Sebastopol with an entry that she secured at a recent Berkshire sale.

The awards follow:

Aged boar—1, F. J. Kindle, Santa Rosa, on Castlevlew Baron; 2, C. W. Schwartz, Calistoga, on unnamed; 3, W. P. Hinshaw, Petaluma, on Hinshaw Rookwood.
 Senior yearling boar—1, J. Francis O'Connor, Santa Rosa, on Enhancer; 2, A. B. Humphrey, Escalon, on Escalon Type.
 Junior yearling boar—1, Humphrey, on Escalon Big Joe.
 Senior boar pig—1 and 2, Humphrey, on May's Superb and Escalon Model Leader; 3, J. G. Throckmorton, Sebastopol, on Goldridge Duke.
 Junior boar pig—1, Humphrey, on Grape Wild Champion; 2, O'Connor, on Castlevlew Achiever; 3, Charles Walten-spiel, Santa Rosa.
 Senior and grand champion, O'Connor on Enhancer; reserve senior and grand champion, Humphrey on Escalon Big Joe; junior champion, Humphrey on May's

Superb; reserve junior champion, Humphrey on Grape Wild Champion.

Aged sow—1, Humphrey, on Grape-wild Rose; 2, Throckmorton, on Princess May 11th; 3, Kindle, on Castlevlew Lustre 2nd.

Senior yearling sow—1, Humphrey, on Grapewild Rose.

Junior yearling sow—1, Mrs. J. G. Throckmorton, on Castlevlew Rival Lady; 2, Humphrey, on Grapewild Rose 13th; 3, Logan Bishop, Santa Rosa, on Leader's Rival Lady.

Senior sow pig—1, Humphrey, on Escalon Belle 5th; 2, Throckmorton, on Lustre Girl 6th; 3, O'Connor, on Castlevlew Achiever.

Junior sow pig—1, O'Connor, on Achiever Rival Duchess; 2 and 2, Humphrey, on Grapewild Rose 21st and Grapewild Rose 19th.

Senior and grand champion, Humphrey on Grapewild Rose 6th; reserve senior and reserve grand champion, Humphrey on Grapewild Rose; junior champion, Humphrey on Escalon Belle; reserve junior champion, O'Connor on Achiever Rival Duchess.

Aged herd—1, Humphrey; 2, Kindle; under year herd—1, Humphrey; 2, Throckmorton; 3, O'Connor.

Get of sire—1, Humphrey; 2, Throckmorton; 3, O'Connor.

Produce of sow—1, Humphrey; 2, Throckmorton; 3, O'Connor.

Pen of barrows—1, Humphrey.

Sow and litter—1, E. Grant Hillis, Sebastopol; 2, Stanley Carrothers; 3, Marvin Johnson.

Harvey Berglund had things his own way in the older Duroc-Jersey swine classes, but in the younger stuff Leo Schoningh, Desmond Praltzel and Carleton Coffey, all of Petaluma Pig Club, ran in some pigs that came out with their share of the awards, Coffey coming out with the junior championship.

Junior yearling boar—1, Harvey Berglund, Dixon.

Senior boar pig—1, Berglund.

Junior boar pig—1, Leo Schoningh, Petaluma; 2, Desmond Praltzel, Petaluma.

Senior and grand champion, Berglund; junior and reserve grand champion, Berglund.

Aged sow—1, Berglund.

Senior yearling sow—1, Schoningh, on El Dorado Maid; 2, Praltzel, on Mark's Crimson Wonder.

Junior yearling sow—1, Berglund, on Western Lady 5th.

Senior sow pig—1, Carlton Coffey, Petaluma, on Defender Gold Model.

Junior sow pig—1, Schoningh; 2, Praltzel.

Senior and grand champion, Berglund on Western Lady 5th; junior champion, Coffey on Defender Gold Model; reserve grand champion, Schoningh.

Aged herd—1, Berglund; under year herd—1, Schoningh; 2, Praltzel; get of sire—1, Schoningh; 2, Praltzel.

The Poland China hogs brought out two show herds with Marshall & Son of Sebastopol getting the bulk of the awards.

Aged Boar—1, Marshall & Son, Sebastopol, on Mouws Special 7th; 2, Henry Rued, Jr., Sebastopol, on Alexander.

Junior yearling boar—1, Marshall on Headlight; 2, Rued on Rued's King. Senior boar pig—1, Marshall.

Junior boar pig—1 and 2, Marshall.

Senior and grand champion, Marshall on Headlight; reserve grand champion, Marshall on Mouws Special 7th; junior champion, Marshall.

Aged sows—1, Rued on Nancy; 2, Marshall on Anna King; 3, Rued on Queen.

Senior yearling sows—1, 2 and 3, Marshall, on Dolly, Polly and Betty.

Junior yearling sows—1, 2 and 3, Marshall on Repeaters Giantess, A. B. and D.

Senior sow pig—1 and 2, Marshall on Unnamed; Glenn Winkler, Sebastopol, on Big Knox Lady.

Junior sow pig—1, 2 and 3, Marshall.

Senior and grand champion, Marshall on Repeaters Giantess A; junior and reserve grand champion, Marshall.

Aged herd—1 and 2, Marshall; under year herd—1 and 2, Marshall; Get of Sire—1 and 2, Marshall; Produce of Dam—1 and 2, Marshall; Barrow—1, Marshall.

Dr. J. J. Summerfield of Santa Rosa was the only exhibitor of Tamworth swine.

The really remarkable feature of the swine division was the exhibit made by members of the various pig clubs of Sonoma County. No less than 18 boys and girls had entries.

J. I. Thompson of Davis, formerly with the University of California, placed the swine awards.

SHEEP

While there were no competing flocks in the various breeds of sheep, there was enough competition in each class to make Judge Thompson roll up his sleeves and go to work, as each exhibitor brought along several head for each class.

The feature of the sheep show was the Shropshire exhibit of the Butte City Ranch of Butte City, Glenn County.

Corriedales

All awards to W. H. and L. L. Crane, Santa Rosa.

Hampshires

All awards to Henry Rued, Jr., Healdsburg.

Grades

All awards to Rued.

(Continued on Page 294.)

Rosamaines Rancho

Owned by A. J. & F. W. Stalder

Riverside, California

Mammoth Dispersal Sale

October 19 - 20 - 21, 1920

Owing to the ill health of the managing owner, Mr. A. J. Stalder, Rosamaines Rancho will itself be sold at public auction, and the splendid herd of registered Holsteins dispersed, the sale also including all of the other livestock and equipment on the ranch.

AT 9 A. M. TUESDAY, OCTOBER 19—Rosamaines Rancho will be sold. The land will be sold in two parcels, the first containing 235 acres and including all of the buildings. This is unquestionably one of the very foremost breeding plants in California, adapted either to beef or dairy cattle. The soil is of first quality, it is abundantly watered, splendidly located, and the improvements alone cost over \$200 per acre at normal costs. They could not be duplicated today for less than \$80,000 to \$90,000. All of the land adjoining Rosamaines Rancho on the west and north has already been leased for oil development, and wells are now being drilled within two miles of the property. Offers of cash lease or royalty have been offered for Rosamaines Rancho for oil, but the owners have decided to sell the property unhampered by lease, allowing the new owner to make his own oil lease if he wishes. This property will be sold on the following terms: One-third cash, balance in six equal annual payments, interest at seven per cent, payable semi-annually, two per cent discount for cash on deferred payments.

The balance of the ranch, consisting of 397½ acres adjoining on the north, all farming land, will then be sold on the following terms: One-half cash, balance in four equal annual payments, interest seven per cent, payable semi-annually, two per cent discount for cash on deferred payments.

Following the sale of the ranch, the same day, we will sell

50 REGISTERED DUROC JERSEY HOGS
 18 REGISTERED PERCHERON STALLIONS AND MARES
 1800 WHITE LEGHORN HENS AND PULLETS
 A SMALL HERD OF GRADE DAIRY COWS AND HEIFERS
 ALL OF THE IMPLEMENTS AND EQUIPMENT
 A NUMBER OF GRADE HORSES

On Wednesday and Thursday, October 20-21

the Entire Herd of

150 Registered Holsteins

will be sold, and this is one of the finest herds ever offered for public appraisalment in the west.

If you want to own some of the most consistently bred and developed registered Holsteins in California, watch carefully for the announcements concerning this herd in following issues. There will be in the sale a wonderful list of daughters of KING PONTIAC NETHERLAND SEGIS 3D, who now has 27 A. R. O. daughters with records up to 29.91 lbs. butter in 7 days for a senior 3 year old; nine daughters of SIR SKYLARK ORMSBY HENGERVELD, including the

famous twice 34 lb. cow GERBEN ABBEKERK MAID; and more than 60 of these choice young females are in calf to SIR ORMSBY SKYLARK RAUWERD, a 34 lb. son of Sir Ormsby Skylark.

KING PONTIAC NETHERLAND SEGIS 3D and SIR ORMSBY SKYLARK RAUWERD will both be sold, and they are both good enough to go into any herd of high class registered Holsteins anywhere.

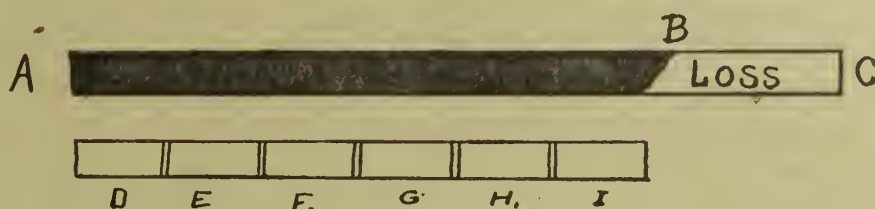
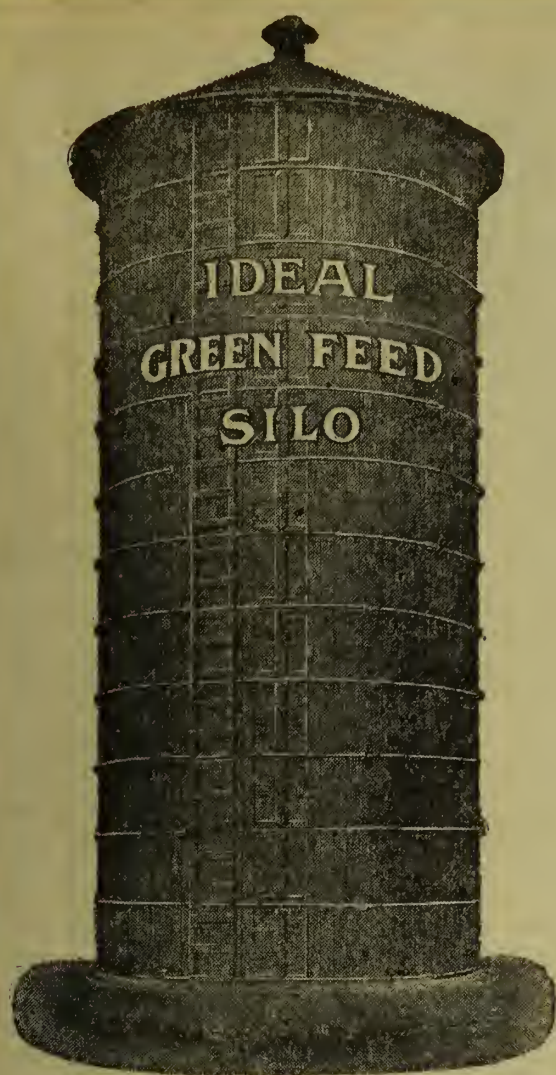
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California Breeders Sales and Pedigree Company
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Let the line AC, in the above figure, represent the initial cost of a silo. Let each division, d, e, f, etc., in the lower line represent the saving between silage and dry feed for a given unit of time. If, through inferior construction, the silo becomes useless before the lower line equals the upper line, there is an actual loss instead of a saving.

A Fact About Silos

Notice the above diagram. It proves that saving begins only when the difference between the cost of silage and dry feed totals the cost of the silo.

The Ideal Green Feed Silo is made of California Redwood, a material of which the Encyclopedia Americana says: "It resists decay . . . it resists fire . . . It will last as long as 40 years."

The tongue and groove staves, and heavy refrigerator doors with a three point contact on all four sides, keep the Ideal absolutely air-tight.

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In short, the Ideal Green Feed Silo is built for permanence—for years of service after it has paid for itself.

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PACIFIC TANK & PIPE CO.

The Fairs and Shows

By Frank D. Tomson



THE season of fairs and agricultural shows is at hand. The displays of products of the soil in most sections of the United States this year will be more elaborate than usual, for it has been an abundant crop year on the whole. Improved mechanical devices for farm purposes suggest a further advance in farm methods.

No display will be more important and none more closely studied than the livestock display presenting the better types of the pure bred standard. At no time in the development of agriculture has improved livestock had a more vital relation to the business of agriculture than in this year 1920. There seems no difference of opinion as regards the shortage of the beef supply, a condition that is certain to become very acute in the near future. But owing to the cost of production there is no longer a sufficient margin of profit to the grower to warrant the continuance of production of the inferior sorts of whatever breed. The solution of the situation is the adoption of the best available standards. The use of the pure bred sire never was so imperative as now, but this alone will not fully suffice. Every farm upon which livestock is grown should be the home of pure breeds, not because they are mere pure breeds, but because they adhere to the standard which we recognize as the pure bred type. The investment need not be a large one at the outset, but the laying of the foundation is essential and the accumulation of the progeny on the farm until finally the pure bred standard is the only standard known on the farm.

The future holds no suggestion of a return to former conditions. The movement is the other way and it will require livestock of the responsive types to make a sufficiently profitable return to those who own or operate the land. There is nothing complicated about the growing of pure bred livestock. It needs average intelli-

gence and energy and judgment enough to provide good care.

A Nebraska farmer marketed a load of steers recently at Omaha for \$273.65 per head. They carried a large percentage of pure Shorthorn blood, yet they were raised as any practical beef producer raises his steers. These steers had quality enough to command the top of the market and having the top price of the market, 16¼ cents per pound, they had the advantage also of weighing 1,684 pounds. Another Nebraska man marketed at Chicago a number of yearling steers that brought \$185.61 per head because they combined the quality and weight which represent the pure bred standard. It happens that these yearlings weighed 1,076 pounds and sold for 17¼ cents per pound, which was the high price of the year at the Chicago market.

How can any man growing inferior steers under the existing cost of production hope to compete with these men who have the good judgment to employ pure bred sires of the right type and females of at least near pure bred? There are very many instances where other growers make sales quite as profitable as these two indicated. There seems never to be a lack of competition if the offering is good enough.

This country maintains millions of cows, both beef and dairy cows, that actually fail to pay for their keep. In view of this one as rather impressed upon reading that 134 cows in Canada, of the same breed as these Nebraska steers just referred to, made milk records last year ranging from 7,000 to 17,723 pounds each. These are farmers' cows producing beef calves, and made their records under ordinary practical conditions, the kind that prevail or at least can be easily provided on almost every farm.

Beef and milk are the sources of revenue from cattle growing and we must get back to cattle growing on the farms to a much greater extent than for the past dozen years, for there

are certain to be attractive profits if the right kinds are maintained. The amount of the profit will be governed by the kind.

What I have said in regard to cattle growing applies with more or less equal force to hog raising, sheep raising, etc., and so I suggest that every farmer, whether he be a tenant or land owner, whether his range is limited to a small area or embraces many thousands of acres, make a close study of the livestock exhibits at these fairs and shows. Let him talk with the exhibitors and find out how they conduct their affairs back on the farms or the ranches and ascertain how these types which are displayed are produced. The various breed associations are offering extensive prizes to encourage these displays, but the winning of the prizes is entirely incidental. The impress which these exhibits make upon the observer is of much larger importance. These fairs and shows are useful agencies. They furnish a convenient place for the student whether he be a farm hand, a tenant or a land owner, to make comparisons and study the results which these experienced breeders and exhibitors obtain and learn the methods employed in bringing about results. It isn't a "fancy stock" business, this growing of pure breeds. On the other hand, it is the short cut to early and permanent profits.

Every man identified with the business of farming is concerned with the adoption of the best and most efficient means of bringing about improvement. The better types of livestock are provided now so extensively as to make them available for the use of farmers everywhere. He may make his selections in accordance with his preference—but the sooner the better.

Gas may form in a silo at the time of filling and for a week or so afterwards. This gas is heavier than air and so will settle in the silo. As soon as filling the silo is started the falling silage will stir up enough air currents to drive out the gas. A good way to determine if there is gas in a silo is to lower a lantern. If it goes out it will not be safe to go into the silo.

NEW RECORD OF VALUATION ON A GUERNSEY COW

Charles L. Hill and Son of Rosendale, Wisconsin, have sold a one-third interest in Cherub's Prince for \$11,000 to F. G. Rueping of Fond du Lac, Wisconsin, and have made a gift of a one-third interest to W. W. Marsh of Waterloo, Iowa. The price paid for the one-third interest by Mr. Rueping indicates a larger valuation on a Guernsey sire than has ever before been established.

Cherub's Prince 41543 is a three year old son of Imp. Hayes Cherub, grand champion at the National Dairy Show in 1913 and 1914, and never beaten in America except in 1916, when he surrendered the grand championship honors at the National Dairy Show to his own son, Ladysmith's Cherub. He is the sire of eight Advanced Register daughters.

SPEAKING OF MULES

In referring to the fact that preliminary census figures indicate a marked increase in the number of mules in Southern states, Wayne Dinsmore of the Horse Association of America takes occasion to pay his respects to the mule after the following fashion:

"The mule is the only fool proof motive power unit. They can go out singly or in pairs, fours or sixes, and after a full day's work return home all right whether the driver does or not. In these days of irresponsible labor that is a big factor. Then, too, a driver cannot overheat a mule. When he gets too warm he slows up to a gait befitting the weather, and not even the fluent vocabulary of an ex-cavalryman will persuade him to greater speed. Brought in at night, it is sufficient to pull off the harness and turn this long eared believer in "safety first" into a big dusty barn lot with food and water. He will roll until he is groomed to his own satisfaction and will not drink nor eat till cooled down enough to make it safe to do so. No matter how much grain is accessible, he will stop eating when he has enough.

"Long live the mule (he does it anyway)—the only fool proof motor, the quick money for the farm producer, the hardy exponent of safety first!"

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Why**

**You Should
Use
ECONOMY STOCK
Powder**

FOR: HOGS—CATTLE—SHEEP—HORSES

BECAUSE
it acts directly upon the affected parts.
it expels all worms.
it aids digestion.
it suppresses fever in the stomach.
it cools the blood.
it loosens the bowels.
it sweetens the stomach.
it aids mastication.
By feeding the powder in connection with grain, the animal will extract 10 to 20 per cent more of the nutritious qualities.

In our compound are Poke Root, Blood Root, Sulphur and other ingredients which act upon the kidneys, liver, spleen and blood; a filterer of charcoal to absorb the impurities of the digestive tract; Worm Seed Meal in sufficient quantity to destroy all worms and the four sodas which excite the secretion necessary to healthy digestion, sweeten the contents of the stomach and bowels and remove all impurities from the tract; claims which have been verified time and again by the testimony of our customers, which testimony is based upon their experience with and the benefits derived from the use of our goods.

Economy Hog and Cattle Powder Company,
1016-1017 Hearst Building, San Francisco.

Send me your booklet "Economy-Ize Your Farm." Also a free sample of Economy Stock Powder to try out on my stock.

Name..... R. F. D.....

Post Office..... State.....

I have....hogs....sheep....cattle....horses.

Economy Hog and Cattle Powder Company
Hearst Building San Francisco, California

For the Prevention of

ANTHRAX

Of all livestock diseases, anthrax is one of the most fatal.

For the preventive and curative treatment of anthrax we offer

ANTHRAXOIDS

(Spore Vaccine)

For immunizing cattle, horses, sheep and mules.

Anthraxoids are Anthrax Spore Vaccine in pill form. Each Anthraxoid is a dose ready to be injected under the skin of the animal.

Antianthrax Serum

A serum to be used when animals show symptoms of anthrax.

Anthraxoids-Antianthrax Serum

(Simultaneous Treatment)

Double vaccination with serum and vaccine. Used when anthrax is established or suspected to be in a herd.

Write for free booklet on the Prevention of Anthrax.

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An Insect Destroyer
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SPECIAL SALE OF

Purebred Berkshire Hogs

to eliminate entire breeding herd at
Whittier State School, Whittier, Cal.

Leader's Invincibella 2nd, 1st prize aged sow Los Angeles Livestock Show, 1919.

Two nine months boars out of Leader's Invincibella 2nd by Byron Rookwood 2nd, grand champion boar.

Grape Wild Chief, 3 year old boar. Junior Champion boar pig Los Angeles Livestock Show, 1918.

Young gilts and boars and brood sows at little more than pork price.

Col. W. C. Lookingbill

Expert Livestock Auctioneer

Have now established permanent headquarters at my new U. & I. Union Stockyards, midway between Pomona and Ontario. Can thus command a wider field of rich dairy and swine breeding interests. 25 years' experience buying and selling in the heart of Iowa. For real service write me at

539 E. Pasadena St., Pomona

BREEDING DATE BOOK—FREE

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.

CALIFORNIA BREEDERS SALES
AND PEDIGREE CO.

C. L. Hughes, Sales Manager.
Sacramento Cal.

When writing advertisers, mention the Cultivator.

TOUCHING THE HIGH SPOTS

Tuberculosis is transmissible, loathsome and deadly.

A dirty milk pail is dangerous to health.

The legitimate way to water milk is to provide plenty of clean water for the cow to drink.

The fly is a filthy scavenger, always carrying germs.

Dairy cows are more profitable if given proper care and attention.

A minute quantity of contaminated warm milk will produce millions of germs.

Milk cooled to 50 degrees Fahrenheit or below and kept at that temperature retards the growth of bacteria.

Polluted water on a dairy may kill numbers of people.

Flies in the milk strainer look unsightly and contaminate the milk.

A milker dressed in dirty clothes has no reasonable argument to the contrary when you tell him he is insubstantial.

When the inspector finds chickens in your milking barn don't make it too strong when you tell him it's an accident. He may not express his thoughts to you, but nevertheless he will be inclined to think that chickens have a tendency to "come home to roost."

THE ECONOMIC IMPORTANCE OF TUBERCULOSIS

The wide distribution of tuberculosis among our animal population causes serious losses annually. Just what these losses total in dollars and cents is hard to give in exact figures, since there is such a wide range in reliable statistics.

When the dairy herd becomes infected, which is the case nine times out of ten, there eventually is a reduction in the milk supply; and again its presence in the herd may lead to cases of abortion and not uncommonly many cows finally die of the disease.

Pure bred stock also come in for their share of the disaster when tuberculosis makes its appearance among them. The breeding of such stock represents the lifelong efforts of breeders for several generations. Through this continued scientific breeding such stock reach a valuation of thousands of dollars and, since there are but a few animals in such a herd, the loss of one by death from tuberculosis or by interference of reproductive organs from the same cause diminishes or completely destroys the prospects for the future of those engaged in this field of animal husbandry.

LET THE SHEEP DESTROY SOME OF THE WEEDS

Did you ever stop to consider what a band of sheep is worth as a weed exterminator? In the first place, the band is worth as much in the destruction of weeds as a man with a team and cultivator or weeder through the season.

Secondly, there is a big difference in cultivating weeds out or mowing them and sheeping them off. Cultivating or mowing is an expensive method for which you get nothing but a little added humus to the soil, whereas the sheep turn your weeds into marketable sheep manure deposited on the fields.

It has been remarked that a small band of sheep adds a thousand dollars to the average appearance of the ranch in five years time from the standpoint of weedless fields. However, in the long run it is more than it appears. It is an actual source of steady income.

DISPOSING OF DEAD ANIMALS

If possible roll the carcass upon a few old poles laid parallel to each other on the ground, or pile some wood blocks, brush or old lumber around it. Completely cover the whole with a liberal quantity of damp stable manure, moist stack bottoms or similar material. If the dead body is that of a horse or a cow a large load is required. Then pour a gallon of coal oil on the side of the pile from which the wind is blowing and apply a match. The use of oil is not entirely necessary, but serves to get the fire well started. When this is done no further effort is required, but after a few days all that remains is a small ash heap.

Breeders Attention

The Premier Fair Event for
the 1920 Season Will Be

The Fresno District Fair

Held September 27---October 2

From the standpoint of attendance this fair will assure your getting before more people than in any other event in the state. Not alone that, but you will be placed before the kind of people who are educated and believe in purebred stock, and have demonstrated their willingness to buy what is good.

During this fair Mr. Fred C. Gatewood will have complete charge of this department. He has arranged for better accommodations and better equipment.

Stock Auction

On the last two days of the fair there will be a stock auction of purebreds under the direction of F. J. Griffin. All pedigreed stock may be entered for sale.

The Big Attractions

We will get the crowds through high class amusements. "Days of the Old West," a five-day event, featuring Tom Mix and hundreds of cowmen. On the last day the dedication of our new quarter-million-dollar speedway with twelve of the fastest national drivers in a 200-mile classic.

Please Remember

There are many fairs, but it is the ones with the big attendances, and the ones in communities that believe in the pure breeds that count. Don't miss the Fresno District Fair. Write for premium list and entry blanks.

FRESNO DISTRICT FAIR

FRESNO, CAL.



10% more butterfat

Ten per cent more butterfat! That's what the University of California's string of twenty-six cows tested after eating silage rations.

Official Statement. U.C. Agr. Bulletin 282

"Through addition of Indian corn silage or milo silage, to rations of alfalfa hay, or alfalfa with grain feeds, an increase in production amounting to from ten to twenty-five per cent was secured—butterfat was increased by about ten per cent."

An Indiana Silo will help you add this ten per cent to your cream check. Twenty thousand Pacific Coast farmers earn greater profits with Indiana Silos. Standard for twenty-two years. Money-back guarantee. Three men can erect an Indiana in three days. Investigate now. Write for free silo book.

CHAS. K. SPAULDING LOGGING CO.
SALEM, OREGON

INDIANA SILO



MAIL COUPON TODAY FOR FREE SILO BOOK
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Name _____ Address _____

Berylwood Holsteins

A genuine Berylwood bargain may be seen in our young herd bull prospect, whose high-record ancestry and fine individuality are fit claims to distinction. The dam of this young bull is Queen Saddle Vale Veeman Karlay, our high-record three-year-old daughter of King Saddle Vale 27th, Sire of calf is King Segis Pauline Alcartra—six nearest dams averaging 30.32 lbs.

The record of 30.11 lbs. butter from 539 lbs. milk in 7 days made by dam of this youngster was made under handicap conditions.

The calf is nearly white in color, and he is priced to interest an appreciative buyer.

BERYLWOOD INVESTMENT CO.

J. W. Snodgrass, Mgr.

Hueneme, Ventura Co., Cal.

Holstein Bull Calves For Sale Very Reasonable

Sired by Sir Veeman Korndyke Pontiac and out of yearly record cows. Write for prices, photo and pedigree.

BURR FARM

Box 220, Route 2. East 26th and Downey Road, Los Angeles

The Victory Herd of Holsteins

Holsteins of known value, headed by Sir Piebe De Kol Segis Pontiac, a son of King Segis Pontiac Count, acknowledged one of the breed's greatest sires, and our junior herd sire, King Pontiac Alcartra Prilly, whose dam made 36.81 lbs. butter out of 805 lbs. milk in 7 days, now on yearly test. A young bull from this herd is a profitable investment.

HILLCREST FARM, H. E. Spires, Mgr., Caruthers, Cal.
Duroc-Jersey Swine of Highest Quality

Home of King Korndyke Pontiac Mead

Bargains in Bull Calves from Tested Dams.

Top Herd in U. S. for Fat Production of 100 cows.

LOS ANGELES COUNTY FARM HOLSTEINS

HONDO, CALIF

3 Miles South of Downey on Downey-Long Beach Blvd.

FAIR THAT CAME BACK

(Continued from Page 290.)

Shropshires

All awards to Butte City Ranch.

Dorsets

All awards to Rued.

HORSES

The exhibit of draft horses was confined to a few local owners of Percherons. Thos. Harrison of Santa Rosa had the champion stallion and Ruth Maxwell of Sonoma had the champion mare.

AUCTION OF PRIME CATTLE

There will be an auction sale of prime cattle on September 11 at the C. C. Moore Ranch, Cottonwood, Shasta County and September 20 at Big Meadows, near Chester, Plumas County. These sales will be conducted by the farm bureau in cooperation with the California Cattlemen's Association. It is hoped that it will determine whether this method can meet

FAIR DATES

California State Fair, Sacramento, September 4-12. Secretary Chas. W. Palne.

Tulare County Livestock and Agricultural Show, Tulare, September 14-18. Secretary John A. Rollins.

San Fernando Valley Fair and Market, Owensmouth, September 15-18. Secretary Chas. L. Schufeldt.

Kings County Fair, Hanford, September 21-25. Secretary Frank C. Russell.

San Diego County Farm Bureau Fair, San Diego, September 22-25. Manager Ed. Davidson.

Ventura County Fair, Ventura, September 22-25. Secretary L. P. Hathaway.

Glenn County Livestock and Agricultural Association, Orland, September 27-October 2. Secretary E. A. Klrk.

Fresno District Fair, Fresno, September 28-October 2. Secretary Walter C. Ficklin.

San Diego County Farm Bureau Fair, San Diego, September 22-25. Manager Ed. Davidson.

Shasta County Fair, Redding, October 1-2.

Los Angeles Livestock Show, Los Angeles, October 2-10. Secretary C. R. Thomas.

Siskiyou County Fair, Yreka, October 5-9. Secretary Claude R. Gillis.

Orange County Fair, Huntington Beach, October 7-9. Secretary, J. K. McDonald.

Southern California Fair, Riverside, October 13-19. Secretary W. W. Van Pelt.

Northern Arizona Fair, Prescott, October 14-16.

Western Royal Livestock Show, Spokane, Washington, November 1-5. Secretary Bert L. Hilborn.

Pacific International Livestock Show, Portland, Oregon, November 15-19.

the marketing problems of the small producer. All of the large packers have been asked to send their buyers

As we go to press C. L. Hughes, California Breeders Sales and Pedigree Company, wires: "Toyon Farm Association will sell 150 registered Holsteins at Sacramento November 10 and 11. Offering contains approximately 100 cows, 30 heifers and 20 bulls, all federal tuberculin tested and females bred to the noted Toyon herd sires Sir Pietertje Ormsby Mercedes 43rd, Sir Pietertje Ormsby Canary and Sir Aaggie Mead.

The essential points of a good dairy cow are indications of constitutional vigor, food capacity, development of the nervous system, good blood circulation, and the ability to produce milk abundantly.

Constitution—Well distended nostrils and good heart girth due to breadth and depth of chest are the best indications of that quality of health and vigor commonly referred to as constitution.

Food capacity—Great length from shoulder to hip bones, together with great width and depth of barrel, indicates well developed digestive organs, which enable the cow to consume and digest large quantities of food.

Nervous system, or nervous temperament—A good dairy cow is active and intelligent. Large, bright eyes, set rather far apart, a broad, well dishd face and a spare and angular form are good indications of nervous temperament.

Blood circulation—A good circulatory system is necessary to carry the digested food from the abdominal region to the udder. The milk veins should be large, tortuous, and branching, entering as many large wells as possible.

Producing ability—The digested food is converted into milk only after

reaching the udder. A large udder that is soft and pliable but not flabby when empty, and well developed forward and attached rather high behind, and teats of medium size and squarely placed are the best indications of the cow's producing ability.

The Wonderful Attractions of British Columbia

Few countries possess all the conditions for happy, prosperous living as does British Columbia. The varieties of climate and soil offer inducements for almost every branch of agriculture. Whether in the warm interior valleys, the rich grazing table lands or the fruitful lowlands of the coast or Vancouver Island, the advantages offered for

Dairying, Fruit Growing and Stock Raising

are such as must appeal to those who wish to improve their circumstances and at the same time live in a country of delightful climate, magnificent scenery, varied resources, progressive people and abundance of opportunity for development. British Columbia—the playground of America—is already famous for the production of its orchards, fields and dairies. Now is the time to

Learn about this wonderful Province and share in its possibilities. Its industrial life—mining, lumbering, fishing, manufacturing, transportation—assures a ready market at good prices for all the farmer can produce. Schools, churches, railways, roads, telephones, all the conveniences of an old land await you in this new Province of Opportunity and Success. For illustrated literature, maps, etc., write Department of Immigration, Ottawa, Can., or

Gilbert Roche,

3-5 First St., Sheldon Block,
San Francisco, California.

Canadian Government Agent.

Mariout Seed Barley

Good Clean Seed raised in
Southern California from
Davis Seed

Lewis J. Utt

Pala Cal.

JERSEYS

Venadera Herd

Register of Merit Jerseys

Senior herd sire Altama Interest, sire of 12 cows in Register of Merit. Junior herd sire Jap's Perfection Owl, a line bred Spermfield Owl bull.

Guy H. Miller, Modesto, Cal.

Young Jersey Bulls For Sale

One at the head of your herd will pay big dividends on his cost. Write to

W. J. Hackett

Modesto Cal.

Jersey Bull

FOR SALE

A fine straight one, bred right, priced right.

S. F. Williams

Chico, Cal.

Member Orland Jersey Cattle Club

KEEP LIVESTOCK HEALTHY

BY USING

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(STANDARDIZED)

Easy to use; efficient; economical; kills parasites; prevents disease.

Write for free booklets on the Care of Livestock and Poultry.

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PARKE, DAVIS & CO.

DETROIT, MICH.

Shire Horses FOR SIZE

BONE and QUALITY
More is required of horses than ever before hence the need of more size, weight and power. Large geldings never were higher. Shire geldings usually top the market. Use Shires to raise larger and better horses.

For information on Shires write,
W. G. Lynch, Secretary American Shire Horse Association, Tonica, Illinois.

Partnership Adjustment Sale

45 Registered Holsteins

Allana Farm, Dixon, Cal.

Thursday, September 23, 1920

To adjust an existing partnership between J. P. and W. W. Phillips, the entire high class herd of registered Holsteins at Allana Farm will be sold at public auction, excepting only one heifer and a few calves.

An outstanding attraction in this offering is SIR PIETERTJE KORNDYKE ORMSBY, the first son of the world famous sire Sir Pietertje Ormsby Mercedes ever offered at public sale in the west. Besides being sired by the greatest sire of yearly producers and show ring winners ever developed in any breed, SIR PIETERTJE KORNDYKE ORMSBY is out of a good record daughter of Sir Korndyke Hengerveld De Kol, second dam a half sister to Pietertje Maid Ormsby. He is 4 years old, a sure breeder, right in every way. The calves he has sired stamp him as a sire of great worth. Here is your opportunity to head your herd with one of the bulls most difficult to secure today—a son of the great "Sir Piet."

The Females

are mostly of Ormsby breeding, and afford an excellent selection of young typey individuals, some with good short and long time records, and others now on yearly test.

A 26 POUND COW, with a good yearly record, and bred to Sir Pietertje Korndyke Ormsby.

A DAUGHTER of the above cow by a full brother to Pietertje Maid Ormsby.

A 20 POUND 4 YEAR OLD with a good yearly record and heavy with calf to Sir Pietertje Korndyke Ormsby.

A BEAUTIFUL 21 POUND 3 YEAR OLD that has 470 lbs. butter from 12724.7 lbs. milk to her credit in 197 days. Bred to Sir Pietertje Korndyke Ormsby.

A DAUGHTER OF COLANTHA SIR PONTIAC AAGGIE out of a 26 lb. daughter of a 28 lb. cow.

SEVERAL DAUGHTERS OF SIR PIETERTJE KORNDYKE ORMSBY out of well bred dams.

REMEMBER that there are a number of yearly record cows and heifers, besides others now on yearly test, and daughters of yearly record dams.

A Choice Lot of Young Bulls

This sale is a real opportunity for dairymen to secure some richly bred young bulls of correct type, with several good enough to attract the owners of registered herds.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

Write for Catalog.

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, California.
Auctioneer—Col. Ben A. Rhoades, Los Angeles

BERMA RANCH

Size and quality predominate in our big type Poland Chinas. No better big type sows are found in the state. Buy Berma Poland Chinas and you buy wisely.

C. E. DACK

R. H. Box 196

Fresno, Cal.

BERNSTEIN'S RANCH

Home of King's Big Ben, where he is siring those early developing big type Poland Chinas that are ready for the market at 6 mo. They have size, bone, quality and are from the easy feeding families.

W. Bernstein

Hanford, Cal.

Castleview Ranch Berkshires

The Home of ACHIEVER the Boar and Enhancer, the Other Boar

A few choice boar pigs for sale sired by the above boars. A few choice bred sows for sale at reasonable prices.

Castleview Ranch

Santa Rosa, Cal.

Bastanchury Better BERKSHIRES

LA HABRA, CAL.
E. N. WHITMORE, MGR.

Our junior yearling boar Baron Premier 157th is from the famous Gentry herd. There is no better breeding behind any boar than this young fellow has. He is a splendid individual too, smooth, large bone, good back, and with lots of size for his age.

See our reasonably priced animals for sale.

GEORGE W. BELL

A BUSINESS AUCTIONEER

When in need of high class auctioneering service I would be glad to have breeders and farmers correspond with me. I have had years of experience, know values and know pedigrees. I am selling for many of the leading breeders of California and am prepared to deliver the same results that have attracted this custom. Terms reasonable. Write, wire or phone.

GEO. W. BELL

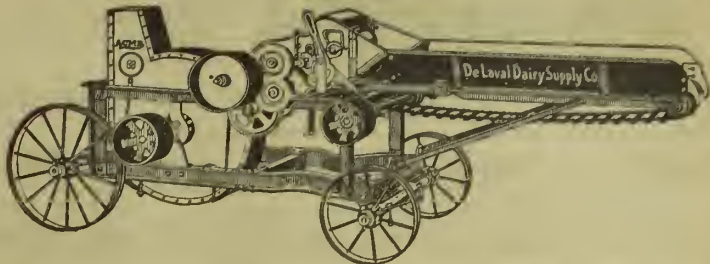
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IMMEDIATE DELIVERIES

The ACME Cutter



Time to Fill the Silo

We have just received a Car Load of Acme All Steel Cutters and can make immediate deliveries

The Acme Cutter is constructed to cut properly. It is built for large capacity.

Acme Cutters require less power for a given capacity than other Cutters.

Convenient control of Cutter head and blower speed avoids waste in low silos and is efficient in filling high silos.

Acme Cutters have triple frame construction of heavy steel.

Positive break pin Safety Device affords perfect safety to operator.

Order your Acme Cutter now and get immediate delivery.

Write for illustrated, descriptive catalog.

O. J. WEBER CO.

759 So. Los Angeles Street

Los Angeles

California

Dispersal Sale

106 Registered Shorthorns

77 Females---29 Bulls

WILLOTTA RANCH

Owned by William Pierce

Suisun, California

Thursday, September 30, 1920

The females in this offering are a good, useful lot of breeding cattle that have been handled strictly under range conditions, representing many years of careful selection of regular breeders and the heavy milkers that produce and develop well grown, rugged calves. A large number of the females are granddaughters of the famous Glide bull KING EDWARD.

Over 30 Cows with Calves at Foot

Besides the females there will be 29 bulls in the offering, a large percentage of them ready for service. They are all reds, out of the selected dams in the herd, and ready to go out and work improvement in range herds.

Write for catalog.

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif.
Auctioneer—Col. Ben A. Rhoades, Los Angeles.

Italian Vineyard Company

Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

Alex. Wilson, Supt., Guasti, Cal.

Early to Market—Full Weight



51 per cent of all hogs marketed in the United States in 1918 were Duroc-Jerseys.

Duroc-Jersey hogs have proved themselves in championship shows as well as on the market.

Duroc-Jersey hogs raise large families and put on weight quickly. They are hardy, easy feeding animals that mature at an early age, and are uniformly red in color. Write for our Free booklet "Duroc-Jersey Hogs Are Prolific and Profitable."

The National Duroc-Jersey Record Association. Dept. 130 Peoria, Ill.
The largest swine record association in the world—12,000 members

A-1 Duroc Ranch

Where one of the state's greatest herds of Duroc-Jerseys is maintained. For years our Durocs have proven profitable to farmer and breeder alike. Better place your order now for spring pigs as what we will be able to spare will go quickly. Remember, this is the home of the state's highest priced (\$1500) and most valuable Duroc-Jersey sow.

J. P. Walker, RFD 1, Box 40½, Visalia, Cal.

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heads our select string of Duroc brood sows. At the recent Los Angeles County sales we personally selected two high class yearling sows (Pathfinder and Great Sensation blood direct), mated for September litters to the Winsor Ranch big-type boars. They find good company at our ranch.

C. C. ELLIS

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Sows and Gilts---GET ONE

Bred to farrow next two months. We are making an extremely low price on these to reduce our herd. At the price we won't keep them long. Write today. Quick, before they are all gone.

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At our Arenal Ranch breeding headquarters may be seen 150 purebred pigs from our March and April litters. Here we have the record of saving practically every pig that is farrowed, and we grow them out without stunting.

We have the blood, and we have the alfalfa runs for exercise and variety of feed. We have young stock for sale at all times, and we play no favorites as to breeds.

Come and see sires, brood sows and growing pigs.

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Lankershim, Cal.

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The Grand Champion Boar HARVEY'S CHOICE 53147
at head of our great herd of brood sows.

HARVEY'S CHOICE

Grand Champion Boar

at Los Angeles 1919

18 High Class Brood Sows in herd—young stock for sale.

A. E. Harvey, Manager

Redlands, Cal.

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The fall fair and exhibition season is at hand. THE HARTFORD LIVE STOCK INSURANCE COMPANY will insure your show stock (horses, mules, jacks, cattle, registered milch goats, and registered swine) against death from any cause, while at home or on the road, including the hazards of transportation. Policies broad and liberal; rates reasonable—yet adequate to insure prompt settlement of claims. Before shipping see the Hartford Agent in your town or address

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Bull Tops Bray Sale at \$3,300

The complete dispersal of the W. M. Bray herd of Holsteins in a sale held at Sacramento, August 26 proved a bargain day for the comparatively small crowd of buyers who attended. The sale had been watched with considerable interest owing to the high quality of the offering and the fact that the sale included the bull, Colony Zarilda Newman. This bull is a son of the famous cow, Zarilda Clothilde 3rd De Kol with 33,153 pounds of milk to her credit, and a grandson of the equally famous cow, Margie Newman. Only one other cow in the world, Tilly Alcartra, has produced more milk in a year than the dam of this bull, and there are only four bulls of service age in the world from dams that have produced 33,000 pounds of milk a year. Because of those facts the sale of the bull was the cause of wide speculation. He was purchased by James McGilivray of Sacramento for \$3300 after a bidding contest with a representative of the McCloud River Lumber Company. At that figure he becomes the third highest priced Holstein bull ever sold at public auction in this state, and represents a most unusual value.

While the general average of the sale, \$355, was considered ultra conservative, it was due largely to the fact that the sale consisted for the most part of young things and of heifers that have not yet been tested.

In addition to the purchase of the top bull, McGilivray was the heaviest buyer of females, securing nine head. The top female was the four year old cow, Netherland Baker Mercedes 2d, that has a record of 15.21 pounds butter at 16 months—said to have been a world's record when made. She fell to the bid of Gotschall and Magruder, Ripon, for \$1025. Chas. W. Anderson of Burbank secured a real bargain when he selected the 31.6 pound Lady Cornucopia Mercedes. Owen Duffy, representing the Napa state hospital, selected nine head and Geo. C. Kreutzer made several buys for the Durham State Land Colony Livestock Association. Dr. Geo. A. Spencer of Sacramento made a number of attractive selections.

The sale was under the management of C. L. Hughes of the California Breeders' Sales and Pedigree Company, Sacramento. Ben A. Rhoades was the auctioneer.

A complete list of the sales follow:

- 1, Colony Zarilda Newman, March, 1915; J. S. McGilivray, Sacramento, \$3,300.
- 2, Calif. son of Donnybrook Pontiac Posch, out of Cornelia Blossom of Donnybrook, Napa State Hospital, \$100.
- 3, Son of Donnybrook Blossom Pontiac, out of Mercedes Blossom of Donnybrook, George Robinson, Sacramento, \$30.
- 2, Lady Cornucopia Mercedes, Mar., 1913, 31.6 pounds; Charles W. Anderson, Burbank, \$810.

- 3, Lella Newman Sadie Vale, May, 1920; J. S. McGilivray, \$400.
- 4, Lockwillow Zarilda Queen Corben, November, 1918; J. S. McGilivray, \$585.
- 5, Lockwillow Zarilda Beets, June, 1919; J. S. McGilivray, \$485.
- 6, Clara Mechthilde Newman, July, 1919; J. S. McGilivray, \$475.
- 7, Netherland Baker Mercedes 2nd, February, 1916, 15.21 pounds; Gotschall & Magruder, \$1,025.
- 8, Gladys Mechthilde Newman, December, 1916; L. Tuttle, Dixon, \$135.
- 10, Margie Mechthilde Newman, April, 1917; J. S. McGilivray, \$275.
- 12, Clara Netherland Mechthilde, August, 1913; J. S. McGilivray, \$400.
- 13, Irma Newman Sadie Vale, May, 1920; J. S. McGilivray, \$240.
- 14, Model Prilly of Donnybrook, February, 1918; Gotschall & Magruder, \$275.
- 15, Calif. daughter of Model Prilly of Donnybrook by Donnybrook Pontiac Posch; A. W. Morris & Son, Woodland, \$135.
- 16, Nudine Pontiac of Donnybrook, March, 1918; L. Tuttle, \$385.
- 17, Daughter of Donnybrook Pontiac Posch out of Nudine Pontiac of Donnybrook; Dr. G. A. Spencer, Sacramento, \$100.
- 18, Daughter of Donnybrook Blossom Pontiac out of Louise Prilly of Donnybrook; Durham State Land Colony Livestock Association, \$100.
- 19, Louise Prilly of Donnybrook, April, 1918; Napa State Hospital, \$275.
- 20, Cornelia Blossom of Donnybrook, April, 1918; Dr. G. A. Spencer, \$260.
- 22, Eva Prilly of Donnybrook, April, 1918; L. Tuttle, \$310.
- 23, Countess Prilly of Donnybrook, April, 1918; Napa State Hospital, \$325.
- 24, Daughter of Donnybrook Pontiac Posch out of Countess Prilly of Donnybrook; Napa State Hospital, \$150.
- 25, Netherland Blossom of Donnybrook, April, 1918; J. S. McGilivray, \$210.
- 26, Daughter of Donnybrook Pontiac Posch out of Netherland Blossom of Donnybrook; Napa State Hospital, \$150.
- 27, Canary Blossom of Donnybrook, July, 1918; Napa State Hospital, \$325.
- 28, Daughter of Donnybrook Blossom Pontiac out of Canary Blossom of Donnybrook; Durham State Land Colony Livestock Association, \$105.
- 29, Jacoba Blossom of Donnybrook, July, 1918; Napa State Hospital, \$275.
- 30, Mercedes Blossom of Donnybrook, June, 1918; J. S. McGilivray, \$225.
- 32, Lilly Blossom of Donnybrook, June, 1918; Napa State Hospital, \$325.
- 33, Daughter of Donnybrook Blossom Pontiac out of Lilly Blossom of Donnybrook; H. N. Belgum, Richmond, \$110.
- 34, Lady Prilly of Donnybrook, May, 1918; Napa State Hospital, \$375.
- 35, Daughter of Donnybrook Blossom Pontiac out of Lady Prilly of Donnybrook; Dr. G. A. Spencer, \$110.
- 36, Daughter of Ononis Cornucopia Johanna Newman out of Nena Juanita; C. W. Anderson, Burbank, \$335.
- 37, Daughter of Duke Mechthilde Newman out of Clara Netherland Juanita; C. W. Anderson, \$400.
- 41, Lilith Ormsby of Donnybrook, June, 1919; Dr. E. J. Weldon, Sacramento, \$180.
- 42, Louise Ormsby of Donnybrook, April, 1919; Durham Land Colony, \$170.
- 43, May Ormsby of Donnybrook, April, 1919; Dr. E. J. Weldon, \$160.
- 44, Ormsby Hengerveld of Donnybrook, April, 1919; Durham Land Colony, \$165.
- 45, Mercedes Pontiac of Donnybrook, December, 1918; Charles W. Anderson, \$335.
- 46, Jacoba Pontiac of Donnybrook, December, 1918; Charles W. Anderson, \$290.
- 47, Lucy Pontiac Donnybrook, C. W. Anderson, \$310.
- 48, Daughter of King Mechthilde Newman out of Ononis Mechthilde Newman; Gotschall & Magruder, Ripon, \$250.

Livestock News Notes

That grade cows are not bringing the good prices of a year ago was clearly evident at the auction sale held at the old Whitten ranch southwest of Porterville, Wednesday, August 25. Half a hundred Holstein cows were offered, but bidding was slow and the figures at which the animals were knocked down were quite low in the opinion of most stockmen. One thing was quite noticeable, most ranchers are looking for purebred characteristics even in the most inferior grade animals and bid accordingly. They are gradually refusing anything but the best and want something to bring up the quality of their herds. The cows sold were mostly pasture bred and carried incomplete records of milk production, which of course had its influence on the buyers. One good cow went for \$180, a price far in excess of the average, which was about what they would weigh out for beef. The individuals in which the white predominated seemed to be favorites. A group of short yearlings brought a fairly good price.

At the recent farm bureau auction sale of fat hogs held at Dixon the top price was \$15.30. About 200 hogs were sold.

H. C. Witherow of Greenwood Farm, Live Oak, reports the following sales from his herd of Duroc-Jerseys:

A fall boar to Gomez and Watson, Marysville; a fall boar to H. E. Berg, Marysville; spring boars to G. M. Sparks, Ingomar; John Borghman, East Nicolaus; John Kincaid, Bakersfield. Most of the boars mentioned are the get of Johnson's Defender Jr.

The annual Ogden Livestock Show will be held at Ogden Union Stock Yards January 6, 7 and 8.

Six carloads of wool have been shipped from Solano County through the state wool pool.

E. H. Hughes, formerly with the Missouri college of agriculture, has arrived at the university farm, Davis, to enter upon his new work with the division of animal husbandry. Hughes is regarded as an exceptionally strong man in animal husbandry work.

Professor R. F. Miller of the University of California has announced the appointment of C. E. Howell on the staff of the animal husbandry division. Howell, who is a graduate of the University of Missouri, has been engaged in livestock work in the state of Washington for the last few years.

Alex. D. McCarty, Modesto, has been very busy lately remodeling his hog plant at Riverina Farms. He has added a large number of individual

alfalfa lots with all modern conveniences for hog comfort and will soon be as well equipped as any breeder in the state. The McCarty herd under the careful management of Herdsman Curtis will be prepared to give strong competition at Sacramento, especially in the Poland sow classes.

Dr. L. J. Anderson, the newly appointed field secretary of the California Duroc-Jersey Association, is very busy getting his new work in hand. By way of a starter he has arranged for a consignment sale consisting of 25 sows and five boars to be held at Dixon some time in December. The stock to be selected from the herds in the Dixon district. Dr. Anderson is also organizing several pig clubs in various parts of the state.

The Las Posos Land Company sale of 500 grade Holsteins at Corcoran, August 18 to 19, is reported as one of the highly successful sales of the season. All cattle, 100 feeder hogs, and ranch equipment were cleaned up at very satisfactory figures, with Rhodes & Rhodes, salesmen.

J. L. Dunlop, breeder of big type Poland Chinas at Pomona, plans an exhibit at the Los Angeles and Riverside shows. His line bred boar Longfellow Timm, should be a strong contender for honors in the junior yearling class.

A daughter of Great Wonder I Am has just been purchased for the J. C. Craig Ranch at Owensmouth. This young sow comes from a leading Iowa herd and is bred to Pathmaster, said to be the largest boar for age in Iowa. His sire is Valley Col., champion of Illinois, dam, Queen of Pathfinders, the world champion. Craig has also secured a daughter of Pathfinder's Victory, littermate to Queen of Pathfinders. She is bred to High Top Orion, grand champion senior boar pig of Iowa, 1919, and a son of 1918 world's champion.

WHAT MAKES 100 POUNDS OF MILK?

A two year study of the cost of milk production undertaken cooperatively by the United States dairy division and Purdue University, on a number of dairy farms in northwestern Indiana, has resulted in figures on the requirements for producing 100 pounds of milk in winter and in summer. To give permanent value to the results these requirements were determined in pounds of feed, hours of labor, etc., and by substituting present costs and values for the various items a farmer can determine very closely what it is costing him to produce 100 pounds of milk at the present time.

In the summer months the requirements for 100 pounds of milk were as follows: Concentrates, 20 pounds; dry roughage, 27.4 pounds; silage and other succulent roughage, 60.1 pounds; hauling and grinding concentrates, \$0.014; pasture, 0.04 acre; human labor, 2.2 hours; horse labor, 0.2 hour; overhead and other costs, \$0.393.

In the winter months the requirements for production were: Concentrates, 38.6 pounds; dry roughage, 66.8 pounds; silage and other succulent roughage, 147.6 pounds; hauling and grinding concentrates, \$0.03; bedding, 20.3 pounds; human labor, 2.5 hours; horse labor, 0.3 hour; overhead and other costs, \$0.385.

It has been generally believed that the cost of producing milk was considerably higher in winter than in summer; and while this holds true as far as the gross cost is concerned, the figures obtained in this investigation show that the net cost of producing 100 pounds of milk from November to April was only 1.8 per cent higher than the cost from May to October, inclusive, and that the total cost varied only slightly from month to month within each of these seasons. This small difference between net costs of production during winter and summer is largely due to the greater credit allowed for manure during the winter season.

The price received for the milk, however, fluctuated sharply from month to month.

DIAMOND BAR RANCH

The Gateway to Better Durocs

See the representative individuals of all the world's leading families, including the Pathfinders, Sensations and Orion Cherry Kings, in our show herd at the coming State Fair.



An Orion Cherry King senior yearling.



A junior yearling by Great Orion Sensation.



Ace of Pathfinders, head of the World's Grand Champion herd, 1919.

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Duroc-Jerseys

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The World's Record Boar
The Largest Jr. Yearling
in the World

The Best Type Boar of the Breed
Cost \$15000.00
A World's Record of Jr. Yearling

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The Greatest Duroc Boar of His Age! Choice Wonder 3d

a winner at the 1919 Iowa State fair, sired by the great boar, Mahaska Wonder, and a litter mate to the first prize junior boar of Iowa, heads our herd. He is the largest, heaviest boned, best footed boar in the state and he is being mated to the sows that have made this herd famous for futurity winners. Get your order in early for his pigs. Prices are most moderate. Satisfaction guaranteed.

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Baby Chicks. We are now filling our hatcheries in preparation for the fall season which will soon be in full swing, and we can make deliveries in small or large quantities of the following kinds of chicks: R. I. Reds, Barred Rocks, White Leghorns, Brown Leghorns, Anconas, White Minorcas, Blue Andalusians and Mammoth Bronze baby turkeys. Send for our prices and place your order as early as possible so as to be sure of getting your chicks at the time you want them. Pioneer Incubators, Brooders, supplies, etc., always on hand. **PIONEER HATCHERY**, 320 S. Spring Street, Los Angeles, California.

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S. C. White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Now booking orders for this Fall and next Spring delivery. Prices and terms gladly sent on request. Hatchers and shippers of Baby Chicks since 1898. **MUST HATCH INCUBATOR COMPANY**, 438 Seventh Street, Petaluma, California.

Santa Cruz Chicks are in demand. Our hatchery will run full blast this fall, supplying Leghorns, Minorcas, Anconas, Rocks, Reds and Orpingtons. Write for folder with price list. We also offer Hydes W. L. Cockerels from Pen 1, with trapnest record 236-284. B. W. Archibald, Soquel, Santa Cruz County, Calif.

Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. L. W. Clark, 615 Main Street, Petaluma, California.

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S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write Henry Miller, Supt.

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White Leghorns—Chicks, hatching eggs and breeding stock from the home of heavy layers. Fall chicks pay big. Free folder tells why. Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, California.

Single Comb White Leghorn Chicks from our Hoganized and Trapnested stock, 100 or 1000 lots, booking orders September and October deliveries. Forster Brothers, 2918 Otis Street, So. Berkeley, California.

Eastman's Bred-to-Lay Hoganized and Trapnested Barred Rocks. **FALL CHICKS.** Fairmead Poultry Farm, Fairmead, California.

White Minorca Baby Chicks and Hatching Eggs—Dark Cornish and Silver Campine eggs. Folder. Leech Poultry Yards, Baldwin Park, California.

Thoroughbred Rocks—15 years a breeder, records 210 and better. Mrs. M. A. Warren, 36 Little Delmas Ave., San Jose, Cal. Eggs \$2.50, 15.

Day Old Chix—Barred Rocks, R. I. Reds, Buff Orpingtons, Black Minorcas, Anconas, Buff, White and Brown Leghorns. Enoch Crews, Seabright, California.

Baby Chicks from selected egg type S. C. White Leghorn hens. Tupman Poultry Farm, Box 7-C, Ceres, California.

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For Sale—Ayrshire Bull No. 17814, Triunes Lad of C. H. A. F., born Feb. 1914. Selling him because I need new blood in herd. Farmer's price. For particulars write H. G. Ranch, Solvang, California, or call at ranch to see him.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

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Wanted—Carload of wheat straw and also carload of mixed grain, wheat, milo maize, Egyptian corn, white, etc. Must be reasonable in price. Write all particulars to Hohn & Smaus, Los Gatos, California.

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Fifty Head of Durocs, bred sows, gilts and pigs. Three boars ready for service. Five March boars, grandsons of Mary Jane Pathfinder. One sow of Orion Cherry Pathfinder out of Lambs Model Lady. Five boars out of Cherry Queen Pathfinder and sired by Lords Orion Cherry King. For information and prices write Elmer Lamb, Ceres, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

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Durocs—Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. J. L. Stevenson, Van Nuys, California.

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. Hollow Hill Farm. B. W. Shaper, Manager, Colton.

Winsor Ranch Durocs—Boars and bred gilts of our own and eastern breeding. Write us your needs. Morris C. Allen, Manager, Bonita, California.

December and March Duroc boars; Pathfinder breeding. Sterling Smith, Route 1, San Diego, California.

For the Best in Durocs write June Acres Stock Farm, Davis, California.

POLAND-CHINAS

I Would Sell My topnotcher boar by Kings Big Bone Leader; two bred sows by Long Smooth Jumbo; also spring pigs—everything big type stuff. H. Christianson, Arlington. Write me.

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. J. H. Crawshaw, Hanford, California.

The Grand Champion El Profito heads our big type Poland Chinas. Letters promptly answered. Viola L. Renwick, Santa Barbara, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. Ferguson & McKaig, Orland, California.

HOGS

For Sale—A bred sow from Underhill's last year's bred gilt sale now carrying third litter. You can't buy a better Hampshire no matter what you pay. Any rancher can get a start in this prolific, hustling, profitable breed for \$75.00. Above refers to O. U. R. Anise, No. 139624. R. M. Cartwright, Box 65, Gardena, Cal.

HAMPSHIRE

PRINCE LANGDON OF EDGEMOOR 76139 and two bred sows. All farrowed in May, 1919. Bred at Langdon's. The three for \$500.00. M. S. Stough, El Cajon, California.

AGRICULTURAL IMPLEMENTS

For Sale—Slightly used Power Corn sheller, 4 hole. Has bagger, self feed, cob carrier. Worth now \$650.00, will take \$290.00. ARNOTT & CO., Inc., Los Angeles.

FARM LANDS FOR SALE

Orange Grove Bungalow Farm, 21 Acres, Equipped, \$3500

On good road, near city; 19 acres under productive cultivation; borders lake; orange grove, grapefruit, pears, plums, figs, grapes, guavas, all bearing; good 7-room bungalow, 3 piazzas; barn, poultry house, magnificent lawn, shrubbery, rose bushes, oak and magnolia shade; owner retiring; includes horse, wagon, machinery, tools; quick-action price only \$3500, easy terms. Details page 35 Strout's New Illustrated Catalog Semi-tropical Orange Groves and Farms. Copy free. **STROUT FARM AGENCY**, 503 E. J. Wright-Callender Bldg., Los Angeles, California.

For Sale—75 Acres delta land with beach climate, \$300.00 per acre. Perfectly level rich sedimentary soil. About half now in celery. 10 or 15 acres more just cleared and being prepared for 300 sack potato crop. Balance in light willows and tule. Three miles from Watsonville, and adjoins R. R. siding. \$12,500 cash, balance 4½ years at 6%. Ask for McLean place. Farm and Forest Realty Co., Watsonville, California.

For Sale—Good River Farm of 122 acres suitable for fruit or alfalfa; in fact will grow anything. 25 acres in alfalfa, about 20 acres in corn, 1 acre in young family orchard, 17 acres pasture land and timber, balance farmed to grain. All fenced hog tight. Modern five room bungalow with hot and cold water, bath and toilet. Large barn and tank house, 6,000 gal. tank, good pumping plant for irrigation, near town and high school, one mile from grammar school. For further information address Box M, California Cultivator.

For Sale—70 Acres, 2 miles from Bishop; 25 acres in alfalfa, 12 acres in nice meadow, all under cultivation with exception of 4 acres. Fair 4 room house, balance in melons and garden truck. Water stock 60 inches. For information address Geo. W. Garner, Bishop, California.

For Sale—300 Acre Farm situated Santa Barbara County. All implements necessary for beans and hay, including bean thresher, Fordson tractor and plow, side delivery rake. Large house and barn, chicken house, bunk house, implement shed and well equipped shop. Soft water, modern system. Apple trees, nuts and various fruits. Owner must sell, ill health. Easy terms. Address Alfred L. Friel, Lompoc, California.

For Sale—80 Acres within 1½ miles from Bishop, California. 17 acres in alfalfa, 25 acres in corn; 60 head of thoroughbred Duroc pigs, 3 good mares, 6 or 7 good cows. All tools in good shape, 5 room house, 2 barns and other outbuildings. All fenced and cross fenced. For particulars address Geo. W. Garner, Bishop, California.

FOR SALE AND EXCHANGE
10-20-40-60 and 80 acre ranches, rich, level, plenty water; proven grape (Thompson seedless), fig and alfalfa land. Price right, easy terms.

FOR SALE
Some of the finest dairies in the state. Chas. McNeely, Alpaugh, California.

For Sale—1200 Acres of land on the river, 1000 inches of water. Free water now accessible. River running through the land, good ranch house, stable, corrals, all fenced and cross fenced, 3½ miles from Bishop and from Laws, California. 50 acres of alfalfa. For particulars address Geo. W. Garner, Bishop, California.

ANTELOPE VALLEY
Buy cheap, good alfalfa and fruit land in the easy lift water district near improved dairy and hog ranches. \$50 to \$75 an acre, one-fifth cash. Send for circulars. The R. & L. Ranch, 611 Fay Bldg., Los Angeles.

Owner Will Sell equity in 5¼ acres exceptionally good Valencia oranges. Best buy in choice North Whittier Heights district, good crop on trees. \$12,300. Cash required. Box 1206, Puente, California.

For Sale—80 Acres, 12 miles from Bishop, Round Valley District; good house, garage, stable, corrals, fenced and cross fenced; 25 acres in meadow, 20 acres in alfalfa, balance in corn, oats, etc. For information address Geo. W. Garner, Bishop, California.

Alpaugh Farm Lands—Any quantity. Grows grain, alfalfa, or cotton. Good dairy and poultry country. Excellent water conditions. W. A. Settle, Real Estate, Alpaugh, California.

For Sale—Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

Geo. W. Garner can furnish from 5 to 1200 acres of the best land in the Valley. Address him Bishop, California.

Irrigated Alfalfa Ranches for sale. Other crops, plenty water. C. I. Graves, Fallon, Nevada.

Fifteen Acres Best Pear Land, half pears and prunes. \$400.00 per acre. Box 328, Lakeport, California.

Irrigated Farms—Five acres and up. Alex. Murdock, Brentwood, California.

SALESMEN WANTED

Men With Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write J. H. Vetter, 115 North Broadway, Los Angeles.

GOATS

Breed Your Does to Saanee, a short coated Saanen buck. Purebreds \$15.00. If kid develops horns fee returned. Grade does \$7.50. If doc kid develops horns fee returned. The guarantee is worth the fee. Does left here must be arranged for in advance. L. C. Buhl, West 24th Street, Unland, California.

GOVERNMENT LAND

300,000,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book THE HOMESSEEKER which tells you where this land is and how to acquire it, or send \$2.00 for book direct. The Homeseeker, Dept. M, 336 S. Broadway, Los Angeles, California.

RABBITS

New Zealand Reds—Young stock. Reasonable prices. Josephine Spencer, 1916 21st St., Sacramento.

MACHINERY

SPECIAL SALE CYLINDERS

Have 60 Brass Cylinders
Guaranteed to do the same work as new
In part as follows:
15 new ones 2½-in.x12, 3x12, some
flush caps 1¼ & 1½ openings, \$7.50;
3½-in.x20 D. V., \$16; 4x30 Draw
Valve, \$27.50; 3x28 D. V., \$18. Heavy
1½-in. to 36-200 ft. lift, \$15; 5-in.
Heavy 1½-in. to 36-200 ft. lift, \$15; 5-in.
x16 heavy, \$23; 5-in.x22, \$25; 6-in.x18, \$25;
3½x30-200 ft. lift, fine, \$18, takes 4-in. O.
D. Casing, 6-in.x30-3 or 4-in.st. outlet, \$40.
Red Jacket Heavy Brass lined 4-in.x36,
\$35. Heavy Ball Valve 3½-in.x45 3 leath-
ers, very fine, cost \$100 D. V., our price
\$58; 4½-in.x50 Brass lined, \$30; 5-in.x36
Pomona, \$45; 4-in.x66 Double acting, \$60;
6-in.x77 double acting, \$85; 7-in.x80 double
\$95. Another same size heavy \$125. Brand
new double acting 8-in.x84, \$150, others
ask \$250-25 others. Also windmills,
tanks, pumps. Why pay more? Every
cylinder guaranteed to do the same work
as new. DEMMITT CO. Office 120 N.
Main. Yards 816 Yale St. 15191, Bdwy.
1984. Los Angeles.

45 Holt Tractor, 2 3-gang plows, 2
8-ft. double disc harrows. In use less
than five months and in good condition.
Complete outfit, \$4500. R. E. Wilson, Box
234, R. D. 9, Los Angeles, Phone Ver-
mont 4552.

G. M. C.—SAMSON—G. M. C.
For Sale — Samson tractor, late model
sand wheels in fine condition, \$650, cash
or terms. For information John F. Rock,
Carpinteria, California.

For Sale—Used ranch material, windmills,
pumps, tanks, irrigating pipe, pipe fit-
tings, cylinders, rods. Write for our
"Special Bargain" price list, Demmitt Co.,
Upstairs, 120 N. Main, Los Angeles.

For Sale: One 12-20 Yuba Tractor. Been
used just 200 hours, as good as new.
Cost \$3200, will sell for \$2250, half down,
balance 6 months. Ed. Hopper, Lanker-
shim, California. Phone, Burbank 180-M.

For Sale — Caledonian Bean Cutter and
small thresher. Bargain. Chas. Young,
Whittier, California. Phone 7694.

For Sale—6-horsepower Z type Fairbanks
Engine. 2445 Prince St., Berkeley, Cali-
fornia.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and
correspondence, stationery for the
nursery, seed and florist trade; half tone
cuts of many standard plants. Corre-
spondence invited. The Kruckeberg Press,
237-241 Court St., Los Angeles.

This Month in the Flower
Garden

NORTHERN CALIFORNIA

By A. R. Gould

MANY of our best flowers are
now blooming, the stately
Campanula pyramidalis
with blue and white flowers,
Michaelmas daisies, Helen-
iums, helianthus, zinnias, tithonia and
the fall show of roses. Berried shrubs
such as berberis, cotoneasters and
crataegus will be soon at their best,
and many trees and shrubs will beau-
tify the garden with their autumn
tints. This is the month also to think
of bulbs for the spring display as it
will be in order to prepare the ground
for some of the earlier flowering sub-
jects such as freesias, crocus, snow-
drops, ixias, narcissus, daffodils, etc.
Manure and deeply trench these beds
if you would have best results. Keep
a careful watch for aphids or green
fly on the roses and spray with ni-
cotine sulphate, and for mildew use
sulphur. Some shrubs will probably
need spraying also for scale insects.
Lime and sulphur or a kerosene emul-
sion wash are usually effective.

Early Bulbs

Freesias, those very fragrant flow-
ers in pure white, yellow and now or-
ange and lavender shades, should be
planted this month either in groups
or along the garden paths. They de-
light in a rich soil. When buying
secure only the best large size flow-
ering bulbs. Recently a new type has
been introduced, Freesia Ragoneri
hybrids which will flower from seed
sown the first year. Plant the bulbs
three inches apart.

Subjects for Winter

The following should be sown at
once for a winter display: Snapdrag-
ons in various shades, tall and medi-
um height; stocks, Ten Week; pan-
sies; violas; calendula; alyssum sax-
atile and Aubretia; also Primula poly-
anthus, P. veris and P. malacoides.
Sow these in boxes or on a semi-
shaded border. Later transplant.

Winter Flowering Sweet Peas

Seed of the best winter flowering
varieties should be sown now, and of
these we recommend: Early Snow-
flake, Orchid Red, Heather Bell, Song
Bird, Spring Maid, Early Warbler
and Early Peace. They thrive best
in deeply manured trenches.

Dahlias

Feeding with liquid manure twice
weekly will improve these and give a
longer flowering period. Cultivate this
plot frequently and spray or dust with
lead arsenate if the four lined bug or
other leaf eating insects are trouble-
some. Any of the best varieties of
which seed may be secured should be
selected and saved as frequently some
very interesting types may be raised
from such seed. Continue to disbud
to the main or terminal bud.

Chrysanthemums

The Queen of Autumn is now show-
ing buds. In fact, some of the early
flowering single varieties are in
bloom. The large flowered Japanese
reflexed and incurved need some skill
to grow as the right bud must be
taken and grown on to get the large
flowers. Many growers however are
now devoting their space to the new
singles, and pompoms of which there
are some beautiful types, and the
quilled singles are excellent. Fre-
quent applications of liquid manure
should be given now and overhead
spraying late in the evening until the
flower buds burst. Aphids usually are
very troublesome at this stage and
should be destroyed with nicotine
spray.

Charming Dianthus

The dianthus family has given us
some wonderful subjects, but one of
the best of recent years is Dianthus
deltoides rosea, a beautiful pink peren-
nial which flowers for several months
during the summer, looks happy
among the rocks in the rock garden,
or even in massed effect in flower
beds or along the border it is very
useful. It is easily raised from seed
sown now on a well prepared border
and grows about six inches high. It
will flower from seed in less than a
year. Interplant this for a fine border
effect with lobelia and you will have
a wonderful combination.

Lawns

Apply an artificial fertilizer such as
dried blood and well water in.

THE FLOWER GARDEN IN SOUTH-
ERN ARIZONA IN SEPTEMBER

By M. E. Bemis

LIFE is short at best and un-
less one gets some of the
pleasure which comes with
more beautiful surround-
ings he has lost something
which cannot be retrieved. Psychol-
ogists claim that those whose eyes
rest upon the things of nature which
are most pleasant are themselves bet-
ter natured, approach the tasks of the
daily routine with less fatigue, and
are better able to cope with the prob-
lems that confront them. In other
words, their surroundings help to har-
monize them with the great law of
nature which is for the promotion of
the good and the beautiful. It is a
great relief in traveling through the
country to find, as we frequently do,
some bare and otherwise unattractive
shack which is being used for a home,
beautified by vines and surrounded by
small plants and flowers. These things
of nature add more charm to the habi-
tation and go farther to make it a real
home than paint or the highest type of
architecture.

The flowers which may be planted
in September in Southern Arizona are
the ageratum, mignonette, freesia
bulbs, phlox, nasturtiums, pansies,
sweet alyssum, hollyhocks, zinnias
and Christmas flowering sweet peas.
Ageratum is a hardy annual, easy
of culture and popular for beds or bor-
ders.

Mignonette is also a hardy annual
and grows from six to 12 inches high.
Seed sown in the fall will bloom early
in the spring.

Phlox Drumondii are favorites for

Continued on Page 304

FAGEOL
WALKING
TRACTOR

The range of performance of the Fageol tractor
is ever widening. Grain lands are now exten-
sively worked with them. Farmers find that,
with several of these small tractors aggregating
the same total power as one large machine, they
require fewer high-priced mechanics, lose less
operating time, get better net results.

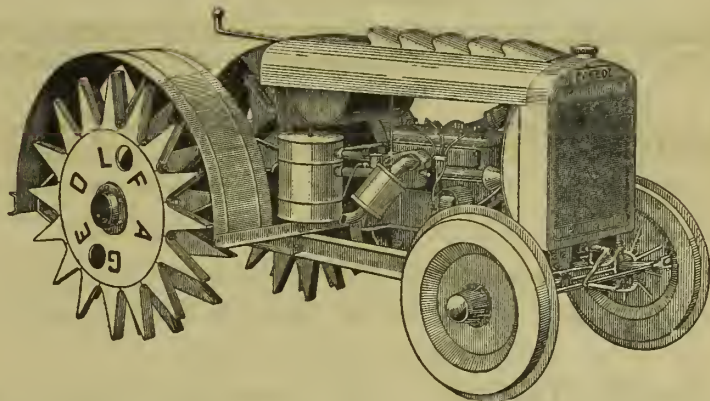
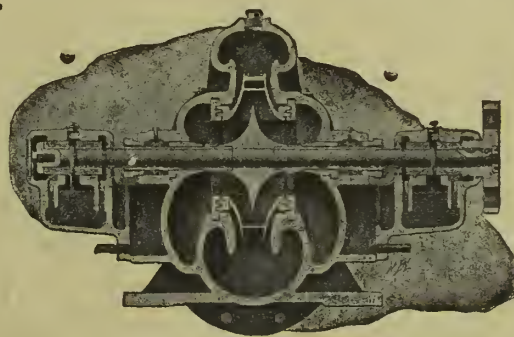
For a fleet of, say twelve Fageols, using one
mechanic, one good driver and ten common labor-
ers, at least 90 per cent of the outfit will be
constantly at work.

Exclusive Fageol Features
Increase their operating range
Reduce their operating cost

See your local dealer immediately. He has a
new plan that will make delivery when you want
it certain.

Butler-Veitch
INCORPORATED

Sales Organization—Fageol Products

24th and Harrison Streets
Oakland1230 Market Street
San FranciscoDE LAVAL
IRRIGATION PUMPS

High Efficiency Saves Power

Above is pictured a cross section of the DeLaval double suction
single stage pump.

Notice the smooth, easy passage for the water. This produces
high efficiency and therefore saves power. Note the double suction
principle and labyrinth rings.

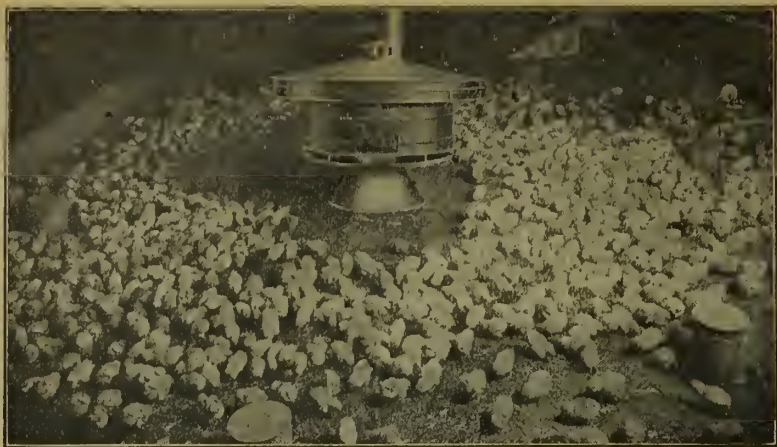
The pump case of the DeLaval is split horizontally. This feature
permits of inspection without destroying pipe connections.

This is one of a series of advertisements explaining
the different parts of the DeLaval Irrigation Pump.

Write us and learn what can be saved
with High Efficiency Pumps.

Herzog Electric & Engineering Co.
169 Steuart St. San Francisco

At the bottom of your letter to advertisers just say "California Cultivator"
and prompt reply is assured.



"Pride of Petaluma" and Her Happy Family

THE PRIDE OF PETALUMA TRIPLE CONE VENTILATING BROODER STOVE HAS a DIRECT OIL BURNER, NO WICK, Burns COAL OIL or DISTILLATE with PERFECT SATISFACTION. Automatic REGULATOR Controls the Flow of OIL. This Stove is so constructed that the heat is evenly Distributed over the FLOOR where the BABY CHICKS MUST have it.

THESE STOVES are built in THREE sizes, 2-B, 4-B and 12-A.

THE KRESKY STOVES are built up to a STANDARD and NOT down to a PRICE.

Capacity, 500 to 1500.

Write for Catalogue No. 70—It is FREE.

Kresky Brooder Stove Co.
Petaluma, Cal.

Sandstrom Tractor Scraper

An Ideal Scraper to Do Your Leveling

It is light draft and operated by driver from the tractor seat

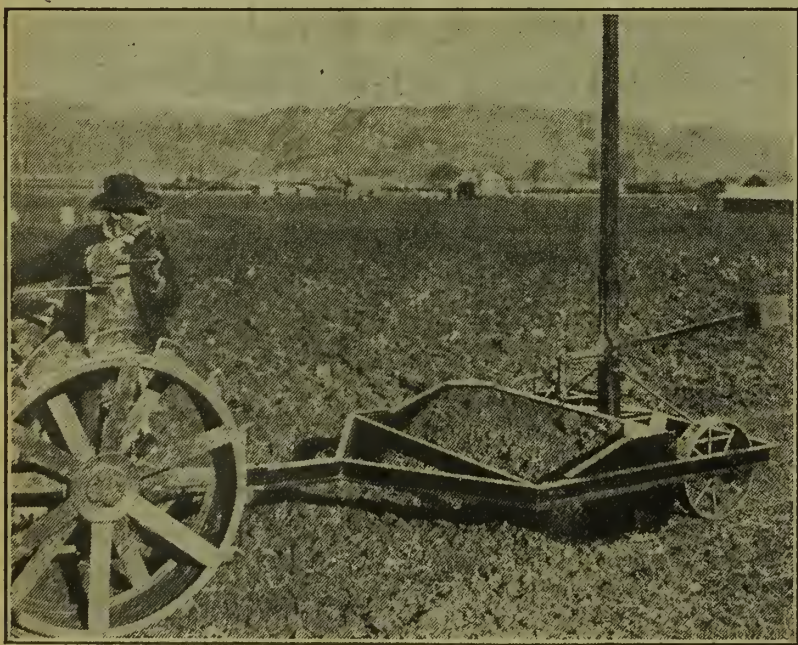
Made in 3 Sizes for Small or Medium-Sized Tractors

Manufactured and Distributed by

B. SANDSTROM 1822 Nason Street, Alameda, Cal.

Dealers wanted everywhere

SEE MY SCRAPERS AT THE STATE FAIR



Your Soil Needs Humus and Nitrogen Bacteria

Melilotus Indica Supplies Both

Now is the time to plant it. Buy only seed that has a quality test tag on every sack. It protects you against seed of low germination. Buy from your local dealer or from

Aggeler & Musser Seed Co.

Look for the Tag

Los Angeles, Cal.

A Woman Who Works With Her Head

By Jean A. Koethen



THE prevailing masculine idea that a woman uses her heels when she ought to use her head may be true of the woman whose pathway from range to sink is worn deep with the daily grind, but it does not apply to the poultrywoman. To make any sort of success with poultry a woman must use her head—so says Mrs. E. Decker of San Gabriel, and she ought to know. To care for nearly 2,000 hens and pullets, besides hatching and selling many thousand chicks each spring, with only a little help on the cleaning and some other heavy jobs, is a man size task, and any woman who accomplishes it must use her head.

"I find I must save myself on the heaviest work," said Mrs. Decker, "for the head is not clear when the back is tired, and one must think one's way through." In every part of her big plant she has carried out this plan, and it is astonishing, when you come to think of it, in how many ways steps can be saved in the care of poultry.

There are her self feeding bins, for instance, one in each house. These need only to be filled every two weeks or so and the mash shaken down occasionally so that it is always within reach of her birds. Then a particularly interesting device is a sort of wire pocket under the droppings board, in which greens are fed. This pocket is two or more feet from top to bottom and so arranged that it catches every bit of air that is circulating and is kept fresh for a long time. The hens peck through the wire but cannot drag the cut alfalfa onto the ground.

How her big brooder house, which will hold 1,200 chicks, could be so arranged that extra pullets could be kept in it late into the summer was a puzzle which kept Mrs. Decker thinking for some time. Finally she hit on the plan of building a long wooden awning over each of the two east windows. In warm weather, and even in rainy weather, if the chicks are not very young the windows can be removed. The awning keeps out the morning sun, admits air and adds much to the availability of the house.

The door of the feed room opens on the south and catches the sun all day. How to save carrying feed out through the heat was another problem which was finally solved by building several chutes which carry grain and mash out into the shed room where the big clover cutter stands. On a shelf above the chutes stand half a dozen pails on each of which a big black number is plainly painted. "I could never make the boys I hired now and then understand where a given pail of feed was to go," said Mrs. Decker. They invariably took the right pail to the wrong house. Finally I painted a number on the door of each house and the same number on a pail. Now when boys carry the pails they don't have to remember; they just make the numbers match."

In the incubator cellar is a compact set of cooling shelves and a table that folds up against the wall. Three thousand chicks can be hatched here at once, and 1,200 of them can be brooded around the big brooder stove. "One can probably save more chicks if they are kept in smaller flocks," admits Mrs. Decker, "but I prefer the large flock because the labor is less." To make sure that the chicks are abundantly warm at bedtime more heat is turned on just as they are ready to sleep. This overcomes the chilly feeling that keeps them from settling down quickly, and as soon as they are settled down for the night the temperature is lowered again. The chicks are taken from the brooder house at six weeks of age and put in colony houses where they are warmed at night by kerosene lamps if necessary. A little heat is all that is required and the lamps answer the same purpose as the more expensive portable hovers.

A Convenient House

The laying house is of a type used by several San Gabriel poultrymen and differs from the conventional design in that the front is boarded up two-thirds of the way to the eaves. A wide door in the side and another at the

end with ventilators under the droppings boards and also above them under the eaves supply any lack of air from the closing of so much of the front. The closing of the space under the eaves, which is advocated by so many writers and lecturers, Mrs. Decker has not found necessary. The door at the end of the house is divided in the middle, making it possible to admit more air without a floor draft.

Mrs. Decker came to San Gabriel three and a half years ago, alone and anxious to make a living by outdoor work. Her work with poultry has been unexpectedly successful, and she has built up not only a big poultry plant but a cozy home with garden, fruit trees and all that makes country life worth while.

POULTRY, RABBITS AND PIGEONS AT LOS ANGELES LIVESTOCK SHOW

Premium lists offering attractive awards in the poultry, rabbit and pigeon show in connection with the Los Angeles Livestock Show, October 2 to 10, are bringing dozens of letters reserving display space. "We have every assurance of a large attendance and a most successful show," says E. I. Hammond of Riverside, who has been appointed manager of the poultry, pigeon and rabbit displays. "We earnestly hope all fanciers will unite with us in presenting a show second to none in the West. This year we expect displays of 1750 poultry, 500 pigeons and 500 rabbits. Buildings are being specially constructed to house this show." Entries close September 15.

Poultry classes are arranged for every breed named in the American Standard of Perfection for Poultry. All premiums are open to the competition of the world except club prizes and specials. Poultry and rabbits draw cash prizes of \$2 to \$1; exhibition pens of poultry draw \$5, \$3, \$2.

Special and Sweepstakes Poultry Prizes

Best display, any one variety, single exhibitor, \$20; second best, \$10; best display by novice, \$5; best display in American class, \$10; Mediterranean class, \$10; Asiatic class, \$10. Best display Bantams, \$10; waterfowl, \$10; turkeys, \$10. Groups of Polish, Hamburg, French, Game and Continental classes, \$10. For largest exhibit by any one exhibitor, \$20.

"RED TOP" STEEL FENCE POSTS

America's Foremost Fence Post

The "Red Top" Steel Fence Posts have earned the right to be known as the world's foremost fence post.

Millions of these permanent steel fence posts have been installed on Government property, along the right-of-ways of leading railroads and on thousands of America's best farms.

The "Red Top" has answered the every requirement of the three general classes of post users. It has given continuous satisfactory service under most adverse conditions and in each case it has made good.

Natural enough that today it is recognized as the world's standard fence post.

Know this superior steel fence post. Identify it by the "RED TOP."

"Red Top" Fence Posts drive like a stake—Anchor like a rock—No concrete used for line posts.

WRITE TODAY For Illustrated Folder Give Description of Property to be Fenced

Harry L. Baylies
212 Commercial St.
Los Angeles Cal.

Commercial Poultry Classes

Best displays, \$10 to \$1; best layers, \$5 to \$3.

Special and Sweepstakes Rabbit Prizes

Best display by one exhibitor, \$20; second best, \$10; best display by novice, \$5; by school boy, \$2.50; covies, \$3 to \$2.

Special and Sweepstake Pigeon Prizes

Best display fancy pigeons, \$10; utility pigeons, \$10; pigeons, open to exhibitors outside Southern California, \$5; largest display racing homers, \$5; best bird among 15 varieties, \$5; largest exhibit in pigeon department, \$10.

Los Angeles County school junior poultry clubs are expected to enter 200 specimens in the poultry, rabbit and pigeon displays.

Poultry Queries

Conducted by J. A. Koethen

Cholera Perhaps

Our black Minorca hens seem to get helpless in the legs and can only travel about by beating their wings on the ground. Their bowels are very loose. In a few days they die. In some cases the comb turns very dark and becomes limp and they just mope around till they drop and die.—J. B. P., Lodi.

The symptoms suggest fowl cholera, which manifests itself in so many different ways that it is impossible to diagnose it without a bacterial examination. The only treatment that secured results with the cases treated by Dr. Beach of the poultry division last winter was a thorough cleaning up of the premises, with isolation of the sick birds and the use of bichloride of mercury (1-5000) in the drinking water. Bichloride is more effective than permanganate of potash, Dr. Beach believes, because it does not lose its strength in water, as permanganate does. Make sure that all food given is sweet and clean, without a trace of mold, feed a good balanced ration, as recommended in the answer to Longvale subscriber, with an abundance of green feed and, above all things, see that yards and houses are clean. September is a splendid time for a good old fashioned housecleaning in preparation for the heavy work of the winter.

Milk for Layers

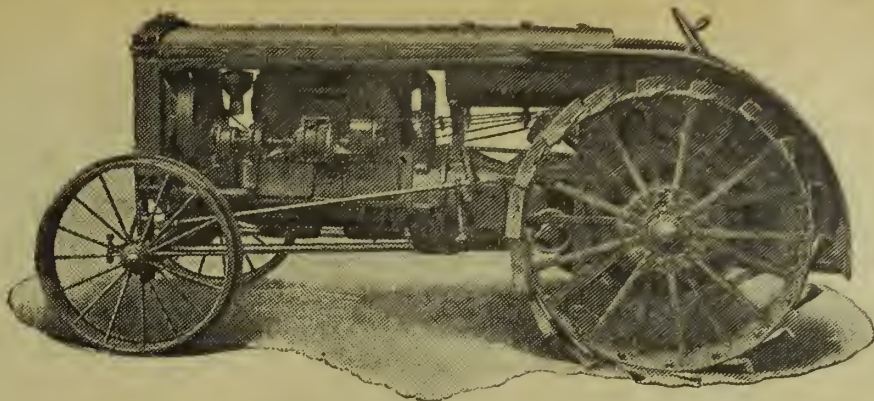
What is the best way to feed milk to laying hens?—Subscriber.

Poultrymen agree, I think, that milk is most satisfactorily fed sour and mixed with ground grain into a moist mash which is fed once a day. If it is set before them in pans it is rather mussy and is believed by some to encourage intestinal worms. Mixing it with the ground grain induces the birds to eat more mash, which is one of the things we are working for.

Intestinal Worms

My young Leghorn pullets and some of my hens are infested with intestinal worms which are often several inches long. The intestines are knotted up and seem so diseased we hardly think the birds fit for food. How can they be cured?—Subscriber, Turlock.

The tobacco treatment recommended by the poultry division of the college of agriculture at Berkeley is the easiest and seems to give satisfaction. A pound of tobacco dust is mixed with 50 pounds of the mash, which is kept before the hens constantly, and the hens eat as freely as they will of this for three weeks. Then they are given the mash without the tobacco for three weeks, when, if all symptoms of worms have not disappeared, another three weeks course of treatment is given. If you do not care to use tobacco you might try oil of turpentine which is given in doses of 10 to 15 drops, mixed with an equal quantity of olive oil. This is followed in two hours with two to three teaspoons of castor oil.



The Allis-Chalmers 18-30

A Farm Tractor for Heavy Work

THE Allis-Chalmers 18-30 is a sturdy, well built tractor that is admirably adapted to the grueling work of the average California farm.

It is built complete in the great Allis-Chalmers plant—just as all of their other machinery for the past 65 years has been built.

This 18-30 has many special features—removable cylinder sleeves—frameless construction—front axle flexibility—over sized radiator—etc. The Motor and other units are built for this tractor—not any tractor.

In this 18-30 every detail of construction has been worked out to deliver uninterrupted service, continuously and at a low operating cost.

Write at once for full information—and name of nearest dealer.

H.V. Carter Motor Co.

Distributors

52 BEALE STREET

SAN FRANCISCO

---At the
State Fair

See the Allis-Chalmers 18-30, the 6-12 and the Orchard Tractor on exhibit in the Tractor Tent.

701-3

THIS IS THE TEST

COPRO is Soluble, therefore digestable. It is nourishing and flesh building. Contains 16.4% Protein.

Write for FREE SAMPLE and copy of our booklet "SUCCESSFUL FEEDING," which contains extracts from Farmers Bulletin issued by the UNITED STATES DEPARTMENT OF AGRICULTURE and other helpful information on feeding.

FEED IT TO YOUR Cattle, Hogs and Poultry.
If your DEALER can't quote prices write us direct.

PACIFIC OIL & LEAD WORKS
Manufacturers
155 Townsend St., Dept. San Francisco, Cal.

Note the Amount of Water Absorbed by COPRO (Jar No. 1)

GLOBE "A" FEEDS

—Judge them on Business Principles!

FEED FOR SWINE, STOCK AND POULTRY.

ASK YOUR DEALER

Coulson's Baby Chick Milk Mash

The Best Feed for first six weeks

Write for particulars

Coulson Co.

Petaluma, Calif.

When Writing to Advertisers Say Where You Saw Their Advertisement

Los Angeles Markets

Los Angeles, September 1, 1920

BUTTER

Butter, creamery extras, Produce Exchange price 69 cents.

CHEESE

Brokers' prices:

California flats, 29@31 per lb.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 61 per dozen; case count Prod. Exch. closing price 58 per dozen; pullets, Produce Exchange closing price 54 per dozen; powee pullets, 37

POULTRY

Price to consumers: Hens, lt., 25; heavy, 28; colored, 32; broilers, 31; roasters, 38; old roosters, 14; fryers, 32; ducks, old, 17; ducklings, Pekin, 3½ up, 20; others, 17; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45. Belgian hares, live, 14@18; old, 9.

LIVESTOCK

Los Angeles, Aug. 31.—Welghed and delivered off cars without food or water: Hogs (hard-grain): 125 to 175 lbs., 16.50; 175 to 225 lbs., 17.50.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

HIDES

Milwaukee, Aug. 31.—Hides: Green, No. 1, according to weight, 12@15; No. 2, 11@14; green No. 1 bull hides, 9@11; No. 2, 8@10; part cured hides, No. 1, other grades in proportion, 14@16; cured No. 1 hides, 25 pounds and up, according to weight, 15@18; No. 2, 14@17; cured No. 1 bull hides, 13@15; No. 2, 12@14; dry salted hides, 17@24; No. 2, 17@18; dry flint hides, 25@30.

Horse hides, No. 1, according to size, 5.00@7.00; No. 2, 4.00@6.00.

Calf skins, G. S. No. 1 veals, 8 to 15 pounds, 20@22; No. 2, 5 to 15 pounds, 18½@20½. Deacons, G. S. No. 1, 8 pounds and down, per piece, 1.25@1.50; No. 2, 1.00@1.35; kips, G. S. No. 1, 18-20; No. 2 16½@18½; G. S. No. 1 grasser or fail, 16@18; No. 2, 14½@16½; G. S. No. 1 runner, 14@16; No. 2, 14½@16; dry flint skins, 30@40; dry salted skins, 24@34.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, August 31, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market firm. Local: Early and White Rose, fancy No. 1's, mostly 1.35@1.50; No. 2's, 75@1.00 per lug; 100 lbs. sacked No. 1's, 2.25@2.75. Socktons, 3.50 @3.75; sweet

potatoes, lug, 2.25. Onions: Local White and Yellow, lug, 75@1.00; cwt., 1.90@2.00. Garlic, lb., 12@15.

VEGETABLES

These are the actual prices obtained August 31 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 12@14; Limas, 5@6. Beets: Doz., 35@45.

Cabbage: Supplies moderate, market steady, movement good, wide range in quality. Best mostly 3½ per lb.; per field crate, best, 2.75@3.25.

Carrots: Doz., 35@45.

Celery: Doz. bunches, 1.00@1.35.

Corn: Local, best 1.35@1.50 per box.

Cucumbers: Market steady; local, best, lug, 60@85.

Egg Plant: Lb., 5@7.

Lettuce: Local, cr., best, 1.25@1.75.

Peppers: Bells and Chills, lb., 3@4.

Squash: Local summer, large lugs, 75@1.00.

Tomatoes: Local lugs, best mostly, 50@60; shipping stock, 75@1.00.

Turnips: Per dozen, 40@60.

DECIDUOUS FRUITS

These are the actual prices obtained August 31 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal. Bushel boxes: Gravensteins, 3.00@3.25. Local Various

varieties 85@1.25 per lug. Crabapples, lug, 75@1.25.

Bananas: lb., 10½@11.

Cantaloupes and Melons: Cantaloupes—Market steady, supplies heavy, quality and condition wide range. Local: Tiptop and Paul Rose, pink meats, standard crates, best 75@1.25. Watermelons, lb., 1@1½.

Grapes: Muscats, Malagas and Hamburg, 6@8; Tokays, 12@14.

Nectarines: Lb., 7@8.

Peaches: Local, best, lug, 2.00@2.40.

Plums: Lb., 7@10.

Pears: Bartlett's, best, lb., local, 5@6; Northern, 8@10.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 3.00@3.25; special packed brands, 3.75@4.00.

Lemons: Market dull, wide range in prices. Local stock: Packed, 3.00@3.50; loose, 1.25@1.75; lug, mostly 75.

Oranges: Supplies moderate, market strong. Valencias: Packed special brands, 126's, 150's and 176's, 7.75@8.50. Local packed, second grade, 4.00@4.75; packing house culls, 1.25@1.75 per box.

HONEY

U. S. bureau of markets: Demand moderate. Cars f. o. b. usual terms. White orange, 19@20; light amber alfalfa, 15½@17½; Hawaiian light amber, 14½; beeswax, 40@43.

Hamilton & Menderson: There is almost an entire lack of demand for honey. Prices to producers:

White sage and white orange, nominal, 18; light amber sage, 15; light amber alfalfa, 13½; Nevada fancy white, 15; Hawaiian honey, 12@14, according to the grade. Wax, 38@40.

A. I. Root, August 4: The honey market is very quiet, with a tendency toward lower prices. Prices to producers: Extracted amber, 15; light amber, 16@17; white, 18½@19. Beeswax, 40 cash, 42 trade. There is practically no comb honey offering.

GRAIN AND FEEDS

Grain Exch. prices bld August 31:

Barley: Carlots, on track 2.27½@2.30.

Bran: Kansas, 54.50@55.50.

Milo: Eastern bulk, 2.91½@3.00.

Corn: blk. No. 2 Yellow, 3.20@3.25.

HAY

Alfalfa Growers of California under date of August 25 quote:

Choice Alfalfa38.00

No. 1 Dairy Alfalfa32.00

Standard Dairy29.00

Stock Hay25.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats23.00@25.00

Barley16.00@22.00

Alfalfa25.00@27.00

Barley straw8.00@10.00

San Francisco Markets

San Francisco, Aug. 31, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras67½

CHEESE

Dairy Exchange quotations:

Jack, full cream23@26

Cal. Y. A.38

Ore Trips36½

Cal. Flats26½@31

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras68½

Extra Pullets60½

Undersized40½

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 9½@10; do, 1,200 to 1,400 lbs., 9@9½; do, second quality, 7@8;

thin, 6@7. Bulls and stags: Good, 4@5; fair, 3@3½.

Cows and heifers: No. 1, 8@8½; second quality, 6@7; common to thin, 2@4.

Calves: Lightweight, 10@10½; medium, 8@9; heavy, 7@8.

Lambs: Milk, 8½@9; yearlings, 7½@8.

Sheep: Wethers, 7@7½; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 15½; 150 to 225 lbs., 16½; 225 to 300 lbs., 16; 300 to 400 lbs., 15.

The California Farm Bureau Marketing Association reports sales as follows:

Tulare, August 24; four cars from 23 consignors.

No. Av. Wt. Dock Price

94 186 15.75

75 202 15.55

30 187 15.00

93 163 14.75

3 323 14.05

36 136 14.00

2 163 14.75

12 332 100 12.00

20 239 11.00

Visalia, August 24, two cars, ten consignors.

No. Av. Wt. Dock Price

80 208 15.75

71 182 15.05

1 300 14.05

7 298 13.05

32 141 12.55

8 92 11.55

20 96 8.00

Hanford, August 26, three cars, 24 consignors.

No. Av. Wt. Dock Price

93 187 15.70

55 196 15.05

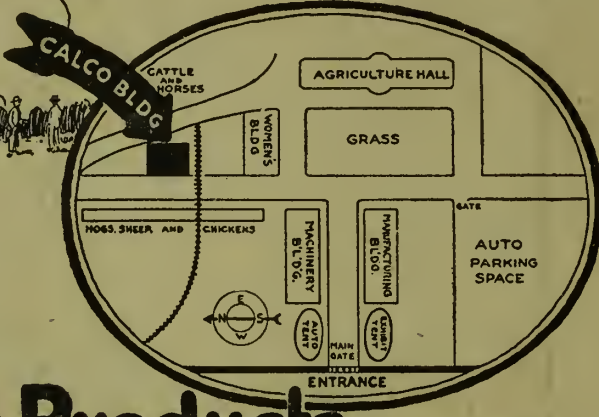
78 145 15.00

63 269 13.00

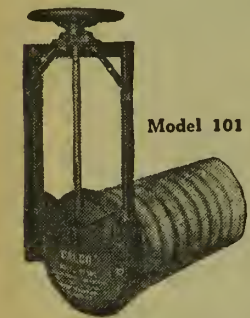
POULTRY

Wholesale prices are:

Broilers, 40@42. Colored fryers, 2 lbs. to 3 lbs., 38@45, market firm. Colored young roosters (smooth), 3 lbs. to 4 lbs.,



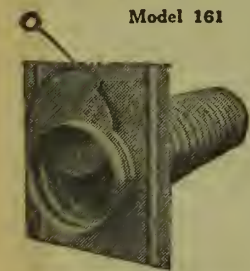
At the State Fair: See CALCO Products in our own Building



Model 101

Slide Headgate

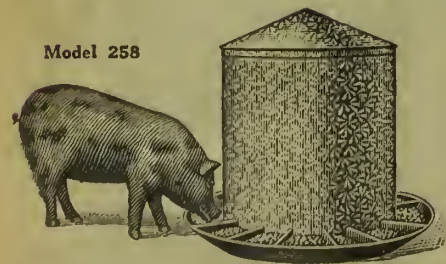
For use under heads of water up to 20 feet. Water tight.



Model 161

Irrigation Gate

Made with or without bulkhead.



Model 258

Calco Self-Feeder for Hogs

Plenty of feed. Automatically controlled. Sanitary. No waste.



Model 244

Calco Hog Trough

Sanitary—Strong—Durable



Model 269

Calco Hog Fountain

Constant supply of fresh water. No overflow.



Model 100

Automatic Drainage Gate

Water tight—Sensitive—reliable. Automatically operated.



Model 251

Self Watering Tank for Hogs

Used where water must be carried. Portable—strong—durable.

CALIFORNIA CORRUGATED CULVERT CO.

LOS ANGELES
419 Leroy StreetBERKELEY
408 Parker Street

45@48; staggy, 27@30. Old roosters (colored), 22@25, market firm. Leghorn hens, 3 lbs. and over, 28@30. Large colored ducks, 35@40, market firm. Young Pekin ducks, 28@30; old ducks, 20; young geese, 28@30, market easy. Live turkeys, young spring, 50@60 lb., market firm; old 43@50. Live Belgian hare, 18@22; dressed, 25@30. Squabs, large, 55@60 lb., market firm. Pigeons, 3.50@3.75 dozen, market firm.

POTATOES AND ONIONS

Potatoes, per cental: Delta, 2.25@2.50; choice, fancy, 2.50@3.00; sweets, 3@10 per lb. for No. 1.
Onions: New reds, 50@60; yellows, 1.75@2.00 cr.; green onions, 1.25@1.50. Garlic, new, 10@12½.

VEGETABLES

Wholesale selling price:
Artichokes: Doz., 25@1.00.
Beans: Lb., string, 3@5; Lima, 5@7.
Cucumbers: Bay, 50@1.25.
Cabbage: 1.00@1.25 per cwt.
Celery: Doz., 1.25.
Corn: 1.50@2.00.
Eggplant: Livingston, lug, 75@1.25.
Lettuce: Doz., 30@35.
Okra: bx. 1.00@1.25.
Peppers: Bells, bx., 1.00@1.25.
Peas: Lb., green, 5@10.
Rhubarb: Lug, 1.75.
Spinach: Ib., 4@7.
Squash, Summer: Sacramento, lug, 50@65.
Tomatoes: 75@1.10 lug.

FRESH FRUITS

Apples: Gravensteins, 2.50@2.75 for 4-tier; 2.25@2.50 for 4½-tier; 2.75@3.00 for 3½-tier; Crabapples, 50@1.00 per small box; Alexander, 1.50@2.00; White Winter Pearmain, 2.25@2.50.
Bananas: Lb., 8¢@9½¢.
Berries: Strawberries, large, 75@1.00, small, 50@65. Raspberries, 75@1.00 per per drawer. Blackberries, 35@40 per drawer.
Cantaloupes and Melons: Cantaloupes—Ponies, 75@90; standard, 90@1.25; flats, 50@75 per box; Honey Dew, dozen, 1.50; casabas, dozen, 1.50. Watermelon, Imp., 1.
Figs: 50@75 for Black one layer, two layer, 1.25@1.70.
Grapes: Malaga, 2.00@2.50 crate; Seedless, 1.75@2.00; Muscats, 1.75@2.25; black, 1.75@2.25.
Nectarines: Red, cr., 1.25@1.50.
Peaches: Per small box, 1.25@1.75; baskets, 75@1.00; Los Angeles lugs, 1.25@1.75; large lugs, 1.50@2.00; No. 3, 1.00 a lug; Strawberry Freestone, 1.75¢.
Pears: No. 1, 3.00@4.00; No. 2, wrapped, 2.00@2.50; Winter Nellis, 1.00@1.50 lug.
Pineapples: Doz., 4.50@5.00.
Plums: Blue, baskets, 1.75@2.00; Red, 2.00@2.25; Green, 1.50@1.75.

CITRUS

Box: Lemons, standards, 2.00@4.25; seedless, 4.00@4.50.

DRIED FRUIT

Peaches—1920.
California Peach Growers, Inc., prices:
Standard 15½¢ 15½¢
Fancy 17½¢ 18½¢
Extra Fancy 18½¢ 19½¢
Slabs 15½¢
For "Practically Peeled," add 2½¢ per lb. (any grade).
Above prices are bulk basis.
F. o. b. California common shipping points.
Shipment: September, October, November—Seller's Option.
The above prices are guaranteed against our own decline until January 1, 1921.
Apricots—1920.
California Prune and Apricot Growers, Inc., prices:
"Growers" "Sunsweet"
Choice @22½ @24
Extra choice @24½ @26
Fancy @26½ @28
Extra fancy @..... @30
Fancy, Moorpark @..... @30
Extra fancy, Moorpark @..... @33
Standards @18
Slabs @20
Figs—1920.
Roeding Fig & Olive Co. prices to growers: White Adriatic 7 cents net. Mission figs at a basis of 6 cents.
Schedule announced White Adriatic, bulk in 50 pound boxes: Standards, 9; choice, 11; fancy, 13; extra fancy, 15. Black Mission figs in 50-pound boxes: Standards, 7; choice, 10; fancy, 12; extra fancy, 14.
Prunes—1920.
California Prune and Apricot Growers, Inc., prices:
Sunsweet Quality—20-30's, 25¢ per lb. flat; 30-40's, 17¢ bulk basis; 40-50's, 15½¢; 50-60's, 13¢; 60-70's, 11½¢; 70-80's, 10½¢; 80-90's, 9½¢; 90-100's, 9½¢.
Growers quality one-half cent less per pound than Sunsweet on sizes 30-40's to 90-100's inclusive.
Raisins: California Associated Raisin Co. 1920 base price 15 cents.

HONEY

Rafael & Wing, in Western Honey Bee: Honey is moving very slowly. There is a large quantity of Australian, New Zealand and Hawaiian honey on the market offered as low as 12 cents. Prices offered to producers: White orange, 20@21; orange, 18@19; water white sage, 20@21; sage, 18@19; light amber, 15@16; amber, 14@15; comb honey No. 1, 6.25; No. 2, 5.75; wax, 40@42.

BEANS

Small white, 6½¢ lb.; pinks, 7½¢ lb.; lunas, 12½¢ lb.; cranberry beans, 7½¢ lb.; Mexican Garvanzas, 8¢ lb.; lentils, 12½¢ lb.; popcorn, 8½¢ lb.; green peas, 4½¢ lb.; split peas, 7¢ lb.; large white, 6½¢ lb.; blackeyes, 9½¢ lb.; speckled bayos, 8¢ lb.; Mexican reds, 8½¢ lb.; Cal. Garvanzas, 7¢ lb.

GRAIN

Wheat: 3.75@3.90.
Oats: Red feed, new crop, 2.50@2.70.
Barley: New feed, 2.30@2.60; shipping, 2.50@2.60.

HAY

Alfalfa Growers of California under date of August 25:
There were 1,670 tons received in San

Francisco the week ending August 21. We are selling hay for approximately as follows:
No. 1 Dairy Alfalfa.....29.00
Standard Dairy26.00
Stock Hay24.00
A. W. Scott quotes:

	Per Ton
Wheat Hay, fancy	26.00@28.00
Wheat Hay (light 5-wire bales)	23.00@25.00
Tame Oat Hay	23.00@25.00
Wild Oat Hay	17.00@19.00
Barley Hay	17.00@20.00
Alfalfa Hay, first cutting	17.00@23.00
Alfalfa Hay, second cutting	21.00@25.00

Citrus Markets

Los Angeles, September 1, 1920.

Auction markets are showing some remarkably satisfactory sales while other markets are holding firm on oranges. Grapefruit is not commanding satisfactory prices.

Lemons, little doing excepting amongst the importers.

Shipments

Shipments to date from Southern California since Nov. 1, 1919: Oranges, 27,835 cars; lemons, 7,388; total, 35,223. To same date last season: Oranges, 30,892; lemons, 8,785; total, 39,677. From Central California to date this season: Oranges, 5,375; lemons, 288; total, 5,663. To same date last season: Oranges, 3,714; lemons, 251; total, 3,965. Northern California this season: Oranges, 261; lemons, 23; total, 284. To same date last season: Oranges, 244; lemons, 2; total, 246.

AT THE AUCTIONS

August 25
New York: 9 or., 1 grapefruit, 2 lem. Val. 5.20-10.65, grapefruit, 1.85-2.55, lem. 1.65-3.65.
Boston: 1 or., 2 lem. Val. 7.90, lem.

40-1.85.
Philadelphia: 2 or., 1 mixed. Val. 4.75-8.70, grapefruit halves 2.60-3.55.
Pittsburg: 1 or., 1 lem. Val. 6.15-7.45, lem. 2.95-3.45.
St. Louis: 2 or., 1 lem. Val. 3.70-5.45, lem. 2.60-2.95.

August 26

New York: 7 or., 1 grapefruit, 2 lem. Val. 4.00-10.30, grapefruit 2.60-4.35, halves 2.50, lem. 2.34-3.55.
Boston: 5 or., 3 lem. Val. 6.65-10.25, lem. 2.15-4.05.
Philadelphia: 2 or., 1 lem. Val. 5.60-7.65, lem. 3.15.
Cleveland: 1 or., 1 lem. Val. 5.70-7.25, lem. 2.45.
St. Louis: 1 or., 1 lem. Val. 4.90-5.65, lem. 2.85-3.25.

August 31

New York: 10 or., and grapefruit, 2 lem. Val. 6.70-10.50, grapefruit 75-1.90, lem. 2.10-3.10.
Boston: 2 or., 1 grapefruit, 2 lem. Val. 4.95-7.15, grapefruit 2.20-4.30, lem. 1.55-3.60.

President Stow of the Golita Lima Bean Growers Association estimates the Lima bean crop in Santa Barbara County at about 50 per cent of normal. Horticultural Commissioner Kellogg thinks it will not be over 35.

Canned fruit freight rate, formerly 90½ cents per hundred pounds, since August 26 is \$1.20½. This means an increase of about \$80 per car.

"The Legend of the Tules" is an especially striking pageant to be staged at the Tulare County Livestock and Agricultural Show.

A NEW APHIS DESTROYER

A Cultivator subscriber at Escondido, J. G. French, sends a suggestion regarding aphis control which certainly indicates a simple, cheap and possibly effective process. Anyway, it is worth trying. We will be glad to hear from subscribers who test it out. Give it a thorough trial. Mr. French writes:

"The following is from an English paper, Home Chat, published in London, which I have always found reliable. It is certainly a simple remedy for aphis and nicer to handle than nicotine sulphate, etc. I have not had occasion to try it myself":

"I recently heard that a seed firm offered a prize of ten shillings for the best gardening hint, and one ounce of ground alum dissolved in a gallon of water as a remedy for green fly was the recipe that not only won the prize but the contributor was sent 30 shillings instead of ten, the hint proved so valuable."

Condition of Lima beans is estimated at 51 per cent of normal by reporters of the California development board.

San Bernardino County is making carload shipments of grapes. Shippers are anxiously watching the car situation.



Fifteen Years of Tractor Progress

Fifteen years ago the Harvester Company set its resources and its unrivaled farm engineering and field knowledge to work at solving the farm-power problem. For fifteen years it has been placing practical tractors on the farms of the world.

One result of this long period of development and accomplishment is the International 8-16 Kerosene Tractor which has all the refinements and perfections of these progressive years of endeavor. In the factors of durability, economy, reserve power, comfort, ease of control and general satisfaction this tractor is recognized as the standard by which others are judged.

The International 8-16 Kerosene Tractor is particularly popular here in

California because of its adaptability to orchard service as well as general farm operation. Its compactness, light weight and flexibility of control make it easy to handle among trees and the fact that all moving parts are enclosed or amply shielded prevents injury to low-hanging branches. Its three speeds—1¾, 2½, and 4 miles an hour—meet the requirements for cultivation, pulling a power sprayer, road work and general farm service. A most advantageously located pulley provides power for all forms of belt work.

Another factor: prompt after-sale service is always available through International dealers everywhere and the Harvester Branch Houses at Los Angeles and San Francisco. This means much to the tractor owner.

May we send you literature descriptive of the INTERNATIONAL 8-16 KEROSENE TRACTOR?

INTERNATIONAL HARVESTER COMPANY

CHICAGO OF AMERICA (INCORPORATED) U.S.A.

Branch Houses:

Los Angeles, San Francisco and Other Cities in the United States

A Gopher Trap That Never Fails

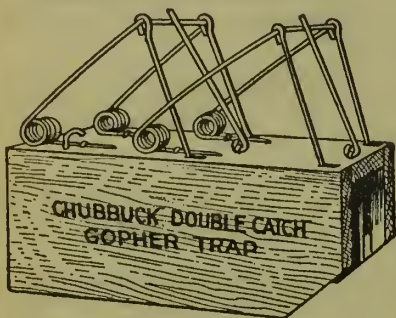
Now we know that when we advertise the Chubbuck Double Catch Gopher Trap as one that never fails we are making a strong claim.

But Read What the Farmers Say

I have used the Double Catch Trap with success. It never fails to catch and hold the animals.—Wm. Brown, Santa Ana, Calif.

I have tried all kinds of traps but never found one that did the work equal to this trap, as it NEVER fails.—Elbert Olney, San Francisco, Calif.

EASILY AND QUICKLY SET



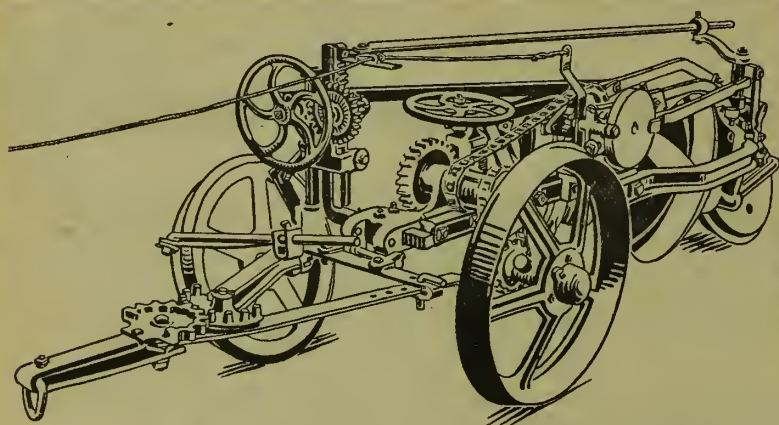
The Chubbuck Trap has been O. K. for us. We got 17 gophers in three weeks. Five gophers in three hours from one hole was the best we made.—W. Hartley, Ferndale, California.

The moment I saw the Double Catch Gopher Trap I knew the problem of getting the gopher was solved, for as many times as I have set the trap that many times have I caught a gopher.—Edward Reynolds, Lathrop, California.

Every Set a Gopher Less Catches Large or Small Rodents I secured one of your new Double Catch Traps and in seven days I caught 21 gophers. I got the 21 gophers in the week without missing a single shot. I then bought two more traps and was not very long ridding my forty acres of the pest.—John H. Thomson, Lathrop, California.

Call on your dealer or send direct to us. Price \$1.00 post paid. Money returned, if not satisfied. Spring steel wire is hard to find. We are trying to keep ahead of the demand. Order now.

E. J. Chubbuck Company, Dept. A.
731 Market St. San Francisco, Cal.



The New "KNAPP" Tractor Disc Plow

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ARIZONA FLOWER GARDEN

(Continued from page 299)

borders. They blossom early in the spring from seed planted early in the fall.

Nasturtiums are a particular favorite of flower lovers in Southern Arizona. They grow readily and should be grown even more than they are, although somewhat tender. If protected from the north they will grow and blossom during the latter part of the winter; unless protected they may be killed by heavy frost. Both tall and dwarf varieties are grown here considerably.

Pansies are one of the old fashioned flowers that never really grow old. There are many varieties and they may be planted in beds where they are to bloom or, following a somewhat popular plan, they may be first planted in paper drinking cups where germination may be aided by control methods such as shading, water, etc. Then they may be readily transplanted, cup and all.

Hollyhocks are another old fashioned flower not grown as much as they should be. If planted in the fall they will bloom the following year.

Zinnias are old fashioned, but an

otherwise unattractive spot may be made beautiful by sowing a few packages of mixed zinnias. They will be cut down by frost but if sown early in September will make some very attractive blossoms before the heavy frost that kills them.

September is the month for planting the Christmas flowering sweet pea. This is one of the best flowers known and very popular. These Christmas flowering varieties are almost equal to the Spencers. There are a number of varieties, of which the Early Blanche Ferry, Mrs. Alex Wallace, Mrs. C. H. Totty, Mrs. F. J. Dolanskey, La Marquise and Christmas White are the best known.

Iris are readily grown in Southern Arizona. They grow with little attention and are worthy of more extensive cultivation. They may be planted in the fall from August to October, and after once planted may be left undisturbed. The Spanish and English varieties do best in sandy soil with good exposure. These usually flower in May and June. The Syria and Palestine varieties blossom in February. Probably the most popular varieties for the Southwest are the Spanish Iris, English Iris, Iris filifolia and Iris reticulata.

This Month in the Vegetable Garden

Southern California

By D. F. Reichard

SEPTEMBER is a heavy planting month in Southern California. It is during August and September that the acres and acres of vegetables are planted for winter shipments to Eastern markets.

The drying days of the past two months have taken most of the moisture out of the ground so that it will be necessary to thoroughly soak it before planting. A good method is to turn on a large sprinkler and let the water run for about one hour at each setting, or if it is long rows you are working with, run furrows close together and let the water run slowly through these. In a couple of days ground wet in either manner will be ready to work. Pulverize it to a depth of ten or 12 inches and level the plot off, then make broad shallow furrows far enough apart to leave a ridge wide enough to sow seeds in single or double rows as the individual planter prefers. A couple of days before plant-

ing let the water run slowly through the furrows. This will put the moisture near the surface at the ridges where the seed are to be planted. Sow the seed and in a few days irrigate again, after which as soon as the ground is dry enough cultivate lightly so as to not disturb the freshly sown seeds.

The plantings this month run more to the hardy vegetables. It is too late to put in squashes, cucumbers and melons, and only in warm sections can corn and beans be planted in the early part of the month.

Sow seed of Crosby's and Early Egyptian beets, Swiss chard, endive, Goliath kohlrabi, New York and Cos lettuce, Bermuda onions for setting out later, parsley, parsnips, prickly seeded spinach, Oxheart carrots and early turnips. Start seed beds of cabbage, cauliflower and kale for setting Laxtonian peas for December use.

Better start cleaning up stuff that is past in preparation for manuring and getting the ground in shape for next season's garden.

Northern California

By A. R. Gould

ACTIVE preparations for winter cropping should be the chief aim this month. Clear off all old plots, trench under the refuse, using lime in the soil, and be fairly liberal with manure. Dig deeply when trenching and remove any diseased portion of the crop such as potatoes or tomatoes which would carry fungus spores over to another season's crop. Continue to store root crops for the winter, digging potatoes when the tops have become yellow. Many useful crops may be grown throughout the winter and a well cropped garden will beat the high cost of living.

Lettuce

We advised sowing Los Angeles and May King varieties last month. These will now be ready for thinning out and quite a number of plants may be used for transplanting. However, this should be done either early in the morning or late in the evening, never during the heat of the day, and it is always a wise plan to first irrigate the trench. Successional sowings of lettuce may be made. White Paris Cos or Romain are excellent.

Carrots

Thin out those sown last month to five or six inches apart in the rows. A sowing of Danver's half long may still be made on a rightly prepared soil. Apply soot and wood ashes to the plots, raking well in.

Leeks

These will require liberal applications of liquid manure to produce large well developed stems, and burlap or thick paper should be wrapped around to blanch them. This is a very hardy crop and should certainly be more largely grown.

Celery

This crop will now be nearing maturity and will require blanching to make the stems white and crisp. The same method as advised above for leeks may be used, and being a heavy feeder it will be necessary to water with liquid manure two or three times a week. Sometimes this crop is attacked by mite or red spider, when it should be sprayed with liquid sulphur.

Parsnips

Another sowing of this valuable root crop may be made as it is very hardy and grows better in cooler weather. Sow the variety Hollow Crown in rows two feet apart in soil well prepared with manure. Parsnips have great food value and should be in every garden.

Tomatoes

Remove some of the heavy foliage if the fruits are slow at ripening. Some fruits just turning color may be ripened off the plant by placing in a well lighted room. Remove any

diseased fruits from the plot and bury with quick lime.

Kale

Plants of these may still be put out, spaced a distance of two feet apart in well manured soil. This makes a fine hardy winter crop. Poultrymen should plant extensively.

Beans

Collect dry shell beans as they become ripe and store for winter. Sow the winter bean Broad Windsor in rows two to three feet apart. Cultivate deeply before sowing.

Brussels Sprouts

These may still be planted out, 18 to 20 inches apart in rows two feet apart. Irrigate the rows well before planting.

Cabbage

Sow Savoy and Autumn King for winter use on the seed bed.

Beets

Sow Improved Blood Turnip on well prepared soil. Sow in rows 18 inches apart. Matured roots of this crop may also be dug and stored for late fall use.

Onions

The main crop such as Australian Brown Prizetaker, etc., should be ready to harvest this month. Tie them together by the tops and hang up in a dry shed for winter.

Parsley

Thin out to six inches apart the variety Moss Curled sown last month. A sowing may still be made for winter use.

Swiss Chard

Those who require a cut-and-grow-again vegetable should try this as it is an excellent long standing beet which is grown for the tops used for cooking as spinach. Sow Giant Lucullus in rows 18 inches apart.

Strawberries

Many young plants, or runners, may be removed from the parent plant this month and planted in the new plot, which should have been well prepared with manure.

Raspberries

At the end of this month the canes may be dug up and divided for replanting the new plot of the earlier fruiting varieties, but St. Regis must not be disturbed until late in the year as it is a late fruiting continuous cropper. Raspberries are a very profitable crop to grow and are now being extensively cultivated. New plots should be deeply dug and well manured whilst existing plots should be renovated and well rotted manure applied.

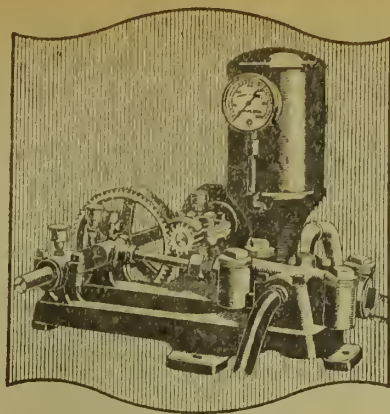
Southern Arizona

By M. E. Bemis

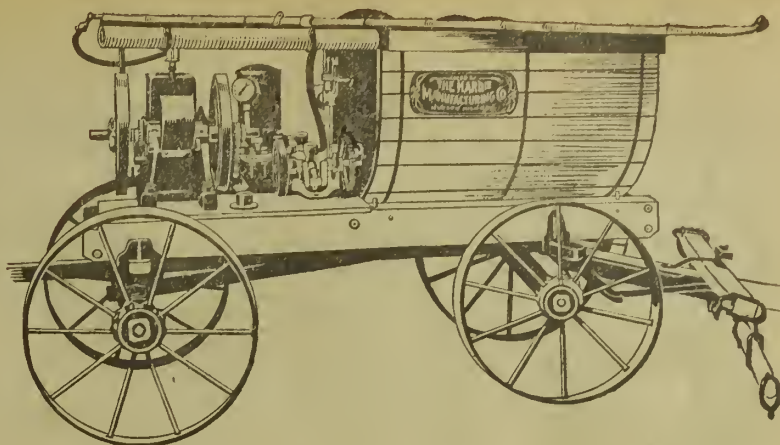
ALL garden work really begins in September. The things which may be planted in September are beans, beets, cabbage, cauliflower, kohlbart, kale, lettuce, onion seed, onion sets, peas, radishes, spinach and turnips.

Fortunate is the gardener who has made his preparations for the fall garden throughout the summer. For best results the land should have had a good coating of stable manure and been plowed under. Seed bearing weeds should have been kept down. Assuming that all this has been done, the fall gardener has little to do excepting to plow the land again and work it up with harrows, disk, drag and whatever may be necessary to put land into first class shape, and first class shape for a garden means that it must be approaching the "ash heap" condition.

Beans may be planted in the vicinity of the Salt River Valley up to September 15, in Yuma Valley a little later, and this would also apply to the Imperial Valley of California. Varieties best adapted have been mentioned before but a repetition may do no harm: In pole beans these are the Kentucky Wonder, Kentucky Wonder Wax, Broad Windsor and White Seeded Kentucky Wonder; bush varieties, Stringless Green Pod, Black Wax and



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In the gardens that are to be hand cultivated beans may be planted two feet apart, farther apart if horses are to be used for cultivation, and they should be covered one to two inches deep. One pound seed is supposed to plant a row 80 feet long. Beans planted under favorable conditions and cultivated and irrigated as they should be will mature in six to eight weeks. This ordinarily will give ample time for beans planted up to September 15.

Beets, if hand cultivated, may be planted as close together as 12 inches, but for field culture or where a horse is to be used, 18 to 24 inches apart. These may be planted any time and should do well. Frequent cultivation is the secret of good beet culture, inducing rapid growth, which prevents the woody condition so common to beets which have little attention. Nine to ten weeks should be sufficient to mature beets for the table. Varieties best adapted are the Eclipse, Crosby's Egyptian, Extra Early Egyptian, Early Blood Turnip, Detroit Dark Red and Long Blood. Swiss chard is a variety of beet which produces top rather than root. In fact, it is grown for the top and very largely fed to poultry. Several poultry men have found this to be the ideal winter green feed and its use should be encouraged. As it is a variety of beet it should be cultivated in the same manner as beets and the sooner a few rows are started the quicker it will be ready for the chickens and will perhaps be a help in producing winter eggs so much desired.

It is a little late to start cabbage from seed, and the fall gardener would do better to buy his cabbage plants. September 1 is a little early to set these out and the September work in cabbage culture should be in getting the land where they are to grow in the right sort of condition to put them out early in October.

Kale and kohlrabi should be planted also.

September lettuce is one of the common garden or truck crops which have been grown with conspicuous success in the Salt River Valley of Arizona. The most important thing in lettuce growing is to have the ground fertile. In fact, it is very nearly useless to plant lettuce unless the ground has been made rich and mellow. Early in September is probably the best time to plant. Three-quarters of a pound of seed is required to plant one acre. Probably the most successful method is planting in double rows on each side of a ridge, 24 to 30 inches apart. Some growers prefer to have the rows run east and west and in planting earlier there are some who prefer to plant only on one side of the ridge and this the north side. This gives a little protection from the sun. Seed should be planted quite shallow in moist soil, although many find it advisable to irrigate until germination is complete, and if a stand is not secured, replant. Lettuce growers experience more trouble with grasshoppers and cotton caterpillars than anything else. Poison bran mash is the best protection from damage from grasshoppers, and arsenate of lead in a spray for protection against the cotton caterpillar. A better method is to dig a trench or shallow ditch with perpendicular sides on the side from which the caterpillars seem to come. This will serve as a trap and they may be killed by dragging a block over them through the trench or in some similar manner. Bran mash is made as follows: 20 pounds bran, 1 pound Paris green, ½ gallon molasses and 3 to 5 lemons chopped in a food chopper. This mixture should be scattered broadcast over the ground under the lettuce as early in the morning as possible, so that the hoppers when they begin feeding at daylight get the poison before it dries up.

The New York Market has proven the best lettuce for this section. Arizona Wonderful is similar to New York Market and considered somewhat superior by those who have given it a trial.

Onions, like lettuce, require a heavily fertilized soil. October 1 is about early enough for planting in a field where they are to grow. Those who prefer to transplant may plant in beds September 10 to 25. It is claimed that one man can transplant an acre

in four days. Onion seed are difficult to germinate in hot weather, hence if planted in beds in hot weather they must be shaded and it is not much use to plant them until the nights are cool.

The early variety of garden peas should be planted in September, the later varieties next month. One pound of peas should plant 80 feet of row. American Wonder, Early Alaska and Gradus are among the favorite early varieties.

Radishes, like beets, may be planted any time from now on. An ounce of seed will plant 100 feet of row. They grow rapidly and several varieties mature quickly. The Early Scarlet Globe, Early Scarlet Turnip and Early Long Scarlet are good varieties in this section. The Long White Icicle also has its friends.

Spinach is another easily grown vegetable and one that seems to be readily adaptable to Southwestern irrigation conditions. This may be sown in succession every two weeks if one desires. One ounce of seed will be sufficient for 100 feet of drill. The Prickly Seeded Winter has proven the most popular.

Turnips are a standby that should be more generally grown and should have a place in the small garden. An ounce of seed is sufficient for 75 feet of row. The Purple Top Strap Leaf is one of the most popular. Snowball is good. Purple Yellow Rutabaga is also good.

As easily grown as vegetables are in the winter season in Southern Arizona, it is rather strange that more farmers do not avail themselves of the opportunity which they have of supplying the table with fresh vegetables throughout the winter and spring months. It is not altogether a question of money saved or money made; it is more the satisfaction of having fresh grown vegetables without the inconvenience of getting those which are shipped in. Health conditions, too, are improved by a heavier vegetable diet.

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Road Over Private Land

Two parties are joint owners of a ranch property. One of them leased a ranch to a party who now claims to have right of way across the ranch. Other parties seem also to desire such right of way. The owners are willing that they have the right to travel over the ranch but wish to avoid the possibility of this right at any time becoming vested. What shall they do?—Subscriber, San Bernardino.

A person who is a tenant does not as such tenant ever acquire any adverse right, title or interest in or to the property during the period of his tenancy, no matter how long it may be. The mere placing of a sign "Private Road" is not necessarily sufficient to avoid the possibility of a vesting of a right of way. The best method, and that usually followed, is to fence the land or place a gate across the right of way and bar the entrance thereto at least once a year. This is sufficient to publicly show that no right of way is granted.

Will and Deed

A husband dies, leaving a will in favor of his wife, stating that she is to take care of the minor children. He also made a deed of the property in her favor, which has not yet been recorded, and he authorized her to draw money from the bank. Will it be necessary to have the will probated or could the deed alone be recorded?—Subscriber, Woodlake.

For practical purposes it may be that the recording of the deed would be sufficient, as the wife and children are undoubtedly the only heirs and the only parties concerned. The rights of the children are cut off by the will mentioning them and giving all of the property to the wife.

Goat Not Paid For

In January I sold a goat. The purchaser paid \$5 and was to get it the latter part of January and pay the remainder. The purchaser has not paid up. Would she still have a claim on the goat, or would I have a right to sell it to someone else?—Subscriber, Woodlake.

If a buyer of personal property does not pay for it according to the contract and it remains in the possession of the seller after payment is due, the seller may rescind the sale or may enforce his lien for the price. If the buyer does not give notice as to time, place and manner of delivery within a reasonable time his right thereto is waived. In the instance stated your method would be to enforce your lien upon the property for the balance of the price, and in that respect you should give actual notice to the purchaser that the goat will be sold for the balance of the payment due at a certain stated time.

Water Right

I have depended for 30 years on the water of a creek flowing through my property for watering stock and have used the waters of this creek for irrigating purposes since 1897. This season my neighbors above, whose property corners on the stream, have built a dam sufficiently large to divert all of the water of the stream and the creek bed has been dry since the 22nd of July. Have they any right to do this and would I have ground for a damage suit against them?—Subscriber, Ballard.

It would seem from your statement of facts that you have acquired an unquestionable prescriptive right to so much of the water of this creek as you have placed to beneficial use for the watering of stock and irrigation, and that this right arises by actual appropriation as well as under your riparian rights in the stream and would therefore be superior to the rights of those holding lands above you on the stream to the extent to which you have placed the water to



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Cultivator helps your town, the advertiser and the Cultivator.

beneficial use. This being the case, you would undoubtedly have a right to enjoin the maintenance of the dam and recover such damages as have been caused to your crops and stock by reason of being deprived of the water. Under your statement of the facts, I can see no shadow of right which these parties may have to erect this dam, especially in view of the fact that under the act establishing the water commission it is expressly provided that all waters flowing in any channel, except those which have been applied to useful and beneficial purposes, are public waters of the state of California, subject to appropriation in accordance with the provisions of the act. These provisions require that the party desiring to appropriate such water shall make application to the water commission for a permit stating the facts in reference to the details of his proposition, diversion and purposes to which the water will be placed. Such permits are effective to the time for which water is placed to a beneficial use. It would probably be the quickest and least expensive action to make application to the water commission to ascertain the rights to the water in this stream. Upon the filing of this petition by you the water commission will thereupon ascertain the rights, take testimony and make a thorough investigation. After this investigation the water commission makes findings of facts, which

may be filed in the superior court and upon which action may be maintained therein. This, of course, is irrespective of your rights to bring an action for the damages if, upon careful investigation of the facts concerning any appropriations of the water by your entrance, such may be found advisable.

Excessive Fee

I broke my wrist and a physician to whom I went for treatment refused to give such treatment unless I sign an agreement releasing him from any responsibility for injury, stating that this was necessary in the absence of an X-ray picture of the wrist. The agreement was signed and I offered to pay for the services, but the physician suggested that that be delayed until the wrist got well. I never returned for further treatment until the wrist was completely well. The physician then charged me \$50, which I paid. Is it lawful for a physician to collect such a fee after demanding such a release?—Subscriber, Del Mar.

At the present time a skilled and careful physician in case of fractures in the joints, particularly such as the wrist, where there are a number of small bones, very prudently would require an X-ray to be made or otherwise he will be entirely in the dark in making treatment. He was within his rights in requesting the signing of the agreement stated. The matter of his bill is dependent upon so many factors, such as the skill of the physician, the character of the injury and other things, that it is difficult to say that it is exorbitant. In any event, if you desired to contest the bill you should have refused to pay it.

Broken Agreement

Under a will various parcels of real property are left to four children. Some of the property is incumbered. Another piece has a homestead on it. The father surviving agrees with the children with respect to a partition, and under the agreement the children make their deed to the father, who then refuses to carry out his part of the agreement. All of the agreements were made in the presence of an attorney and notary public. Is there action for fraud?—Subscriber, White Road.

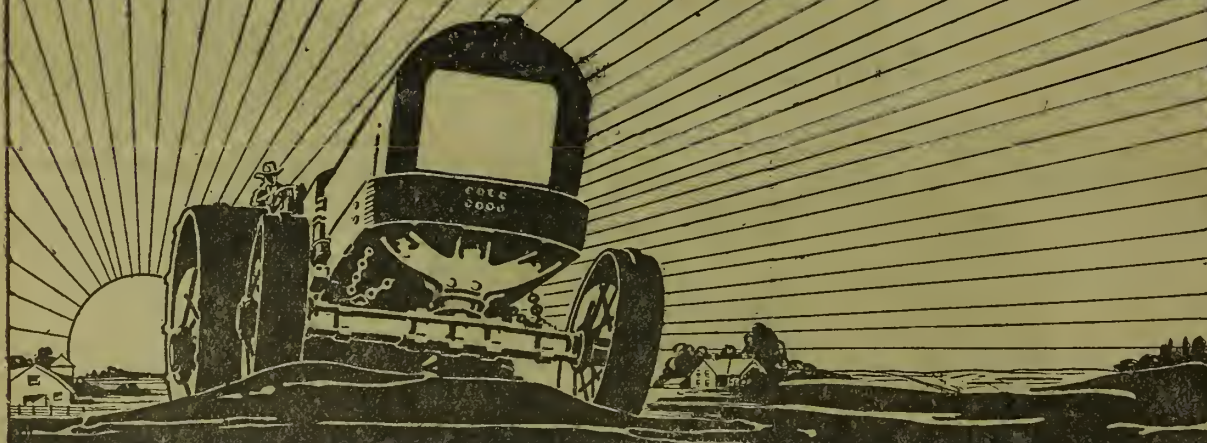
You would undoubtedly have an action for the rescission of the conveyance to the father on his failure to carry out the terms of the agreement, but as to the particulars of such action you should consult a local attorney and lay all of the facts in detail before him.

License for Butchering

Is there any law prohibiting a man from purchasing beef, butchering and selling it to his neighbors outside of the city limits? Would it be necessary to have such meat inspected when it is not inspected at the meat market?—Subscriber, Escondido.

The state law requires every person slaughtering cattle as a business to do so in a designated slaughter house and first procure from the cattle protection board a license to carry on such business, and he shall execute a bond to the state of California in the sum of \$1,000. Such licensee must pay in advance an annual fee regulated by the number of cattle slaughtered per month, thus: slaughtering ten head per month pay \$1 per annum; from ten to 50 head per month, \$10 per annum. He also is required to make regular reports to the board concerning the cattle slaughtered, the owners and marks and brands thereof. However, the act provides that nothing therein shall be construed to prohibit an owner of ranch land or one located on a definite property as tenant or purchaser under contract from slaughtering cattle in small numbers on said premises for his own consumption, nor shall such rancher be construed as prohibited from selling or giving away a portion thereof, and it shall not be necessary for him to take out the license. Unless there is some city or county ordinance with respect to the inspection of meats, it will be unnecessary for such person to have such meats inspected, although under other acts he may do so if he so desires.

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Displays of the latest, most improved tractors, trucks, implements and power farming machinery of all kinds. Many interesting and valuable accessories. Entertaining features for visitors.

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EVERYBODY'S LONESOME

Way down deep within their hearts
Everybody's lonesome.
Far within their secret parts
Everybody's lonesome.
Makes no difference how they smile,
How they live or what their style;
Once in every little while
Everybody's lonesome.

People first in big affairs—
Even they are lonesome;
Maybe like to put on airs,
Just the same they're lonesome.
Men for whom existence blends
Every good; who gain all ends,
Still reach out their hand for friends;
Everybody's lonesome.

Women, silk-clad, jeweled fine,
Yes, they too are lonesome;
When their gems the brightest shine
They are just as lonesome;
Some must serve and some command,
All still seek with groping hand
Love and friends who understand;
Everybody's lonesome.

Though your gift of friendship small,

Everybody's lonesome.
It may answer someone's call,
Someone who is lonesome;
Give, and give with might and main,
Give your hands, and join the chain,
And your gift will be your gain.
Sometime, when you're lonesome.
—Exchange.

THE LAST RESORT

By Rowland Thomas in Youth's Companion

STANDING on the concrete walk that rings the Waldron swimming pool, Bob Moray gazed down into the water. This open air, salt water pool, 50 feet wide, a hundred feet long, four feet deep at one end and eight feet at the other, is the chief attraction of Waldron's Mammoth Bathing Pavilions at Kingsbury Beach on the Jersey coast.

Not a hundred steps east of Waldron's there is another outdoor salt water swimming pool, which is 3,000 miles wide and 10,000 miles long—the Atlantic Ocean.

When you stand on Waldron's walk, just where Bob stood that Friday morning in August, and find yourself looking up and down ten or 12 miles of fair, smooth sand fringed with half a dozen ribbons of white breakers, this swimming pool seems like another case of carrying coals to Newcastle. All summer long thousands of bathers brighten the beach with gay flecks of color, and there is room for countless thousands more. At first sight Mr. Waldron's attempt to compete with the Atlantic Ocean seems hopeless.

Nevertheless, there are many people who find all their aquatic pleasure in the pool and who never even wet their feet in the ocean. The reason is simple. The surf at Kingsbury Beach looks soft and creamy from a distance, but it has a boisterous scend to it and a famous undertow. For weak and timid bathers and for novices the pool, with its quiet, warmish water and its immaculate lining of white tile, is far more pleasant.

The porcelain lining of the pool is the pride of big Mr. Waldron's heart. To keep it shining he goes to no little trouble and expense. Twice each week he has his pool emptied, scrubbed and filled again.

It holds 225,000 gallons—an impressive amount of water—but the process of emptying and filling it is fairly rapid, for the pump that fills the pool discharges 500 gallons every minute, and the big iron pipe that drains it into the sea, 200 feet away below low water mark, is 15 inches in diameter. For scrubbing there are six men armed with wire brooms and swabs of coir. Yet with all that it is an all day job—12 hours—to clean the pool and fill it up again.

This Friday was to be such a Gargantuan scrubbing day. The valve in the drainpipe had been open for some time, and the level of the water had already subsided a foot.

It was Bob's second season as one of the attendants at the pool. He was 18 years old, not very large, but strong and lithe, deep through the chest and brown as the traditional berry. All summer long salt water was drying on his skin through the sunlit hours, and his clothing was a bathing suit. Except that the chest of the jersey bore no magic letters, that suit was a replica of those worn by the life guards who stroll the beach in muscular majesty. It might have given an observant person a clue to Bob's ambition. He scrubbed Waldron's pool, fetched buckets of fresh water for sandy footed occupants of dressing rooms, wrung out soggy bathing suits, not because he liked it, but because he knew that it was a first step along the road of his ambition.

Bob wished to be a life guard. He was a natural swimmer, and incessant practice had perfected him in the art. He had speed, strength, endurance, fearlessness. He knew that he should make a good life guard. In his mind's eye he could already see himself the hero of marvelous feats of rescue. All he needed was a chance.

But that was the hardest of all things to get. The life guard service at Kingsbury is a close corporation. Its membership is made up of young college men—athletes of note—who manage in that way to earn money

At Apple Picking Time The Auto-Wheel Coaster

It's no trick at all to haul four or five bushels of apples in the Auto-Wheel Coaster

Pile them on and see how easy it is to carry them to the storehouse. The job will be finished before you know it. The roller bearings make the handling easy. Even if you load 1,000 pounds on the Auto-Wheel it rides smooth.

Every minute saved in the field gives you that much more time for play. And you'll find the Auto-Wheel just right for play. You can coast, have races and do odd jobs. You can earn all the spending money you need.

Then, you can enter some of our prize contests. We hold them regularly—and offer prizes that all fellows are anxious to win. Send for our magazine "The Auto-Wheel Spokesman." We'll send it to you for six months FREE. Just send us the names of three coaster dealers in your town, telling which handle the coaster wagons with the name "Auto-Wheel" on sides.

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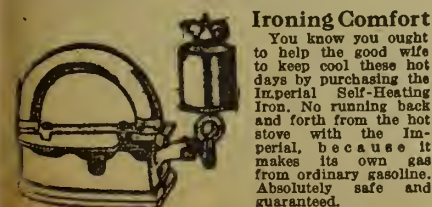
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THE COLE TOY & TRADING CO.,
324 So. Hill St. Los Angeles



Ask for Ghirardelli's Ground Chocolate at the store where you do your trading. Never sold in bulk but in cans only. In this way Ghirardelli's retains its flavor and strength—the two most important elements of good chocolate.

IT'S simple enough—the chocolate-sweetness of Ghirardelli's makes additional sugar unnecessary. You lose nothing of its deliciousness, its flavor, its strength, when you "pass up" the sugar. For Ghirardelli's "stands on its own feet" as a complete food beverage—sufficient unto itself!

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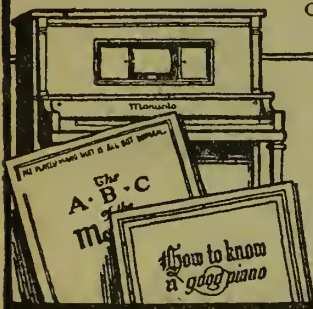
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during their long vacations. When undergraduate days are over they bequeath their places to others of their kind. In the chain of succession, for two summers, no links had broken or been missing, and Bob had had to bide his time and hope for better days.

He was thinking of all that as he stood on the walk at the deep end of the pool. He was alone and in a way on guard, although the watch he kept was perfunctory. Everyone at Kingsbury Park knew that Waldron's pool was closed on Tuesdays and Fridays. To make assurance doubly sure, on those days ropes were stretched across the two runways that led up from the beach, and on each rope was hung a sign that proclaimed in large black letters, "No passing. Danger! Pool being cleaned." But wishing to take every possible precaution, Mr. Waldron always had one attendant on duty as a watchman until the pool was empty. He had a wholesome respect for the forces that he put in play when he opened the valve in that 15 inch pipe and set 225,000 gallons of water free to find its level.

He knew that he was releasing a dead weight of two million pounds from all immediate control. He knew that the water rushed through the drain at the rate of 1,800 feet a minute—faster than a man can run. He knew that there was a tremendous suction at the mouth of the pipe in the deep end of the pool. A swimmer caught in such a current would be in sorry plight. Although Mr. Waldron was not imaginative, he could picture it in terms of tragedies and damage suits. So he hung up his signs and put his man on guard.

Even Bob Moray guessed something of it as he watched the water. The morning was windless and the pool was very still. At first sight only a few ripples seemed to mar the perfect mirror. But as he looked closer, it became apparent that the whole body of water was alive with silent but relentless motion. Thousands of hair lines

veined its surface and its depths. All of those lines radiated from a common center—a point directly above the black mouth of the drainpipe. No whirlpool had formed yet—only those crawling, creeping veins showed the tremendous force that was at work. The very placidity of the water fascinated you—and made you shudder.

As Bob stood looking down into the water, a sudden stir across the pool—a light patter of steps and a gay "Good morning!"—roused him. He glanced up with a start. On the opposite rim of the pool stood a scarlet sprite of a girl. Bob knew her. It was madcap Margery Deane, 16 years old, pet of the more permanent residents at the park. She was poised for a dive.

Instantly Bob shouted, "Keep back! The suction will catch you if you go in there now!"

She laughed carelessly. "You can pull me out of it!" she cried, and the next moment, to Bob's horror, she was in the water.

Her dive was clean and long. She rose, shook the water dog fashion from her eyes, and struck out.

Her first few strokes were easy and quite ineffective. Surprise replaced the laughter on her face, and the surprise quickly changed to worry. "I can't seem to swim!" she said, looking up at Bob. "Something's dragging at me."

Bob knew only too well what it was that was dragging at her. He did not hesitate. Glancing up the length of the walk, he saw that it was empty. The scrubbers, with their swabs and brushes, would not come until the pool was empty. He shouted lustily in the hope of attracting help, and as he shouted he plunged. Almost at once he rose beside the girl.

Fortunately, Margery was a good swimmer. She kept her head and listened comprehendingly to Bob's commands.

"Hands on my hips!" he ordered. "Breathe when you can, and roll with me. The trudge's the only thing that can dig us out of this."

With the girl trailing half submerged at arm's length from his hips, Bob began the fight. The trudge, for a master of it, is probably the most powerful of all strokes. Bob swam it well always—but never before as he did then. Into the roll, the tremendous heaving catch of arms and shoulders, the incisive scissors kick, went every ounce of energy in his body.

But from the first stroke he was helpless. Plunge ahead as he would the suction pulled him back. As for help's coming from outside, he realized that even if any of the workers had heard his cry they would arrive too late to aid him. Faster than they could run, that current was sweeping him and Margery back and down.

For an instant a hideous picture flashed before his mind. He could already feel himself and the girl dragged under—could feel the agony as they were pinned across the mouth of the pipe—wrenched, mangled, twisted until slowly their bodies were sucked in.

Sucked in! With that, Bob's brain cleared for action. So far he had been fighting only with his muscles.

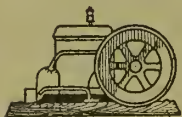
Once, the summer before, as Bob had stood on the walk waiting for the pool to drain, a problem had presented itself to him and he had whiled away half an hour in trying to solve it. Suppose, the problem ran, you are in the pool now. The suction gets you, and the water has fallen so far that there are no handholds for you on the gutters, even if you could swim to them. And there is no one round to help you. How would you save yourself?

Bob had turned that problem over in his mind for almost 30 minutes before he could see any solution. And that solution had been preposterous—so mock heroic that it had made him grin, so absurd that in another half hour he had forgotten it along with the problem. So far as he knew, he had not thought of it since.

But now, all at once, it flashed back upon him. It was the same problem, complicated by the fact that now there were two persons in the pool. The solution no longer seemed preposterous. It seemed hideous. Instead of making Bob grin it sent a shiver of dread through him. But—it was a solution. Was there another?

His strength was going. He glanced up once more. No help was in sight. The water seemed to be dragging at him even harder than before. The

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After a season's hard work most gas engines need new piston rings. They wear out just like any other moving part.

Worn or imperfect piston rings not only waste fuel by allowing it to leak past them—but waste power, which is more important. The gas that leaks past poor piston rings can never be power.

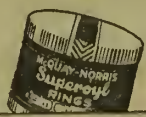
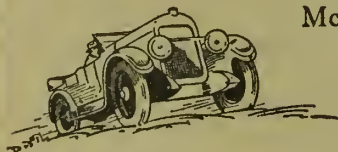
Examine your piston rings now. If you need new ones—buy McQuay-Norris LEAK-PROOF Piston Rings—which have increased gas engine power, saved fuel and oil and decreased carbon for ten years.

Your dealer has these genuine, time-tested rings or can get you proper sizes promptly from his jobber's complete stock. Made in every size and over-size for every make and model of gas engine.

Write for this Booklet

which explains why worn or imperfectly designed piston rings waste power and money. Address Dept. AB

McQuay-Norris Mfg. Co., St. Louis, U. S. A.



A special ring for top piston grooves of engines that pump oil. In lower grooves always use McQuay-Norris LEAK-PROOF Piston Rings for complete compression—power.



boy's jaw set with grim resolution. "Margery!" he gasped. "You've got to do just what I say! It's our only chance. When I sink under you and grab your ankles, let yourself go limp. Stay limp and put your arms straight up over your head. Whatever you do, don't struggle."

He looked down through the water. Below and a little behind him gaped the dark mouth of the drainpipe. Fear

be fine. So many recipes call for a large quantity. I had so many failures until I used this that I thought perhaps it might help someone else.

Put little cucumbers in weak brine over night. In morning drain and then pour scalding hot water over them and drain again.

To one quart can use 1½ pints of vinegar (not too strong), ½ cup or more sugar, 1 rounding tablespoon

Markets on Pages 302-303

and desperation filled him. What he was asking his body to do was almost more than flesh could submit to. That pipe was only fifteen inches across and it stretched away for 200 feet. But what other chance was there?

With an inarticulate prayer, Bob let his feet drop. He shot down instantly. As he swept by Margery's body he seized her ankles in a vise like grip. Then darkness closed about them both—darkness and roaring and the insistent tugging of a frightful force.

Seven seconds after Bob's feet were sucked into the drainpipe of Waldron's pool he and Margery were floating in the surf; several exceedingly startled bathers were collecting their scattered wits sufficiently to go to their aid. Bob could see very watery daylight, and swam feebly. The girl had fainted.

It was an experience that neither of them is likely to forget—Bob for several reasons. One of them is this: when next summer comes the magic letters that proclaim him a life guard are to adorn his jersey. The people of Kingsbury Park, residents and visitors, seem to regard him as a very dependable young man. Bob himself says modestly that he merely did the only thing there was to do.

HINTS FROM HOUSEKEEPERS

Sweet Corn Salad

15 ears sweet corn, 1 head cabbage cut fine, 4 green peppers, 1½ cups sugar, 1 tablespoon salt, 2 tablespoons mustard seed, 2 quarts vinegar. Cook corn and cabbage separate, then mix well, heat and seal in jars.—La Verne.

To Dry Sweet Corn

Have a kettle of boiling water and put corn (on the cob) in the water and let remain three minutes, take out and dip in cold water. Then cut corn off the cob and spread in the sun to dry.

Dill Pickles

Put cucumbers in brine made of 4 quarts water and 1 quart salt. Let stand 24 hours, weight to keep in brine. Remove from brine. Put in crock one layer of dill on bottom, then layer of pickles. When half full another layer of dill and then pickles and layer of dill on top. Cover with a brine made of 1 quart vinegar, 1 quart salt and 4 quarts water. Boil together five minutes; let cool and pour over pickles. Cover with grape leaves or beet tops.—Housekeeper, La Verne.

Baking Pie Crust

To prevent pie crust from shrinking away from the edges of the pie tin when browning before custard or fresh fruit is put into it, the dough should be placed over the top of an inverted pie tin. Perforate the dough six or eight times with a fork before placing in oven to prevent the forming of blisters. When crust is brown enough carefully remove it from the tin, place inside and fill.—F. K., Los Angeles.

Panama Cream Filling

Another recipe for Panama Cream filling is as follows: 1 cup pulverized sugar, butter size of a large walnut (or more if desired). Mix together until creamy. Add water (or milk if preferred), a few drops at a time, until thin enough to spread easily over cookies. Add ½ teaspoon vanilla extract. If mocha flavor is desired two teaspoons cocoa may be creamed with the sugar and butter and hot coffee used in place of the water or milk.—F. K.

Crisp Cucumber Pickles

This is a recipe for small cucumber pickles that I use, and they prove to

mustard, 1 tablespoon mixed spices. Heat, add pickles and when scalding hot can and seal. The mustard keeps them crisp. You can mix your spices if you wish.

The pickles never fail to be good, made with this recipe.—Mrs. J. F. C.

TIME TO PASS THE APPLES

"It was while eating apples," said Mr. Hilbert, former M. P. in Canada, "that Eve discovered that she needed clothing. As far as I can see it is nearly time to pass the apples again."

CUSHMAN

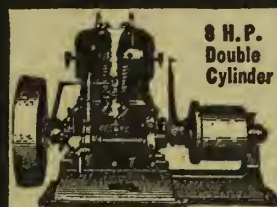
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This is due to designing and building our own bodies. We can afford to put in extras because we do not have to pay profits to outside builders. You get that money.

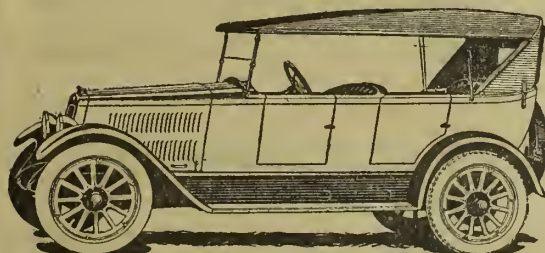
Make a thorough examination

Generous proportioning is evident throughout all New Mitchells, in the chassis as well as in the body. Ask a Mitchell dealer to point them out. You can never know the real worth of this car until you examine it and contrast it with other cars of the same price or more.

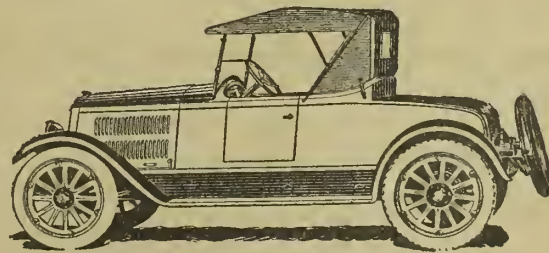
Where can you find a car offering so much at these prices: *six* passenger Touring Car, \$1750; *six* passenger Sedan, \$2,900; *four* passenger Coupe, \$2,800; *three* passenger Roadster, \$1750. F. o. b. Racine, Wis.

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\$1750



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Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

September 11, 1920

No. 11

Revised Dosage Schedule for Use of Liquid Hydrocyanic Acid Gas



ARE scale pests becoming resistant to fumigation gas? Formerly the citrus grower fumigated his orchard every two or three years; today he finds it necessary to fumigate each year and in addition is finding lower "kill" than formerly. This "resistance" seems to be more

for large trees remained almost the same as in the original schedule prepared for use with gas generated by the pot or machine method. The past season's experience with liquid hydrocyanic acid of uniformly high purity has shown that the tendency of gas generated by the atomizing process to

(DISTANCE AROUND IN FEET)

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(DISTANCE OVER IN FEET)

manifest with black scale and today the grower is asserting that the worst pest in California is the black scale.

In his investigations Professor Woglum has found a slightly heavier dosage necessary for the larger trees. Hence this new schedule where liquid hydrocyanic acid of 95-98 per cent purity is used. Professor Woglum says:

"A tentative dosage schedule for liquid hydrocyanic acid in orchard fumigation was prepared by the United States department of agriculture in 1918 and has since experienced two seasons use. In this schedule the dosages

remain most concentrated toward the bottom of the trees necessitates a material increase in the dosages for large trees over those given in the former schedule.

"To meet this need a revised schedule for liquid hydrocyanic acid 95 to 98 per cent pure has been prepared and is presented herewith. It has been developed in cooperation with Mr. Rounds and Professor Quayle and made to conform with the experience of the expert fumigators of Southern California. Its universal adoption during the present season is strongly recommended."

Firestone

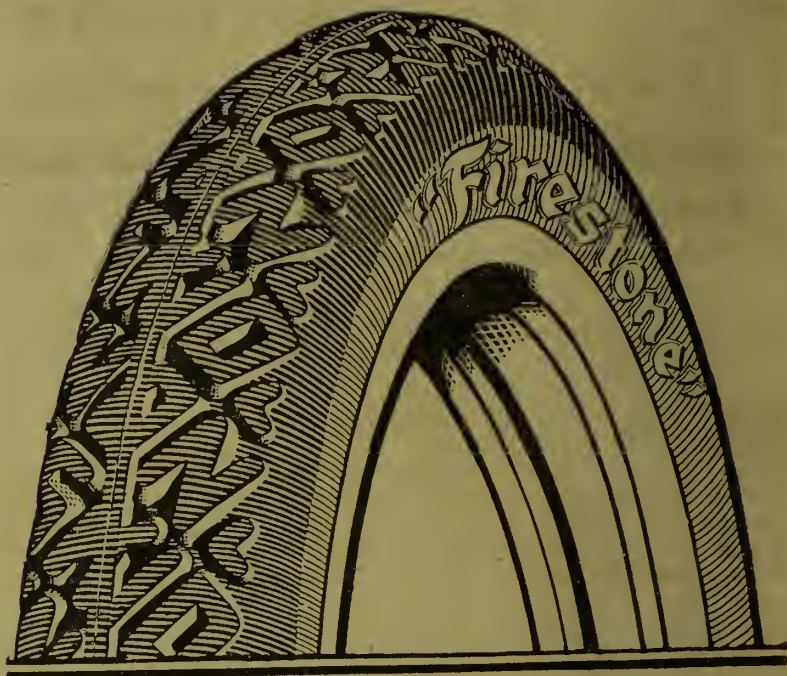
EXTRAVAGANCE has gone by the board. Thrift is in the air. Men are buying where the value is.

The Firestone thrifty 3½ is leading the small-tire field today. Because it is built on real thrift methods from start to finish.

Firestone experts on the spot in the raw material markets of the world are able to get first choice of quality at quantity purchase prices.

Firestone men have worked out the way to produce this tire by concentrated methods—no waste material, no waste motion, no waste space.

And Firestone volume output, through thousands of dealers, permits selling at a close margin. The user gets the benefit. Try this Firestone thrifty 3½.

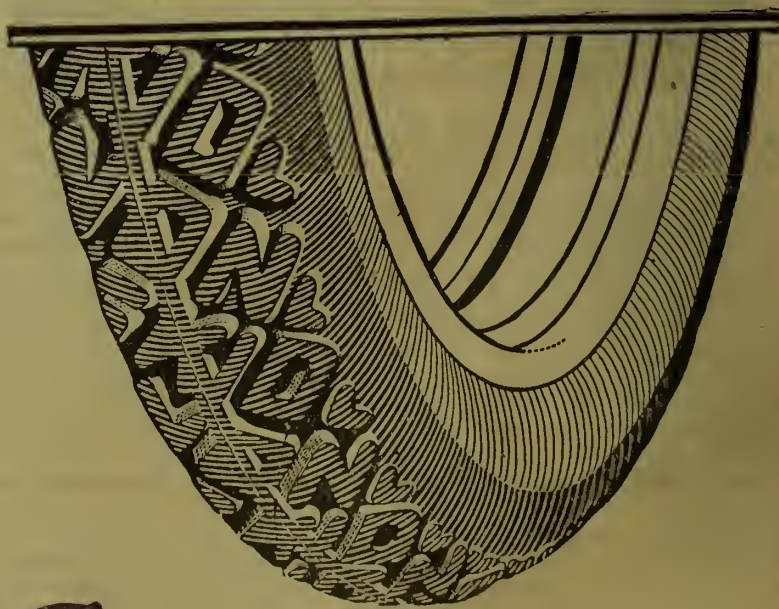


30x3½

(non skid)

\$22.50

Gray Tube \$3⁷⁵
Red Tube \$4⁵⁰



Most Miles per Dollar

California Cultivator

Vol. LV, No. 11

Los Angeles, September 11, 1920

One Dollar Yearly



THIS is one great fair. I mean the sixty-first California State Fair, in full swing this minute—this whole week—in the "Heart of California."

The livestock men say "The equal in pure breeds was never brought together on the Coast." Royce, Hughes, the Bennetts are on the job for the California Cultivator and will tell about it next week.

Farm power, tractors, trucks, implements, farm appliances make up a wonderful exhibit. "Wonderful" is somewhat of a bromide and thrown in

As Usual--The Best Ever

By C. B. Messenger

at all times in describing everything, from corn remedies to Yosemite. However, it still applies in its true sense to this exhibit. Not in the same degree as when applied to Yosemite's wonders, but when one walks some 500 feet down one of the aisles of the monster tent and then turns and looks back he wonders at the work of the

inventor, at the promise of mechanics, of gas, of electricity to help feed a hungry world.

One old fellow—New Englander, I think—reached the other end as I did. He turned and gazed over his specs and ejaculated, "Well, by gosh!" I don't know what "by gosh" means, but it is effective.

It's also a washing machine fair. There are washing machines here which will take hold of soiled duds and suds and pat and punch and pummel and twist and untwist and souse and wring and iron—all electrically—while Bridget is at the movies and Mother rocks the baby and Daddy's gone a-huntin'. If any doubt as to these details, ask the agent.

The university, the experiment station, land settlement, the farm bureau—all here. In the farm bureau tent are a couple of home made evaporators.

(Continued on Page 339.)

Orange Orchards at Porterville

By Ernest Braunton



THE Porterville section of Tulare County has some good slogans. The secretary of the chamber of commerce, H. L. Morrison, brags about "A valley city with a mountain air;" the orchardists' claim is, "The home of the early orange." The truth of both slogans is apparent to the observant visitor, and if he lingers a few days or more he may be impressed with a third, "The Valley of Content."

This section is noted for its variety of subtropical fruits, but the writer was on the trail of oranges so rode

destroyed no injury from mice has been experienced. The Robinson grove was in prime condition and is being treated under the direction of Dr. Bonquet, county pathologist. The heavy pruning, so disastrous to many orchards, has not been practiced, and the trees are apparently in as good condition as any in the Porterville section. The 18 year old Marshall orchard was tramped through from end to end. This orchard has received six copious irrigations each

plenty of nitrogen is present at any depth but unavailable because of the nearly air tight plow sole preventing nitrification below.

Dr. Bonquet believes in very deep dry plowing in the fall to allow entrance of air and water and this practice will also keep sticky soils open and warm, so the trees will function early in spring. Do not plow deep in spring or you shock the tree just when it wishes to grow and needs all its vigor. If plowing is done in fall the tree has ample time to recover before it should function in spring. The irrigations given are also too in-

150 pounds of sulphuric acid to the acre mingle with the water and use the same amount in a second irrigation. This treatment would keep the soil open so it would not again become sticky for at least two years. It would also liberate all carbonates, converting them to sulphates, and work many lesser benefits.

The writer has seen no orange growing section where orchard practices vary so widely as here. As examples illustrating this and showing the necessity of varying methods of treatment two young orchards may be cited. The trees from both came from the same nurseryman and of the same stock. Both started out well but the trees grew much unlike under



Overhead Irrigation on Robert Baird's Winterhaven Ranch

Mr. Baird has many acres of the ranch covered with perforated pipe. The installation on about 50 acres cost \$10,000.

out to the Baird orchard where a portion is under the overhead Skinner system of watering, one of two thus equipped, the other being the Overholtzer grove near Covina, Los Angeles County. The writer had visited this orchard eleven years before and was impressed with the steady, stable growth made during the intervening years. The soil is very black, heavy, and rich. The Wilson grove, owned by a Los Angeles man, was being sprayed for red spider, more as a preventive measure, though some "spider" was present. It is evident that more attention should be paid to the general control of this pest for the most infested tree the writer saw was a large walnut in one corner of an orange orchard and it had not been treated for spider.

One orchardist was much troubled with mice, due, evidently, to dry mulch about the trees and over the orchard generally. Where the mulches have been turned under and grass and weeds along the orchard boundaries

year but on account of the heaviness of the soil the owner does not believe the water penetrates deeply enough and is now experimenting with deep furrows down the middle of the spaces and will trench a few trees with shovels to learn if benefit is to be derived from deep stirring.

Soil Practices

On the 18th of August the writer attended a soil lecture and demonstration by Dr. Bonquet, pathologist for Tulare County, in the orchard of Robert Baird, but two miles from Porterville. Here the soil is black, heavy and inclined to be "sticky" when moist. From frequent disking and tramping there is a firm plowsole five or six inches below the surface and about the same number of inches thick. Below that the soil is softer and more yielding. The moisture content is uniform throughout. From the rank growth of weeds it is evident that the soil is rich in plant food in the few surface inches at least and heavy in nitrogen. It is believed

frequent and soil gets too dry at times. Now is the time when the trees are doing the main work for next year's crop.

Dr. Bonquet would subsoil 14 inches deep in one furrow midway between the trees and run a big single shovel through to clean out the ditch. He would then plow two furrows on each side to fill this ditch and irrigate through the last furrows. This would fill a large and deep mass of soil with water, following aeration. At the sandbox or some equally good place for incorporation he would let

similar treatment. According to accepted standards and illustrations in recent bulletins one orchard was quite ideal. In the other nearly all trees were of poor types. This could not have been true as both lots were of same stock. The soils were radically different and it is a puzzling question as to what treatment should be given when results of similar care cause such a variance in growth and condition. The writer did not see the groves in question but the facts here recorded were related by a Porterville orchardist.



Discussing Humus and Soil Treatment

This photo was taken early in July with the Cultivator camera and shows one method of soil treatment followed by Robert Baird of Winterhaven Ranch, Porterville. Mr. Baird is the taller man in white shirt. At his right stands Dr. Bonquet; next him, C. Frank Rossire. Mr. Rossire Jr. is also listening in. Mr. Baird has consistently followed in this particular plot the practice of encouraging growth of natural weeds and grasses during the winter. This ground is disked lightly but there is no attempt to plow under the heavy growth.

Agricultural News Notes of the Pacific Coast

Northern California

Pear picking is in full swing in Lake County.

Paradise Valley pears are selling at \$110 per ton.

Price of sugar in several sections has dropped to \$17.

Colusa's rice mill now has a capacity of 5,000 sacks daily.

The 1920 pack of asparagus is reported at 1,024,813 cases.

Colusa County fair will be held at Arbuckle, September 16-19.

A warehouse at Woodland recently burned with loss of 400 tons of hay.

Orland maintains that it is the poultry center of the Sacramento Valley.

Glenn County fair will be held at Orland, September 27 to October 2.

Sonoma County held a successful fair at Santa Rosa the last week in August.

The hot weather of the last month has been just what the rice fields needed.

The state board of health is prosecuting its campaign for stamping out malaria.

Some 300 acres of pickling cucumbers are grown in the Corning section of Tehama County.

The California Bean Growers Association held its annual meeting at San Francisco August 26.

President Walker of the State Farm Bureau Federation makes address at Humboldt County fair.

Rice men are planning early stoppage of rice irrigation so as to aid irrigation on the lower river.

Chicken culling demonstrations have been held by the Butte County farm bureau on many farms in the county.

The Durham colony in Butte County held community fair August 28 and 29. Stock exhibits were made the feature.

Airplanes are being built near Gridley in Butte County for a proposed San Francisco-Portland passenger service.

The Glenn County farm bureau lumber mill has already produced 600,000 feet of lumber for the use of bureau members.

The Glenn County Duroc-Jersey Swine Breeders Association will build an advertising booth and rest room at the Orland fair grounds.

Many plans are being made for a comprehensive means of irrigation which will care for the needs of the upper Sacramento Valley.

Livestock auctions are to be held by the Farm Bureau Marketing Association in Willows, Orland, and Red Bluff the first week in September.

The Native Sons held an anti-Japanese meeting at San Francisco September 2 at which representatives were present from many state bodies.

Towns in Contra Costa County have been put on water rations because of shortage of irrigation water. Martinez especially has been reduced by at least 100,000 gallons daily.

The first shipment of 1920 almonds from the Chico district was on August 20 and was shipped through the Almond Growers Exchange. The crop will be but little more than 60 per cent of normal.

Central California

Turlock is still shipping Thompson Seedless.

Fresno County's assessment valuation is \$153,232,484.

Some figs have been injured by the recent untimely rains.

Northern Kern County is harvesting \$75,000 worth of cotton.

Western Fresno County reports Emperor grapes showing mildew.

Kern County Cotton Festival scheduled at Bakersfield, October 16.

Prof. J. E. Coit is investigating as to split figs, the cause and remedy.

Dr. Bonquet of Tulare County is planning lecture tour in the South.

San Jose's retail milk price is now 9 and 15 cents for pints and quarts.

Lodi, San Joaquin County, bricklayers are demanding \$16 per eight hour day.

Merced County has shipped out as high as 18 carloads of packed peaches a day.

Apple growers in the hills back of Visalia have been selling apples at \$90 per ton.

San Joaquin Valley cotton growers are discussing cooperative ginning and marketing.

Modesto fig growers made a tour of fig orchards and packing houses of Fresno recently.

The Miller & Lux Company has increased its capitalization from \$12,000,000 to \$15,000,000.

California Peach Growers, Inc., started shipments on the present season's crop August 24.

San Jose Grange is appealing to its members to take interest in primaries and all political movements.

Merced County poison barley squirrel campaign resulted in the use of nearly 25 tons of poisoned barley.

Monterey canners have agreed to pay women a minimum of 40 cents per hour and laborers four cents per case.

Mountain sections of Stanislaus, Tuolumne and Calaveras Counties are appealing for help in fighting forest fires.

The Citrus Association packing house at Lindsay has been remodeled and equipped so that it will be able to ship out fruit much more rapidly.

Santa Cruz and Monterey Counties have been discussing matter of growing beans and have concluded that they cannot compete with the Oriental grower.

Chowchilla dairymen recently met and discussed San Joaquin Valley Milk Producers Association. They are in favor of merging the dairy business of the San Joaquin Valley.

Kern County farm center meetings: Delano, September 13; Old River, 14; Wasco, 15; Rio Bravo, 16; Edison-Fairfax, 17; Mountain View, 20; Pond, 22; Inyo-Kern, 23; Rosedale, 24.

California farm bureau sold last year in excess of \$3,000,000 worth of products through its marketing bureau and perhaps another \$10,000,000 through other pools and associations.

The Hanford fat hog auction was attended one day last week by representatives of the farm bureaus of the Middle West, who represented many states from California as far east as Ohio.

Southern California

Escondido schools open September 13.

San Diego County fair is offering \$5,000 in cash premiums.

Early dates are coming into the market from Coachella Valley.

Brawley is appealing for the holding of an Imperial Valley fair.

Anaheim will exhibit at Orange County fair at Huntington Beach.

Cotton picking is the main business on hand in the Palo Verde Valley.

Thermal's cotton gin recently installed will be ready for the new crop.

Fire recently destroyed gin at Calexico and cotton to the value of \$20,000.

Garden Grove will make exhibit at Orange County fair at Huntington Beach.

Blythe will have next year a new cantaloupe packing house built by a Japanese firm.

Imperial Valley is appealing for relief from the manipulation of cotton prices by gamblers.

Escondido is sending out carload shipments of grapes; also making heavy shipments of hay.

An effort is being made to secure 10,000 Mexicans to cross the line and aid in the cotton harvest.

Fallbrook, San Diego County, has sorghum mill which is now reducing sap of the sweet sorghum.

Imperial Valley Vegetable and Melon Growers are pushing the formation of their marketing association.

Orange County sugar beet workers are striking for higher wages. This is preventing rapid harvesting.

One Los Angeles County grower of Turkish tobacco estimates that he will produce about 800 pounds to the acre.

Imperial and Coachella Valleys were recently visited by a thunder shower which did slight damage to hay and grain.

There is a general movement throughout the state to reduce the damage done by overloaded trucks to highways.

Yermo in the Victor Valley has been trying out cotton and finds it produces exceptionally well of high quality fiber.

Orange County harbor commission is now working with the \$500,000 fund in deepening the Santa Ana River channel and building jetties.

Horticultural commissioners of various counties of the south are in trouble because of inspectors resigning to accept more lucrative jobs.

Perris Valley's cotton planting experiment has proved only moderately successful, this largely because of inexperience of the growers. The work will be continued another year.

The appeal made by citrus growers to the interstate commerce commission for reduction in freight and refrigeration rates was denied as to freight rate but granted as to refrigeration charges.

The Claremont Citrus Association in annual meeting elected W. O. Fritz, president; C. D. Baker vice president; R. K. Pitzer, L. E. Sheets, and F. R. Willey, directors; Fred C. Jacobs, secretary and manager. Its total business during the past year was \$452,714 paid to growers. It shipped 367 cars.

The Coast and General

Wyoming reports ranges good to excellent and livestock fine.

Montana reports frost in the last week of August which nipped tender vegetation.

Navajo Indians may be brought down from the northern reservation in Arizona to pick cotton this season.

According to the report of the weather bureau at Phoenix, the number of hours of sunshine during the month of August was 367 out of a possible 414, or almost 90 per cent.

Two hundred cotton growers of the south side of the Salt River Valley, Arizona, at a recent meeting in Mesa, have set the rate for picking cotton for the present season at four cents a pound.

A plan for merging the Mesa Cotton Growers' Association and the Mesa Farm Bureau Federation into one organization has been proposed at a meeting of cotton growers of the Mesa, Arizona, district.

An informal investigation is being made of a project for the development of 15,000 acres of land in the vicinity of Winslow, Arizona. This land is along the Little Colorado, a tributary of the Colorado River.

The proposition has been advanced to move the office of the Southwest League to Phoenix, Arizona. Inasmuch as the largest area of land to be developed from the Colorado River is within the state of Arizona, this might be feasible.

Cotton growers through central Arizona are attempting to regulate the price which will be paid for cotton pickers this season. This is being handled quite largely through the local farm bureaus and the cotton growers association.

Artesian water was unexpectedly discovered in the vicinity of Aguila, Arizona. If further developments show that there is a considerable quantity of water this may be of considerable importance in the development of the county in that vicinity.

A strong effort is being made to interest farmers in the growing of broom corn in Arizona. Good broom corn is bringing \$100 to \$325 a ton, and one-half to one ton per acre is the average yield. A farmer in New Mexico claims to produce three crops in one season on the same land.

Representatives from the Arizona Horticultural Association and others interested in control of cotton pests attended a big meeting of cotton growers in Los Angeles. The matter of most interest to the Arizona cotton growers and the horticultural association is the matter of quarantine provisions looking to keeping out the cotton boll weevil or the pink bollworm.

Secretary F. E. Schneider of the Arizona Cattle Growers Association, considers the outlook for stockraising not as bright as it might be. He says: "The average price paid to producers for meat animals and poultry on June 15, was 18 per cent less than a year ago, 10 per cent less than two years ago and only 39 per cent higher than the ten year average. It is quite evident from these figures, which are verified by the federal government, that we are now in the midst of the lowest meat prices we are likely to have for years to come."

Humus and the Cover Crop

By E. L. Koethen

SOILS of the arid region are of necessity deficient in humus content. Under our methods of irrigation and cultivation this deficiency is increased unless some method is adopted to renew the supply. In the case of orchards which are kept under clean culture throughout the year where new portions of the soil are continually being exposed to air and sun, combustion is aggravated and great losses of humus ensue. This in addition to the fact that there is no new supply from the natural growth of weeds. But why is this of so much importance? Why is so much said about the humus supply?

Without going into the scientific discussion of what humus is, let us assume it to be just decaying or already decayed vegetable and animal matter, what we call organic matter to distinguish it from the mineral matter which otherwise makes up the soil bed. Without this organic matter the soil is dead, inert, lifeless. Its functions are complicated and might be divided into three classes—mechanical, chemical and bacteriological.

Its mechanical effect is to help break up the soil into small particles and make it more friable. A soil that is rich in humus feels velvety, pliable and breaks up nice and mellow. It is capable of holding more water in suspension. It is more spongy. Its flocculence also makes it open to the percolation of air which is very essential in the processes of most plant growth. The air also assists in the chemical action, which is equally essential.

The chemical action in the soil is very complex, much more so than the writer is capable of treating. But

in a few words it may be said that humus in itself contains an acid called humic acid. This is capable of dissolving otherwise inert substances in the soil which are essential to plant growth. Of these the most important are phosphoric acid and potash. We are told that our soils in this region are mostly rich in potash, for instance, and yet it has often been found that applications of available potash salts have increased the productiveness of the orchards even where very large supplies are present in an unavailable condition. Now it is apparent that if by increasing the humus content this potash can be made available it is foolish to apply expensive potash salts where for many other reasons the humus is essential for best results. Lastly, the life which is put into the soil by the addition of organic matter is of prime importance. The soil bacteria which are nature's own method of giving life to the soil can only live and act in a soil where this organic matter is present. It is these organisms that convert unavailable food materials into available ones. The most important of these are the nitrifying germs. Soil rich in humus is a working laboratory of chemical action providing the moisture content is maintained at the best condition.

Here, then, we have the necessity for this large humus content in our soils. But where is it to come from? It is manifest that with the gasoline drawn vehicles and tractors the production of manure is reduced. The demand is far greater than the supply. Hence the prohibitive cost of such material. The cover crop is the natu-

ral solution of the problem. Grow your own organic matter in the orchard. As the legumes produce atmospheric nitrogen, by all means use a legume. Of these for the winter cover crop the Melilotus Indica has proven itself by far the best up to date. It is free from diseases and insect attacks; is an arid plant that stands our climatic conditions exceptionally well, and though it requires lots of water to make a maximum growth, it produces fairly well on smaller amounts. There is quite a call for purple vetch created by the experiment station reports of its value, a demand that cannot as yet be supplied. It still remains to be seen if it will remain immune from the attacks of aphids which crowded the ordinary vetch out of use. For a time the latter was very popular and successful, but after a few crops the lice increased so that they killed the vines out and very unsatisfactory results were obtained. It is found now that at first the ordinary vetch gives good results, but in time the lice multiply so that the entire crop becomes a victim to their ravages. If not the second year, it may be the third or fourth. Will it be the same with the purple vetch?

The use of the winter cover crop has gone far beyond the experimental stage. There is no longer any question of its value and availability under ordinary conditions. It is true there are locations where the water supply is inadequate for its use. The usual objections that are made against it, however, are not valid. Some say it makes too much trouble. We cannot

see how this can be, as it cuts off the work in the orchards during the fall and early winter months. But with the modern tractors and double disks and disk plows there should be no trouble in getting it under. It is true that injury has been sustained to orchards from letting the work go too long in the spring. But it should be remembered that no matter how short the growth it has made when March comes, it should be put under and the orchard cleared for fertilization and cultivation in anticipation of the orchard carrying the greatest load of the season during the blooming and setting fruit season. Some have asserted that it increases the exposure to frost, but this is not borne out by the real facts. If the cover crop is kept wet, as it should be during the cold snaps, it will temper the atmosphere instead of lowering it. It adds vapor to the air and causes white frosts instead of black ones. Black frost is not so apparent to the eye, but it is far more trying to the orange tree.

There is no reason why the picking should interfere with the growth of the cover crop. The melilotus stands an immense amount of tramping without injury.

The use of the summer cover crop has not been as well established and is still in the experimental stage. Which plant is best. Will it interfere with the best growth of trees? Will it draw nourishment from the growth of the trees during the growing season? are all questions still unanswered to the satisfaction of many. It is maintained by some that it cools the surface during the hot days and maintains an even temperature than the bare land, but even this is still experimental.

Petaluma the Poultry Capital

By Arthur L. Dahl

ALL the eggs produced in California do not come from Petaluma, for the Golden State is as healthful for chickens as for children, and the annual crop of "hen fruit" in the state amounts to the tidy sum of \$18,000,000, but there are more chickens to the square yard in the Petaluma district than can be found in any other community in the world. In 1918 this district in Sonoma County produced 450,000,000 eggs, and its shipments to outside markets amounted to 16,045,642 dozen eggs, or enough, if laid end to end, to encircle the earth. Not only is poultry the pet industry of Petaluma, but it is the principal one, and the little White Leghorn can be seen scratching industriously in small groups in city back yards, or in legions on the large chicken ranches that spread out over the series of little hills in the Sonoma Valley. In fact, the meaning of Petaluma is the "City of Little Hills."

There are usually reasons back of the success of an individual or community, for unlike Topsy, they do not "just grow," but are the result of fundamental advantages or elements that make for that success. An analysis of Petaluma's prosperity discloses a number of reasons why egg production is unusually successful there.

To begin with, the climate is ideal for chickens—not too warm in summer and not too cold in winter. Although the district lies in one of the

productive valleys of California, with an abundance of sunshine most of the year, the air is prevented from becoming too warm by the steady ocean breezes that blow from the cold Pacific but 18 miles distant. This ocean air is tempered by its passage over the Coast Range, with its forests of trees and open pasture lands, and when it reaches the valley there is a freshness and vitality to the air that invigorates alike the human and animal species. Compared with other interior valleys, Sonoma County has a very moderate climate. The average temperature is about 75 to 80 degrees in summer and 60 degrees in winter. There are very few frosty mornings and snow and ice are as unknown as they are in the Bay region.

The topography of the Petaluma district and the soil conditions found there are excellent for poultry raising. The gently rolling hills afford excellent drainage for all chicken ranches in winter, and the soil is of a light absorbent gravelly nature, which is cool in summer and does not become gummy during the winter rains. Furthermore, it contains all the mineral elements required by chickens to keep them healthy.

Another element that has been a large factor in the success of the chicken business of this district is its accessibility to the markets of the San

Francisco Bay region. Petaluma lies but 36 miles north of San Francisco, or less than two hours' ride by train. In addition to adequate railroad transportation, the products of Petaluma can also be handled by water, as the city lies at the head of navigation on the Petaluma River.

While there are a number of very large chicken ranches in Sonoma County, the largest having more than 50,000 chickens, the great majority of the ranches range from 1,000 to 4,000 hens. There are some with 10,000 chickens, or thereabouts, but to take care of this number requires considerable outside help, and it has been found that to get the best results the flocks should be only large enough to receive the personal attention of the owner or his family, as the average hired hand does not take sufficient interest in his work to give best results. Poultry raising is an exacting business, requiring almost constant attention to trivial details, but if any of these are neglected the results immediately show in the flock.

Probably in no other line of work connected with the soil can one find so many outsiders who have made a success of their ventures as is found at Petaluma. There are hundreds of men who are today successful egg producers who went from our cities and towns with no farm experience what-

ever and who yet succeeded in spite of many handicaps, because they had the requisite industry, courage and stick-to-it-iveness. There is, of course, a lot to learn about poultry raising, but often the man who starts with no preconceived ideas of how to raise chickens, based upon farm experience where chickens were merely a side issue, and who is willing to learn from his neighbors and from the writings of men who have studied special problems, will win out over the country man who thought he knew it all because he has kept a few hens on a general farm.

The average chicken ranch in Sonoma County embraces about five acres of land and ranges from 1,000 to 3,000 hens. Such a ranch can be handled by a family without outside help and will easily support and return a nice profit to the owner if he manages at all well. The owner's entire time can be devoted to the production end, for he can market all the eggs and chickens he wants to sell at his own door. All of the big egg distributors and storage men of the Bay region maintain branch offices in Petaluma, and these agents buy the eggs on the ranches and look after their shipment to market. Or, if an owner becomes a member of the Poultry Producers Association he can have his eggs and poultry sold on a cooperative basis. This marketing organization, composed solely of producers, handles

(Continued on page 336)

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Forty-third Year

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The Sacramento office is Room 210
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to livestock should be addressed to our
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The San Francisco office is Room 822
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ary 12, 1900, at the post office at Los
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Saturday, Sept. 11, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against
loss through dishonesty of any adver-
tisers in the Cultivator. We do not at-
tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice of
complaint must be sent us within 30 days
from date of the transaction, and the
subscriber must have mentioned the
Cultivator when writing the advertiser.

BE REASONABLE

Raisin growers have, some of
them, felt that a slightly higher price
might have been secured for the com-
ing crop. Possibly this is true, but
officials of the Associated have ob-
served that prices prevailing for the
past few months have lessened the
use of raisins by many of the house-
wives of the country. Producers, or
rather those who are marketing for
producers, have learned some time
since that reasonable prices secure
greater consumption and more rapid
movement of any product.

GROW THE BEST

The Associated Raisin Company
has appealed to its members to give
more attention to delivering raisins
which will pack out "hand sorted lay-
ers." The association says:

"In view of the ever increasing de-
mand for good layer raisins all Mus-
cat growers are urged to make and
deliver as many hand sorted layers
as possible during the coming season.
The company will pay a bonus of one
cent per pound, or \$20 per ton, for
all hand sorted layers delivered,
which pack out 75 per cent or better."

One cent per pound should compen-
sate for much extra care of vineyard
in growing and for much extra care

in handling the grapes. Shortage of
labor is a problem these days, of
course, but where the labor can be
secured the additional profit should be
made.

MARKETS DISCONTINUED

After several years of trial all
the free markets in Los Angeles have
been discontinued. At first more than
a dozen were established in different
parts of the city. They were popular

BENEFIT FOR DISABLED VETERANS OF THE WORLD WAR

The organization known as Disabled Veterans of the World War has been formed to establish a relief fund for sick and destitute members and a separate fund for helping any soldier disabled in the World War, whether member or not; to maintain an employment bureau; and "to insure the future of its members in many ways, to keep them out of the Old Soldiers Home, and to restore them as far as may be possible to their old spirit of independence and self sustinment."

To add to this fund, a remarkable autographed war poster will be auctioned on the night of September 16 at the Alexandria Hotel, Los Angeles, for the benefit of the Disabled War Veterans. This poster bears autographs of General Pershing, Admiral Rodman, Attorney General Palmer, Vice-President Marshall, the Prince of Wales, William J. Bryan and other notables. These have all been collected by Mrs. Gertrude Gifford Hand of Los Angeles, who has been prominent in war activities and in work for the benefit of the returned soldiers. The precious collection of autographs is enclosed in a specially designed container, the cover of which is designed by Charles S. Winslow, a member of the Disabled Veterans of the World War, now studying art under the direction of the Federated Board of Vocational Education.

until the farmers found their principal competitors were husksters who purchased in the wholesale market and instead of delivering from house to house located in stalls in the free market, and while in many cases the truck displayed by farmers was fresher and better stock, the husksters were able to sell their stuff at lower prices, and the lower prices were what attracted the buyers.

WHEAT POOL FAILS

Farmers of the Middle West met last week at Columbus, Ohio, and listened to the report of the committee appointed to formulate a plan for a nation wide wheat pool to be controlled by farmers. After consideration of the plan which the committee presented it was decided that the proposed pool might be in violation of the Sherman anti-trust law. Hence the entire scheme has been rejected, and until the committee, now on the Pacific Coast, reports back to the National Farm Bureau Federation we presume there will be no general movement toward marketing or pooling wheat.

STORE UP FOOD

Next spring's fruit buds and leaf buds, at least of our deciduous trees, will depend upon the food which is being stored today. But many orchardists fail to realize this fact of plant growth and the prunes, the peaches, the apricots, and other trees which have yielded of their fruits are permitted to shift for themselves. After a winter of abundant rains they can sometimes do this, but after such a winter as we had last year the farmer who does not provide best of soil conditions and give irrigation as needed is in danger of being confronted by disaster next spring when the new growth and the blossoms both call for more of plant food than the tree can supply. The Cultivator knows perfectly well that next May and June the mails will be more or less burdened with appeals for help for orchards showing little leaf, die-back or sour sap conditions. Unfortunately we cannot turn backward time in its flight; the damage has been done and is past repair.

Orchard property involves too great an investment to be jeopardized by permitting drouth at this period.

NEW SCHEDULE

The Cultivator gives place on its cover this week to a new dosage schedule for fumigators, which has been worked out by Prof. Woglum, formerly with the department, making fumigation investigations in California for many years. He is now connected with an organization of citrus growers, the California Fruit Growers Exchange. It is possible this more direct contact with the citrus grower may result in

fully, especially in the case of the larger trees. The old schedule or chart was printed in the California Cultivator of August 9, 1919, on page 147. Those who have filed that paper may make direct comparison and note a material difference in that the new chart calls for larger dosage with very large trees. The reason for this is given by Prof. Woglum on the page on which the chart appears.

JAMES WILSON

James Wilson, for 15 years secretary of the department of agriculture, died at his Iowa home, August 26. "Tama Jim," as he was affectionately known, occupied a place in the cabinet of the President of the United States—under McKinley, Roosevelt and Taft—longer than any other individual. As head of the department he secured for it and its activities a position and a success which it had never known. He was born on an Iowa farm August 16, 1835. This was near the present site of the town of Traer. He consistently stayed by farming all his life.

MARIOUT

Prof. G. W. Hendry of the division of agronomy, college of agriculture, reports that returns are being received from many new sections, which chronicle the performance of the new barley, Mariout. It invariably outyields common barley, and the difference is especially noted in cases of extreme drouth. Prof. Hendry reports that it is probable the acreage planted this fall will exceed 200,000.

In developing this seed and presenting it to the farmers of California the university has performed a distinct service.

"THE ONLY 15-25 Tractor Capable of Pulling Three Plows on High Gear Around Here"

"I have just finished the threshing season pulling a 24" separator. I had plenty of reserve power at all times. In plowing the LAUSON seems to be the only 15-30 tractor capable of pulling three plows around here. Practically all the other machines use only two plows or plow on low gear. It is the best kerosene burner I

know of, using the lowest grade kerosene which will hardly ignite with a match and burning it without smoke or odor whatever."

This is a strong testimonial for F. B. Burns of Hornick, Iowa, to write. But it is the kind of service LAUSON Tractors are giving all over the country.

Year after year the LAUSON Tractor has gained favor with the better class of business farmers—men who consider service and satisfaction rather than price. You will usually find LAUSON owners the leading and most prosperous farmers in the locality.

Write for our new catalog which illustrates and describes the construction of the Lauson—the "Pattern" Tractor.

De Laval Dairy Supply Co.
61 Beale St.
San Francisco, Cal.
Distributors for
Ore., Calif., Ariz., and Nev.

The John Lauson Mfg. Co.
34 Monroe St.
New Holstein, Wis.

Hornick, Iowa.
Aug. 16, 1919

The John Lauson Mfg. Company,
New Holstein, Wisconsin.

Gentlemen:—

Have just finished the threshing season pulling a 24" Advance Runley machine with only 15 minutes' stop for tractor, a broken fan belt and a clog in carburetor. Had plenty of reserve power at all times.

In plowing the Lauson seems to be the only 15-25 or 15-30 tractor capable of pulling three plows on high gear around here. Practically all the other machines use only two plows or plow on low gear.

It is also the best kerosene burner I know of, using the lowest grade kerosene that will hardly ignite with a match without any smoke or odor whatever.

Yours truly,
(Signed) F. B. Burns

The LAUSON 15-25
DUST PROOF—ALL GEARS ENCLOSED



Heat Costs Valley Growers Millions

By Cultivator Staff Writer



W HILE it is said that in California all weather is "unusual," this season may truthfully be termed unusual when considering the effect of the hot weather on fruit crops in the San Joaquin Valley. The hot weather damage was particularly severe on grapes.

The fruit grower who is inclined to be somewhat pessimistic about the weather in general has had just cause to complain, and the only consolation he has had is that he will receive a comparatively high price for the fruit he has left. That is, provided early rains do not ruin his high hopes. There are those who claim they can see signs of a repetition of the disastrous season experienced in 1918, but no one can tell. The best advice at present is to leave as little as possible to chance. This same advice might have been given prior to the advent of the extremely hot wave which occurred the latter part of June, or to be exact, on June 20, when the official government thermometer registered 110 degrees.

This hot wave, coming as it did without previous warning or warming up, actually scorched the grapes hanging on the vines. In many places, particularly where there was a reflection from roadways, they had the appearance of being scorched by fire. Conservative estimates place the loss from heat for the one day at ten per cent of the crop.

The lesson to be learned from this "spell" of weather probably went unnoticed by all except those who were traveling about the country examining the condition in various vineyards. Strange as it may seem, the application of irrigation water apparently had little to do with the extent of the damage. Vineyards which had received no water, those in which the irrigation had just been completed, and those which were being irrigated on that day, all seemed to suffer equally. In every case, however, where the loss was particularly heavy it was noted that the vines lacked thrift. This lack of thrift may have been due to exhausted soil, general lack of care, or a dozen other causes, but the lesson is plain. To be safe in the future everything which tends to promote thrift of the plant will tend to lessen the danger of sun scald. Reduced to plain words, it is a lesson of good farming. Every grower of fruit should look well to cultivation, irrigation and above all to proper fertilization of his orchard or vineyard.

The next unusual weather began with the month of August, when the official thermometer hovered around 102 degrees until between the 12th and 16th of the month, when it took a sudden jump and registered between 106 and 110 degrees, dropping down to the more normal 90's on the 20th. The damage during August is much more difficult to estimate, but the loss to grapes alone will probably run between five and ten million dollars.

One wonders what will happen to the fruit industry of the valley if we have many more of the dry years which we have been experiencing. Surely plants cannot withstand the lack of water much longer. With the water all out of the ditches and a large part of the ranches without pumping plants, it is little wonder that the soil should become so dry that the vines actually burned up. The partially matured fruit will, of course, be of some value, but cannot possibly measure up to standard quality.

The whole outlook for the fruit industry in the valley would appear to be rather dismal but for one outstanding fact. This is that there are dozens of vineyards which have come through the season with scarcely any damage from heat, and the owners will harvest excellent crops of fine quality fruit. Investigation will invariably show that these vineyards have had rational care during the past few years. In almost every case pumping plants are ready to supply water when the ditches go dry. They have usually been fertilized either by an application of commercial fertilizers or green cover crops, or both. The cultivation has been good in all cases.

This season seems to have amply demonstrated the teachings of the experiment stations, agricultural experts and the agricultural press of the state, that California could not long continue to produce crops at the expense of the soil without returning something to it.—F. K. H.

SAN FERNANDO VALLEY FAIR AND MARKET

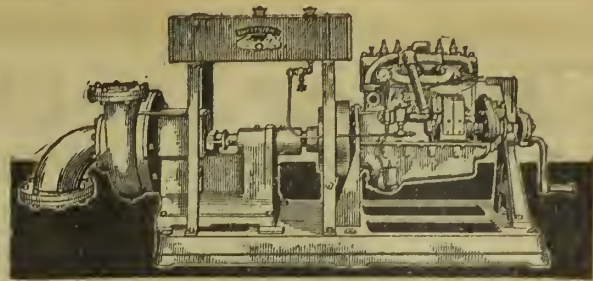
Next week is the week of the San Fernando Valley Fair and Market, September 15-18. A series of interesting aeroplane battles and other features and stunts is scheduled for each day and evening, but for agriculture there will be large tents and booths so arranged as to give an excellent showing of agriculture as it is conducted in the San Fernando Valley. The management asserts that it has "the two largest tents west of the Rockies," each 130 by 240 feet, these formerly having been used at the National Orange Show. Besides the horticultural and agricultural display will also be shown some of the finest horses, cattle, milk goats, hogs and poultry in the state. Listings to date include over 200 pure bred swine besides an extensive line of every kind of livestock.

Those arriving by auto will pass through a panorama of pleasing scenery and note a variety of crops and fruits and fine residences and barns that will ease their minds as to the prosperity of the section, and the roads are such as to leave a sensation of comfort.

SALES OF SCHOOL LANDS

Public auction sales of 58,000 acres of state school lands will be held in Tehama County at the courthouse in Red Bluff, Tuesday, September 21; Shasta County at the courthouse in Redding, Friday, September 24; Trinity County at the courthouse in Weaverville, Monday, September 27; Siskiyou County at the courthouse in Yreka, Friday, October 1. All sales commence at 10 o'clock a. m. and proceeds go to the school fund. Terms ten per cent cash, six per cent interest on balance.

For list of lands and information, address State Surveyor General, Sacramento.



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You don't have to conserve on power if you own this Bean Direct-connected Engine and Pump. You can pump all day and all night if you want to.

Runs as smooth as an electric driven unit. The water pours from the discharge in a steady flood. Runs 10 hours on 6 or 7 gallons of fuel.

The outfit consists of a sturdy 4-cylinder engine direct-connected to a Bean Universal 4-inch Pump, the pump with the water-sealed stuffing box, automatic water balance, and other valuable features.

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You can't afford to buy anything but the best if you expect remunerative returns from your grove.

CITRUS TREES

Ours are the best that can be produced and always give satisfaction. Why take chances on inferior stock?

AVOCADOS

We still have a few extra fine field grown trees of the recommended varieties ready for immediate delivery.

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Every garden should contain at least two plants of this delicious fruit. Will grow any place in California. Send for our new descriptive price list.

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September is a Good Month to Plant

Growers who planted last July and August have already harvested over 15 tons per acre netting \$1000 eleven months from planting. For further information, write J. B. Wagner, Rhubarb Specialist, 1550 East Villa St., Pasadena, Cal.

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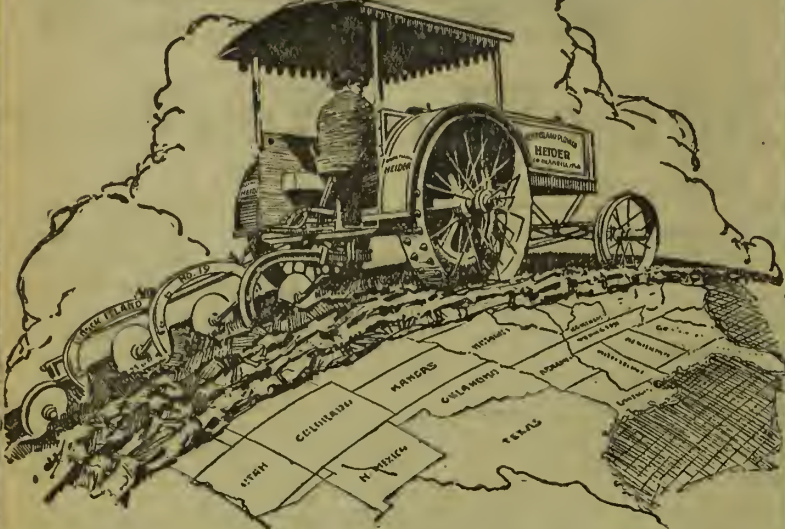
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IN the last 12 years thousands of Heider Tractors have gone into the hands of farmers. The Heider is in use in every section—in every kind of ground—on every traction or belt job. Let the thousands of Heider owners tell you how successful the Heider is—how economical—how *certain* it is in the delivery of power for the hardest work. Our booklet, "The Verdict Direct From Heider Owners," gives you *their* experience. Send for it.

15% to 20% Fewer Parts

Here is one big reason for the Heider's unequalled success: Its friction type of transmission saves 15% to 20% of parts. It does away with clutch, transmission gears and bevel gears. The fewer the parts through which the power has to travel, the more power delivered to drawbar or belt. This means more actual work from the fuel—a big saving.

No Gears to Strip

Here's another reason: With the Heider Friction Drive the power is taken directly from the flywheel by large metal disks at either side—one for go ahead, the other for reverse.

It is a steady power flow. No jerking, no vibration. NO GEARS TO STRIP. Tractor is always "in mesh." Seven speeds forward and reverse all with one motor speed and one lever for traction or belt.

Two sizes: 12-20 and 9-16. Send for catalog and "The Verdict." See what Heider users say. You do not have to take a "demonstration" of one or two days as proof. Catalog also describes famous Rock Island CTX Tractor Plow and one-man Tractor Disk.

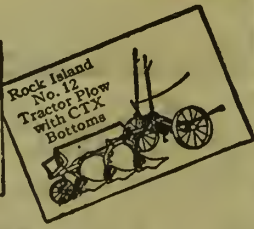
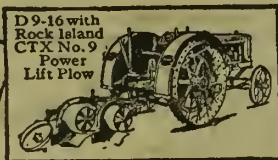
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California Grape Industry

The California department of agriculture is mailing "The California Grape Industry for 1919 with Outlook for the 1920 Crop." This is report No. 1 and is written by Professor R. L. Nougaret. It deals quite fully with wine grapes and their use as fresh table grapes, grape juice, grape syrup, dried grapes and the prospects for marketing the 1920 crop. That portion of the report touching upon salvaging the wine grape crop of 1920 follows:

Salvaging the Wine Grape

In discussing the salvage of the wine grape crop for this coming fall the question arises: How may wine grapes best be disposed of through both foreign and domestic trade? Do markets for these products exist at present to take care of the entire crop? Or must new markets be created or developed? And what portion of this year's crop utilized last year will have to be manufactured into other products?

In order to arrive at some definite idea as to how the 1920 wine grape crop may be disposed of a comparison of the tonnage that may possibly be utilized this year with that used last year for the same products will forecast whether or not the 1920 wine grape crop may be profitably handled.

Last year the wine grape crop amounted to 411,890 tons; 128,150 tons of these were shipped as fresh grapes and 82,700 tons were used in the manufacture of unfermented grape juice, grape syrup and dried wine grapes. Taking for granted that the 1920 wine grape crop will equal that of 1919 and this same tonnage will be used for the like purposes in 1920, there would remain only the tonnage of grapes made into wine in 1919, amounting to 201,020 tons, in whole or part, which would have to find other outlets if the same gallonage of wine is not manufactured next fall.

Last fall 201,020 tons of grapes were used in the manufacture of both dry and sweet wine. This year the tonnage that probably can be used profitably and in a legitimate way for making wine may be as follows:

Wine can be used as wine, without any modification of its component parts for sacramental, medicinal and other nonbeverage purposes. Five million gallons is a very liberal estimate for the quantity of wine that can be disposed of in this way, which corresponds to about 33,500 tons of grapes.

Wine can be made into vinegar and, judging by the preference of those who use wine vinegar, and who willingly pay a higher price for it than for vinegar made from other materials, one may presume that through advertising and other means of publicity and education no little amount of vinegar could be sold profitably when made from grapes purchased at as high a price as that paid for grapes used for wine making. However, at the present time there is but little demand for an article of this kind, and for this year's crop no tonnage at this time can be specified.

There are two or three patents for "de-alcoholizing wine" by which a very fair article can be produced. As yet it is a question whether wine in this form will take the place of the genuine article for beverage purposes to any extent. If, however, we take as a basis the quantity of wine sold for making the de-alcoholized article since the enforcement of prohibition to ascertain how much of this year's crop of wine grapes may possibly be used for the same purpose, 1,000,000 gallons should be a fair estimate, to which will correspond about 6,500 tons of grapes.

There is abundant evidence, at the time of issuance of this report, that preparations are being made to produce for nonbeverage purposes a large gallonage of fortified wine. Stocks of this character of wine are entirely depleted and the demand for it for nonbeverage purposes has been tremendous. Recently trainload shipments have been purchased at \$2 per gallon naked and there is practically none to be had at the present time. In view of this shortage, extensive plans are now in progress for the manufacturing of these fortified wines in large quantities for delivery after the com-

ing vintage season. This angle will, therefore, afford a big outlet for a large tonnage of wine grapes and table grape culls. It would not be surprising if 6,000,000 gallons or more fortified wines were made the coming season, necessitating the use of 80,000 tons of grapes. This, added to the 40,000 tons previously stated, would give an approximate quantity of 120,000 tons that would be used for wine this coming season. Compared to the tonnage used for the same purpose in 1919 (201,000 tons), there would be a surplus of 81,000 tons which would have to be utilized in some other way this coming vintage.

This figure of 81,000 tons expresses the economic problem of the wine grape industry to be solved in 1920 and the question arises: Are the prospective markets capable of utilizing this surplus? If so, are they of such a character as to be permanent, dependable and legitimate?

Last year the demand for dried wine grapes was greater than could be supplied because a market suddenly materialized at a time when most of the grapes were harvested. In anticipation of the 1920 wine grape crop the demand is just as firm. Contracts of purchase are eagerly sought for at prices as remunerative as those of last year, both for the dried product and for fresh grapes to be dried. Many more dehydrating plants than those in operation last year are at this time being erected and plans have been made to install additional plants in time for the coming season. There is no doubt that the quantity of dried wine grapes produced this fall will far exceed that of last year. It is hard to say how much of the surplus 81,000 tons will be used in this way. Half of it (40,500 tons) will produce approximately 10,800 tons of dried grapes which, when added to the 10,000 tons which is the quantity made in 1919, would give for 1920 a grand total of 20,800 tons of dried wine grapes seeking a market.

Should the other half (40,500 tons) be made into grape syrup, approximately 1,500,000 gallons would be the result, and this, added to the 200,000 gallons of grape syrup which is the gallonage produced last year, makes in round numbers 1,700,000 gallons of a product emerging from the experimental stage with the brightest of possibilities but practically without a market.

A PROMISING NEW AVOCADO

The Dorothea avocado is a new variety originating on the grounds of W. A. Miller, Hollywood. It was grown from a seed taken from a fruit of the original Miller tree and planted by Mrs. Jacob Miller in the spring of 1914. The tree is of a vigorous, erect and symmetrical type. In 1918 it bore five fruits and in 1919 forty fruits.

The fruit is pear shaped, weighs about one pound, has a skin of medium thickness, or slightly less, green in color, turning to a russet shade upon becoming fully ripe. The flesh is rich, free from fiber, of good quality and flavor, and the seed, which is of medium size, is tight in its cavity. The time of ripening, which is in winter, and the quality of the fruit, combine to make the Dorothea an attractive new avocado and one worthy of being noted carefully.

SANTA PAULA AVOCADOS

On the N. W. Blanchard ranch there are 600 to 700 avocado trees. They are set in a young citrus grove in every other row each way. This places them 40 by 44 feet apart. At the same age they are four times as large as the citrus trees. There are six standard varieties in the orchard, not all of the best, yet of the better known. On the Limoneira there are many trees and on the Mills and other ranches a few. In nearly every orchard of considerable size a few avocados have been planted for experimental purposes, and this seems to be the program in all citrus sections of the state.

Eldorado County is becoming a great shipper of pears. Many shipments have brought \$6.50 in New York. Nearly 200 carloads have been forwarded.

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Melilotus Indica Supplies Both

Now is the time to plant it. Buy only seed that has a quality test tag on every sack. It protects you against seed of low germination. Buy from your local dealer or from

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8000 ft.	6-Inch Riveted	16 gauge
700 ft.	8-Inch Riveted	16 gauge
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1000 ft.	18-Inch Riveted	12 gauge
800 ft.	22-Inch Riveted	14 gauge
300 ft.	24-Inch Riveted	14 gauge
500 ft.	36-Inch Riveted	12 gauge
10,000 feet	light wrought iron 8-Inch pipe with cast iron collars.	

All above pipe thoroughly overhauled and inspected and ready for immediate use.

We also have large quantity standard pipe and screw casing, pressure tested and guaranteed.

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Yorba Linda Avocados

By Ernest Braunton



HERE are but four avocado ranches of note at Yorba Linda, Orange County, and two of these promise to pass out. On the places of Dr. Lester Keller and O. A. Mann drillers are at work in the earth, with the expectation that oil from this source will be of greater value than that in the avocados of the orchards. Neither of the latter were promising from a fruiting standpoint, and in part now face destruction.

J. T. Whedon is the pioneer and premier avocado grower of that section, having for years held contracts with leading Los Angeles hotels for his entire crop, and this has to date proved insufficient to meet the growing demand. Though increasing his orchard capacity, he told the writer that he does not expect to be able to fully supply even his present single customer. Mr. Whedon grows more of Fuerte than any other variety, though he has 40 on the place. He is now leaning toward the Sharpless as a better hotel fruit than the Fuerte, merely because of superior size. He has a number of Taft now bearing their first crop and considers Taft still worthy of extensive planting. Though not precocious, when once it comes

into bearing it is a steady cropper and may yet be replaced in the official



Four Year Old Queen Avocado
In orchard of E. E. Knight, Yorba Linda.

list of recommended varieties. Other varieties in Mr. Whedon's orchard are not yet sufficiently tested to pass upon conclusively.

E. E. Knight had passed many years in Guatemala and surrounding countries before coming to California, and when he learned of the growing popularity of the avocado he went back to that country to get budwood from the best fruit trees he had previously encountered there. When he returned in July, 1914, he brought with him, among others, five he has retained and named—Linda, Kist, Knight, Queen and Rey. Among our best growers the Queen has to date been considered the better and 1921 may see it in the preferred list of the association. Others of his introductions may follow, for some orchardists are planting heavily of them. W. A. Spinks of Duarte has 200 trees each of Linda, Knight and Queen. All members of the avocado association are loud in their praises of Mr. Knight's efforts to give us the best he found in several years residence in the tropical highlands. The five he has introduced came from 4,000 to 6,000 feet altitude. In the Yorba Linda section nearly every orchard has a few avocado trees, some of them a score or more, and when all these come into bearing that district should be noted for its output of tropical and subtropical fruits.

STATE GRANGE

State Master Frank L. Hunt sends announcement that the 48th annual convention of the California State Grange will convene in Odd Fellows Hall, Sacramento, October 19. He writes:

"This year, as usual, the fifth and sixth degrees will be given. The fifth degree will be conferred by the Sacramento County Pomona degree team and the sixth degree will be given by the officers of the State Grange. We expect a large class will take advantage of this opportunity to receive these degrees.

"Secretaries should send reports for the September quarter to the state secretary as soon as possible after the last meeting in September so that she need not be delayed in getting out her State Grange reports. Also see that your delegates are supplied with proper credentials.

"Application has been made for reduced railroad rates. When you ask for your ticket say that you are going to attend State Grange and ask for a return certificate. Whether this reduced rate will be secured or not will depend on the number of tickets sold.

"It is none too early now to begin to prepare for this convention. Remember that we are going to have a very profitable and enjoyable session and that questions of vital importance will be threshed out. Try to see that your grange is well represented in helping to solve these important subjects. Come and catch the inspiration and enthusiasm that these sessions always impart."

PRUNES BEING SHIPPED

The first shipments of 1920 crop prunes to be made this season were sent East Friday of last week by the California Prune and Apricot Growers, Inc., who dispatched two cars, one from the packing house at Campbell and one from the Gilroy plant. This first shipment beats by one day the date of the first prune shipments made last year.

Hot weather of the past week, which has been general in all the producing sections of the state, has ripened the prune crop very fast and the picking and drying season is expected to pass its peak early this week. The packing houses in the Santa Clara Valley are working at top speed, filling orders which specify shipment during September.

Estimates which placed the 1920 California prune crop from 180,000,000 to 200,000,000 pounds still are holding good, and unless bad weather interferes with the fruit drying the next few weeks this year's crop will total close to 200,000,000 pounds in comparison with the 1919 crop of 250,000,000, the largest ever grown in the history of the industry.



Champion

Keep Your Truck Going

USE Champion Spark Plugs to cut truck costs.

They aid greatly in profitable, continuous truck operation, by ending many of the costly delays for repair and adjustment.

Champion No. 3450 Insulator effectively withstands the constant shocks, heat and vibrations to which truck motors are subjected in their long, daily grind of heavy duty work.

Champion dependability accounts for Champion Spark Plugs having been adopted as standard equipment by more automobile, truck, tractor, and engine manufacturers than any other make of spark plug.

There is a Champion Spark Plug for every type of motor car, truck, tractor, motorcycle and stationary engine. Order a set from your dealer today.

Be sure the name Champion is on the Insulator and the World Trade Mark on the Box.

Champion Spark Plug Company
Toledo, Ohio

DEPENDABLE SPARK PLUGS





For President
Warren G. Harding

For Vice-President
Calvin Coolidge

The Republican Party and the Farmer

To the Farmers of the Southwest:

Next November you will join with all other good citizens in choosing a president of the United States for the four years beginning March 4, 1921.

You must choose either Warren G. Harding, the Republican nominee, or Gov. Cox, the Democratic nominee. There is no third choice. One or the other of these two men will be elected. The affairs of the nation during the next four years will be directed either by a Republican or by a Democratic administration.

Which will best serve your interests, both as a citizen and as a farmer?

Let us look at it for a moment from the purely farm standpoint.

Your experience of the past seven years, and especially during the past three years, tells you what you may fairly expect from a Democratic administration.

Your industry, the greatest in the nation, was singled out as a target for a price fixing policy which has limited the prices of the things you had to sell while leaving you exposed to the exactions of profiteers in practically every other line of production, distribution and speculation.

You have been told what you could receive for your staple products, either directly or indirectly; you have been subjected to restraints as to shipping, and all sorts of exactions and annoyances.

But there has been no limit placed upon what others might charge you for the things you have had to buy.

The result of this unwise, unsympathetic policy, while discouraging and harmful to the farm producer, has not helped the consumer. On the contrary, it has made conditions worse for him, because it has tended to curtail production and at the same time has stimulated speculation and profiteering.

The Republican party is not a class or sectional party; its policies are intended to upbuild the entire nation. But it believes that it is essential to the welfare of all our people that the farmer, whose industry is the very foundation of our national prosperity, should have his fair share of the wealth which his labor and enterprise creates. It believes that if our agriculture is to be maintained the farmer must have an absolutely square deal.

The Republican party therefore, by its platform and by the utterances of its candidates, is pledged to a thoroughly sympathetic, practical, helpful at-

titude toward American agriculture. It promises a well thought out, constructive program which will help make farming more profitable and therefore make our farms more productive.

In contrast with this helpful attitude of the Republicans the Democratic party offers no protection to the American farmer against the cheap farm products of foreign lands; on the contrary, it re-affirms its tariff-for-revenue-only policy which throws the American market wide open to the dairy products, grains and meats produced on the cheap land and by cheap labor of foreign countries. It promises no relief from the price-fixing and price drive policies which have cost the farmers hundreds of millions of dollars during the past two years and have helped no one but the speculator and the profiteer. Nor does it even recognize the existence of the violent fluctuations in the prices of farm products—more violent and unreasonable during the past three years than ever before in our history—which have caused you such heavy and unnecessary losses.

Pledges of the Republican Party

Here are the formal pledges of the Republican party as set forth in the agricultural plank of the national platform. Read them carefully, for they are of vital interest to you.

Practical and adequate farm representation in the appointment of governmental officials and commissions.

The right to form co-operative associations for marketing their products, and protection against discrimination.

The scientific study of agricultural prices and farm production costs at home and abroad, with a view to reducing the frequency of abnormal fluctuations, and the uncensored publication of such reports.

The authorization of associations for the extension of personal credit.

A national inquiry on the co-ordination of rail, water and motor transportation, with adequate facilities for receiving, handling and marketing food.

The encouragement of our export trade.

An end to unnecessary price fixing and ill-considered efforts arbitrarily to reduce prices of farm products, which invariably result to the disadvantage both of producer and consumer.

The encouragement of the production and importation of fertilizing material and for its extended use.

The extension of the federal farm loan act so as to help farmers to become farm owners and thus reduce the evils of farm tenantry, and also to furnish such long-time credit as farmers need to finance adequately their larger and long-time production operations.

Revision of the tariff as necessary for the preservation of a home market for American labor, agriculture and industries. (Note that the pledge to the farmer is just as specific as to labor and capital.)

Harding's Endorsement

Senator Warren G. Harding, the Republican nominee, in his speech of acceptance took advanced ground on behalf of agriculture. He said:

"I hold that farmers should not only be permitted but encouraged to join in co-operative associations to reap the just measure of reward merited by their arduous toil.

"Our platform is an earnest pledge of renewed concern for agriculture, and we pledge effective expression in law and practice. We will hail that co-operation which will make profitable and desirable the ownership and operation of small farms and which will facilitate the marketing of farm products without the lamentable waste which exists under present conditions.

"A Republican administration will be committed to a renewed regard for agriculture and seek the participation of farmers in curing the ills justly complained of and aim to place the American farmer where it ought to be—highly ranked in American activities and fully sharing the highest good fortune of American life.

"Becoming associated with this subject are the policies of irrigation and reclamation so essential to agricultural expansion, and the continued development of the great and wonderful west."

Mr. Harding pledges federal co-operation with state governments in building and improving farms-to-market roads rather than national highways, to cheapen and facilitate the quick shipment of crops.

Republican National Committee,
Auditorium Hotel, Chicago, Ill.

Please send me, free and postpaid, copy of
Senator Harding's Address on the present day
problems of the farmer.

Name

Address

Send for a free copy of Senator Harding's address in which he discusses at length
present day problems of the farmer

Republican National Committee, Auditorium Hotel, Chicago

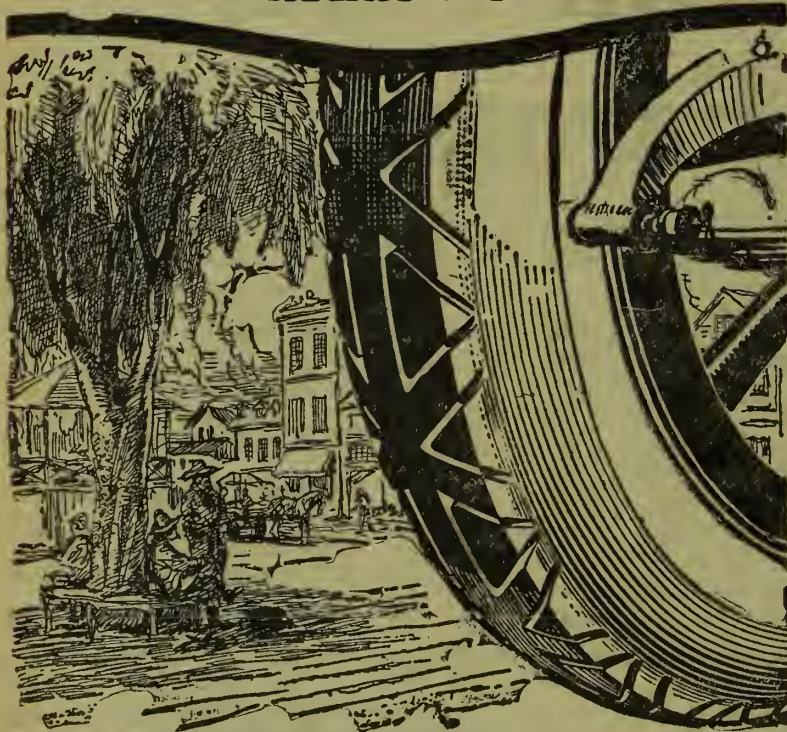
RACINE

MULTI-MILE CORD TIRES

Extra Tested for Extra Miles

Buy tires you know are right. Racine Tires—Multi-Mile Cord and Country Road Fabric—are Extra Tested to yield Extra Miles. Racine Absorbing Shock Strip welds tread and carcass perfectly—the industry's greatest mile-making feature. Racine Tires are extra quality tires—that's why they are economy tires for car owners everywhere. Be sure every tire you buy bears the name Racine Rubber Company.

Racine Rubber Company
Racine Wis.



Make The Manure Go Further

Of course you will use what manure you have, but there won't be enough—there never is. Make your manure go further—spread it thinly and supplement it with

Bradley's Standard Fertilizers

"THE WORLD'S BEST BY EVERY TEST"

They provide the additional plant food required—ammonia to set the fruit and give vigor to the tree—phosphoric acid and potash to give quality and weight to the crop. Bradley's fertilizers are high-grade and dependable. They are backed by over 60 years of experience.

See our local agent for further information or address

The American Agricultural Chemical Co.

P. O. Box 675 CALIFORNIA WORKS Los Angeles, Calif.

Our works at Nadeau Park are the most complete Chemical Fertilizer Works west of the Mississippi.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

School Attendance

Is there any certain distance which you are obliged to send your children to school? If you live over five miles from the school and have to move in order to send your children to school, must you move towards the school in your district? If you move outside of your school district do you have to pay?—Subscriber, Academy.

The compulsory education law requires that all parents of children between the ages of eight and fifteen years must send such child to a public school during the school session, with certain exceptions, among which are that in case there is no public school located within two miles by the nearest traveled road of the residence of the child, it shall be the duty of the board of education upon application of the parent to excuse the child from attendance. In case of a move from one district to another, the child will become entitled to attend the public school within the district to which the parents move. In fact, the board of trustees of any school district may permit children to attend schools of their district upon consent of the trustees of the district in which such children reside, or in case they fail to consent then upon the order of the county superintendent. All school trustees are also entitled to provide for the transportation of pupils within their school district wherever such transportation is deemed advisable within their judgment at a cost not to exceed 15 cents per pupil per day.

Interest in Pumping Plant

I purchased a ranch to which is appurtenant a one-quarter interest in an electric pumping plant located upon adjoining land, together with ownership of a pipe line upon the plant to my place. We have always had a working agreement whereby I took four days run on the plant and my neighbor took 12 days run throughout the season. I have always paid one-fourth of the total power and repair bills, which were sent to me each month. This spring I installed my own plant and notified my neighbor of my intention to allow my one-quarter of the time to stand idle. The first of the month he sent to me a power bill of \$20 and also a charge for oil for the pump. Can he make me pay these bills if I do not use the plant? Have I the right to require him to allow my one-quarter time to stand idle? Can I require him to give to me every fourth day use of the plant instead of in accordance with our prior arrangement, and has he a right to keep me away from the plant?—Subscriber, Exeter.

You and your neighbor were unquestionably tenants in common in respect to the pumping plant and you possessed over his land an easement for the purpose of procuring and delivering water to your land. You certainly have the right to traverse that easement for the purpose of keeping your pipe line in proper condition and for the purpose of procuring the operation of the pumping plant necessary to procure the water. The agreement as to payment of charges seems to be very definite; that is to say, that you will pay one-fourth of the total charges. If you do not desire to take the benefit of the pumping plant, it would seem that is an entirely personal matter with you. You were not paying for water or purchasing water, but your neighbor is entitled to proceed under the definite agreement which you have and to charge you with one-fourth of the expense of operation and repairs incident to the plant. Of course, if he would sell any of your water, you would be entitled to one-fourth of the receipts therefor. It does not seem that you could require him to change from the definite agreement which you have had as to the manner of use of the water and require him to give you water every fourth day nor require him to pay your one-quarter of the expense. He

is entitled to charge you with your portion, and if you fail to pay the same, to bring action in the courts to collect that amount or, he may hold it as a lien upon the interest which you have in the plant and foreclose that lien.

GREAT TRACTOR SHOW THIS MONTH

It has been demonstrated during the past few years that modern farming demands equipment taxing the ability of inventive genius. Every year brings forth its particular problems of agriculture, and within a short time there appears a new and better mechanism exactly suited to the work in hand.

Nowhere in the world is there a greater field for these appliances than in the great Pacific Coast farming districts, and it was with the determination to hold an exhibition truly national in scope—one that would give the farmers of this district an opportunity to see and to compare all standard makes, that the Tractor & Implement Dealers Association of Southern California perfected their plans for the big show to be held at Verdugo Woodlands, Glendale, September 20-26.

Obviously it is impossible for even the most wide awake farmer to keep track of all the improvements which appear with such rapidity, notwithstanding the fact that huge sums are spent in advertising. It is because of this rapidly increasing number of excellent mechanisms that the annual exhibitions of motor driven mechanisms are so valuable. They give the prospective purchaser an opportunity to examine and compare, under the most favorable conditions, the various standard makes of tractors, motor trucks, implements and power machinery.

The National Tractor and Implement Show of the West will be complete in every detail. It is planned, first of all, to make it a business, show, conducted on business lines for business men. This does not mean that entertainment features will be discarded, for there will be plenty of diversion for the visitors. But it does mean that the fullest opportunity will be given the visitors to view, undisturbed, the things that are of interest to them and which primarily influenced them to make the trip to Los Angeles.

The exhibit will open every morning at 9:30 a. m. and close at 6 p. m. The association, in anticipation of a large attendance, is prepared to give advance information on hotel accommodations and other matters of importance. This information may be obtained from the Secretary of the Tractor & Implement Dealers Association.

Drawing for position at the exhibition grounds has already been held and indications are that every foot of the 300,000 feet of exhibition space will be appropriated.

MORE SUGAR FOR NEXT FALL

People who have soft pedaled the sugar bowl for six years may be interested in the statement that crop conditions on July 1 promised an increase in next fall's sugar production in the United States; an increase amounting to, approximately, 333,000 tons, or enough to load a train of freight cars 70 or 75 miles long, allowing 40 tons per car. This prospective crop is equal to more than 22 pounds of sugar for every man, woman and child within the United States, and the increase over last year equals more than six pounds per person. The sugar beet crop this year covers almost a million acres as against the five year average of about two-thirds of a million; and the growing condition on July 1 was above the ten year average. There is more than half a million acres of sugar cane this year, about half of which is intended for sugar and the other half for syrup, after deducting considerable amounts for planting the next crop. There is a substantial increase in acreage over last year, especially in Louisiana, where nearly all the cane sugar of the United States is made. The growing condition of the cane in Louisiana is much better than last year but considerably under the average for the past nine years. The department of agriculture, which has carried on a number of projects looking toward making this country self sustaining from a sugar standpoint, is cooperating with other agencies in protecting the crops

from insects and disease and otherwise promoting the production and utilization of a bumper sugar crop. It should be borne in mind, however, that the forecast for 1920 is based upon conditions on July 1, and the actual outturn would be above or below this forecast, according as conditions between July 1 and harvest are better or worse than average.

TUOLUMNE IRRIGATION

The Tuolumne County farm bureau wants producers of fruits and crops to use more of Tuolumne produced water within its own boundaries. The farm bureau meeting recently determined that so long as four irrigation districts are at present securing water rights in Tuolumne County, viz., Modesto, Turlock, Oakdale and South San Joaquin, it is apparent that it is up to Tuolumne County to guard her water supply and demand her legal rights and use the irrigation water.

District Attorney Rowan Hardin gave a very concise legal view of the proposition which was of great value to the farmers, and gave some very valuable advice on the method of demanding our water rights legally.

Mr. Hardin suggested the formation of the Tuolumne County Water Users Association to aid the county in its hearing before the railroad commission, which is to occur in the near future. It was moved and unanimously carried to form the Water Users Association, and all present, 31 in all, became charter members. J. P. Dargitz was elected president and C. H. Segerstrom secretary-treasurer of the new organization. An executive committee was appointed, composed of J. P. Dargitz, C. H. Segerstrom, Earl Barron, Frank Ralph, Rowan Hardin, I. S. May and Leslie Booker. This committee will handle such questions as come up between regular meetings of the association.

HANDLING THE LABOR QUESTION

J. R. Locke, secretary of the Dinuba chamber of commerce, is doing some effective work in planning and organizing farmers on one hand and laborers on the other to secure greatest saving in orchards and fruit handling plants. In a statement recently sent out we note that:

"There is no overestimating the crop of fruit this year. Plums and apricots have come and gone and the peach season is upon us. Watermelons are now going out at the rate of 20 or more cars a day. In all 350 cars will be shipped locally, and this is not a watermelon country any more or a peach country either. Nearly everything has been put in grapes.

"Many new vineyards are coming in bearing this year and the crop will not be much less than twice what it was last year. That there will be work here for all goes without saying.

"The placing of workers in the fruit districts is now attended to by the Valley Fruit Growers Association, which last year maintained offices here. Their main office is at Fresno and the letters of the workers who desire to come in here are being referred to them.

"Just now there is plenty of help locally, though it is said that all that is coming in is being absorbed rapidly. The bringing in of raw help is not as popular as formerly with many growers. Two years ago during a scarcity of help, Y. M. C. A. camps and other camps composed of inexperienced workers from cities were established and found to be not altogether a success. These workers had to 'hand fed,' as it were. When they came in they would do nothing for themselves. They had to be taken here and there, found places to eat and sleep, and the philanthropic citizens who tried to handle them for the general benefit of the community faced only hard work and a deficit for their pains.

"Help that will come in and show a little initiative can make big money here during the fruit season. Wages in the field and packing houses will be high. Arrangements will be made to look after the help locally by the individuals employing them."

RAISIN IMPORTS UNPRECEDENTED

Nearly eight million pounds of raisins were exported from Malaga, Spain, to the United States during the first six months of 1920, a quantity that exceeds the total raisin exports from that port for the seven year period 1913 to 1919, inclusive, according to the U. S. bureau of markets. Practically the entire 1919 Malaga raisin stocks have been exhausted and there are no stocks on hand. The new crop will appear on the market between August 20 and 25. The

American consul reports that there is prospect of increased production. The raisin growers are looking for a continuation of the great demand for raisins in the United States.

FOR ANTS

John E. Wilbur of Pasadena recommends as a repellent and a material aid in the control of ant pest one peck air slaked lime, one-half pint crude carbolic acid. Stir thoroughly and where the Argentine is infesting trees scatter this mixture in circle around the tree. Also effective just outside

of the house, though odor is not the pleasantest.

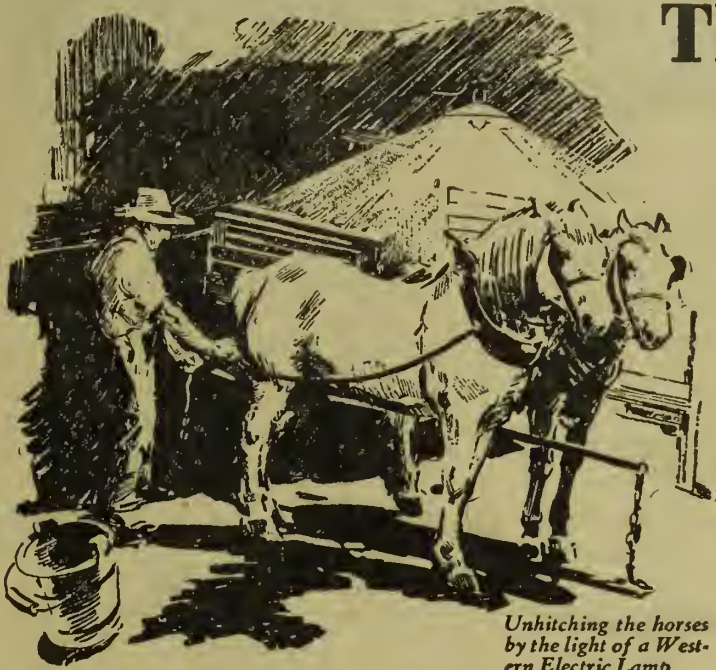
A SUBSTITUTE

"Henry," said Mrs. Dubwaite, "the Blithersbys next door want to borrow the baby a while."

"I have no objections, but be sure they return our baby and not somebody else's."

"Why, what do you mean?"

"The last time you loaned those people a pound of butter they sent back oleomargarine." — Birmingham Age-Herald.



Unhooking the horses by the light of a Western Electric Lamp

There was once a man called "farmhand"

"If farmhands grow much scarcer, we will soon forget what the word means. Help is certainly hard to get. But I have found help in another form—an electric power and light outfit. I want to tell you what these plants can do for you, and some of the things they can't do."

H. Bowman

Editor's Note: Mr. Bowman's farm is located near Ames, Oklahoma.

NOT being able to get any steady help, I have been doing most of my work myself.

It worried me to think that every hour I spent milking cows, turning a grindstone or chopping wood was just so much time taken away from necessary work in the fields.

"Last spring I became interested in the question of a farm plant. But I delayed buying one, because those I first saw were not much more than lighting plants. They didn't show up well in a power test for heavy work.

"Now my idea of a piece of farm machinery is that it must be useful first of all.

An outfit that does a man's work

"I kept on looking till I found the plant that came nearest to satisfying my need for power — A Western Electric Power and Light Outfit. I'm not saying that this outfit can mow the hay or do any plowing. But it certainly is do-

ing some real, honest-to-goodness work for me, saving time and labor.

"In the first place the Western Electric Outfit has an engine that can operate pretty near all the machinery on the average farm. It runs my fanning-mill, feed-mixer and milking machine.

"Then with the generator and batteries in action—or the batteries alone—I let electricity milk the cows. The utility motor, which I can carry around and connect to any lamp socket, is mighty handy for such jobs as running the churn or the grindstone, or in fact, turning any machine I used to turn by hand.

"All this means time saved—and time is money when a man is in the middle of his planting or harvesting."

Long life to your battery

You may be interested to know that the engine to which



Carry the motor right to the job you want done

Mr. Bowman refers is of the dependable valve-in-head, air-cooled type, burning gasoline or kerosene.

The battery lasts long because of the famous "tapering charge", a Western Electric feature. An automatic control very gradually decreases the rate of flow as the battery fills, till the current stops gently by itself. This takes all strain off the battery.

A postcard for booklet CC5 will bring you more facts about the powerful Western Electric Outfit. Write to the distributor nearest you.

A 12-year-old boy can operate the Western Electric Outfit



Write to the nearest Western Electric distributor for booklet CC5

Western Electric distributors in your neighborhood:

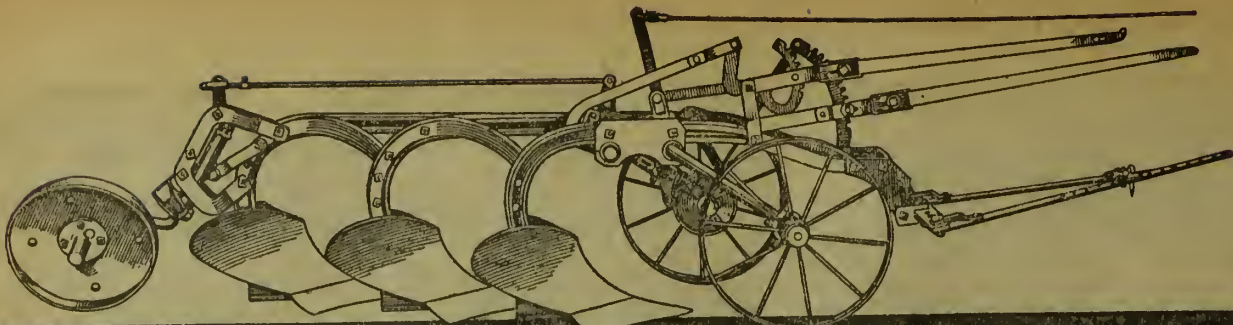
A. Schreck, Phoenix, Ariz.	Straun Electric Co., Calexico, Cal.
Hoepfner Electric & Machine Co., Phoenix, Ariz.	C. F. Bush, Blythe, Cal.
Vyne Brothers Electric Co., Prescott, Ariz.	E. O. Eastlaugh, Woodland, Cal.
	Fresno Electric Co., Fresno, Cal.

For territory still available write to Western Electric Co., Los Angeles

Western Electric Power & Light

Makes the battery last longer





At Last-A Real Orchard Tractor Plow

THE hitch is reversible—the levers have side adjustment—two important reasons why the John Deere No. 8 is especially satisfactory for orchard plowing. It is an easily-handled, low-down, power-lift plow for small tractors, that you can use for general field work as well as for orchard plowing.

JOHN DEERE NO. 8 ORCHARD TRACTOR PLOW

can be set out to either side for close work in throwing to or from the row. Note this advantage of the reversible hitch as shown herewith.

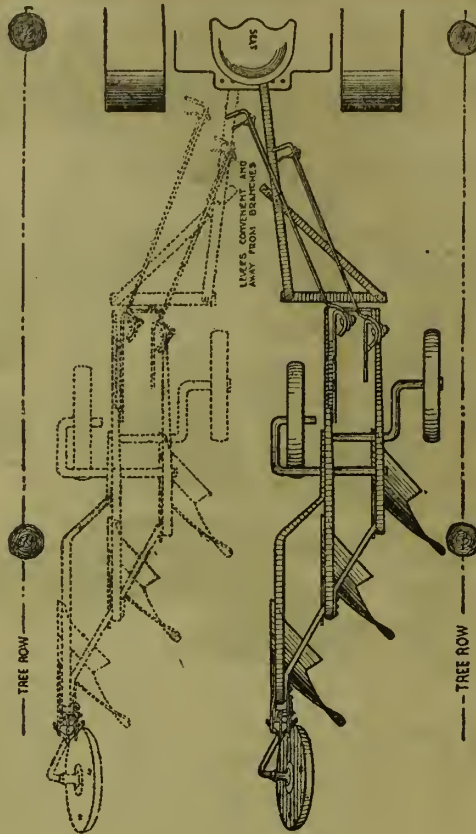
Levers Have Side Adjustment—With the plow set out to either side the levers can be angled in—they are always within easy reach from the tractor seat, out of the way of branches and free of the tractor wheels, when turning short.

Doesn't Scar Trees—Note also the special wheel base design that permits close work without scarring the trees. The front furrow wheel does not project beyond the inner mold-board wing and the land wheel is set inside the line of the third beam.

A Strong, Durable Plow—with simple, positive power lift, a great range of adjustment for deep or shallow plowing. Ample clearance and bottoms scour and pulverize to best advantage.

Made in One Size—three 10-inch bottoms—easy pull for small tractors. Ask your John Deere dealer to show you the No. 8 and don't forget he can show John Deere plows, in moldboard and disc types, for every size of tractor. A complete stock of plows and repairs is kept by John Deere Plow Company of San Francisco for quick distribution.

Write today for a folder describing the No. 8. Address John Deere, Moline, Illinois. Ask for booklet O-57.

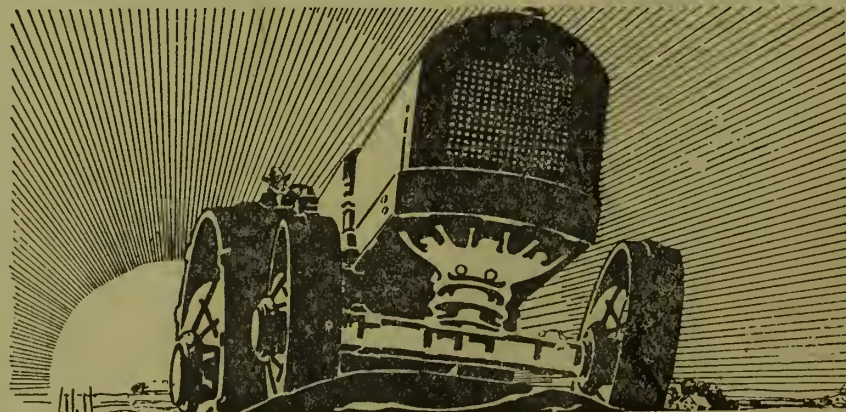


Note in the illustration above the special hitch and lever construction that permits setting the plow out to either side and angling the lever in so that they are easy to reach from the tractor seat, out of the way of limbs and free of the tractor wheels when turning short.

JOHN DEERE

THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

NATIONAL TRACTOR & IMPLEMENT SHOW OF THE WEST



**Verdugo Woodlands, Glendale
Los Angeles September 20 to 26**

AN EXHIBITION YOU CAN'T AFFORD TO MISS

All the latest, most improved tractors, trucks, power farming implements and accessories. A show for the farmer, for the implement, truck and tractor men of the West. Reasonable hotel rates. FREE CAMPING GROUNDS AT GLENDALE FOR VISITORS. Make your plans NOW to be there.

Direction of

Tractor and Implement Dealers Association of Southern California
GUY H. HALL, Manager

When Writing to Advertisers Say You Saw Their Ads in the California Cultivator

Veterinary

Sorghum Poisoning

Is it safe to turn cattle on Texas Ribbon cane which got rather dry a couple of times this summer but when irrigated came back and renewed its growth? I would like to know whether there is danger of Prussic acid poison and how one may determine this without chemical analysis?—Subscriber, Helendale.

This Texas Seeded Ribbon cane is one of the newer introductions of the sweet sorghums and but little seems to be known of it. However many members of this family store Prussic acid under certain drouth conditions. The danger of poisoning is about the same as from other kinds of sorghum. When pastured or fed green there is sometimes danger. Under certain conditions when the plants are stunted in their growth, Prussic acid (hydrocyanic) acid, which is fatal to stock, develops in the leaves. When the plants grow normally, however, there is practically no danger. The losses from sorghum poisoning as compared with losses from other preventable causes are very very small. When the plants are cured the poison disappears from the leaves so there is no danger from feeding the cured silage. Most of the cases of poisoning have resulted, as stated above, from the stunted growth or from the second growth after the first has been cut and taken off, due to the fact that this second growth does not develop rapidly enough to throw off the danger of poisoning which comes from the fully developed root system.

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Water Grass In Alfalfa

Have 40 acres that has been in alfalfa nearly 18 years. It was plowed two years ago and different crops put in. Last year I sowed alfalfa again but the water grass took possession. I mowed it three times and now it seems as if the grass has stopped growing and the alfalfa is doing better. Have a fairly good stand. Do you think I will be bothered with the water grass again next year? Can you tell me what to do in case I am?—Subscriber, Escalon.

This water grass—alfalfa combination is one that is exceedingly hard to handle. The best treatment is to put in sugar beets, beans or other crop which makes possible clean cultivation. It will be safest to give two years culture to these other crops. This should destroy nearly all the water grass seed now in the soil. If the field is badly infested it may as well be turned under as hand weeding in alfalfa costs beyond reason.

Self Cleaning Rabbit Hutch

Will some of your subscribers tell me how self cleaning rabbit hutches are made?—Subscriber, Ferndale.

The only self cleaning hutches we have seen have been those with either wire mesh or slat bottoms. The slat bottoms are to be preferred. Slat bottoms are laid at least three-eighths inch apart. We will ask our rabbit growers to give of their experience.

Automobile School

Will you please tell me if there is an automobile school in Los Angeles?—Subscriber, Cucamonga.

Yes the Y. M. C. A. of Los Angeles conducts a most excellent school along automotive power lines.

Thompson Seedless Grapes

What is the best time to plant Thompson Seedless grapes? What is the best crop to plant between the rows and how many years can one raise a crop in this way without injuring the grape vines? How soon will vines bear and what will it cost to harvest the grapes?—Subscriber, Manteca.

These questions are of interest to many so instead of trying to condense so much into a short answer we have asked expert in vineyard work to give us a more general and complete answer in a later Cultivator.

Red Spider on Beans

Soon after blossoming my beans dried up notwithstanding constant irrigating. Is there anything to be done to the soil to prevent this before sowing peas or beans again?—Subscriber, Jackson.

This is not a matter affected by the soil but is a case of most severe attack of red spider. When the leaves show the trouble as seriously as those which you have sent it is too late for any material benefit from any treatment of this year's crop. As soon as the first appearance of the attack by the spider came the beans should have been thoroughly sulphured with high grade flowers of sulphur. If this had been followed by a few hot days and you had repeated the treatment in two or three weeks it is probable you would have entirely corrected the trouble. It is well as soon as beans begin to show some size to give plants and ground around them light sulphuring. This may be repeated occasionally with benefit.

Yield of Acorns

Is there any data available in regard to the yield of oak trees in acorns for feed for hogs? I suppose there is a great difference not only between varieties but also in the same variety, but am anxious to get a little exact information.—Subscriber, Altadena.

Have any of our livestock people any information in this matter of production of oak trees?

Rattlesnake Oil Again

In a recent issue I see where someone asks how to get rattlesnake oil. First see he does not bite himself. Kill and skin, save the hide, then hang the snake up in the hot sun with a dripping can or jar to catch the drip, or take fat rolls out of him and try them out. The first is the easiest and best way, the way I always use on camp trips.—Levi S. Coombs, Napa.

Tuber Moth

How can I protect my potatoes from the moth which lays the eggs which later develop into worms? Will fumigation or dipping in formaldehyde be effective? The potatoes will be ready to dig in a short time.—Subscriber, Santa Barbara.

About the only protection of potatoes from the tuber moth is to keep dirt well worked up about the hill so that there are no exposed potatoes as they finish their growth. Also that there is some depth of dirt immediately around the stem. Then in digging expose the potatoes in the sun only long enough to dry off thoroughly for if they are allowed to remain until evening time they would probably be infested with large number of the worms, or eggs which soon become "worms." They should then be sacked, gathered and stored as soon as possible.

Bean Weevils

What can I do with beans when dry enough to put away so that they will not be destroyed by being bored full



Trade Mark Reg.

Saving on clothes

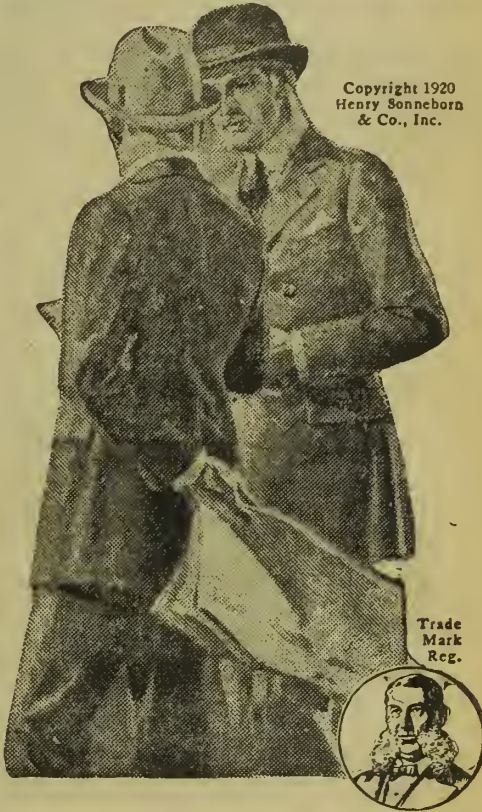
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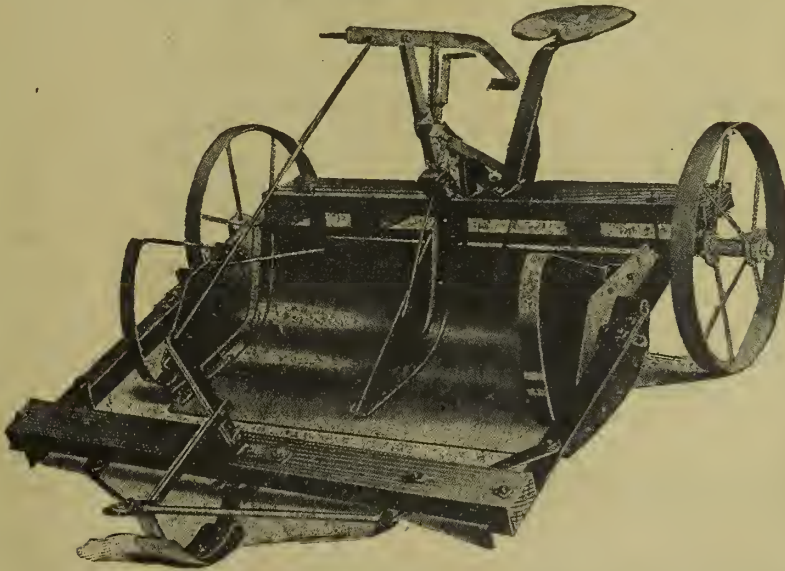
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Trade Mark Reg.

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of holes? Last year I put them in tight tin cans but the eggs must have been in the beans or invisible on the outside.—Subscriber, San Fernando.

The trouble is with your last year's beans that the eggs or living weevils were already in possession. Before storing this year place beans in bin or even in jar which may be made practically air tight and set on top of the beans a shallow vessel or container in which is placed carbon bisulphide. This vaporizes very quickly and kills everything in the container. Use at the rate of one-half pound per 100 cubic feet. Best results are obtained if the temperature is kept around 75 degrees. Leave the beans exposed in this gas for an hour or over night. If the beans are to be used for seed shorter exposure is advisable.

Grafting Walnuts

When is the best time to graft English walnuts; I have been told a more vigorous tree can be grown when

black walnut is grown to good sized tree and sawed back and grafted? How deep should soil be for walnuts without blasting? Is medium sandy soil best for walnuts?—Subscriber, Denair.

The best time for grafting is in late January or the month of February. See illustration of methods in California Cultivator of February 14, page 239; also short article by Mr. Neff in issue of January 31, page 167, both in the year 1920. We do not think there would be any material advantage in growing large trees before grafting. However, it has been done and in some cases very vigorous, heavy bearing trees secured. Such an orchard is not uniform, and we would much prefer planting budded or grafted trees from the nursery. We do not understand the question as to blasting. However, in deep sandy loam soil, which is best for walnuts, we hardly think there would be any gain in blasting. If the soil has more or less hardpan underlaid with a loam, even at four or five feet, we would prefer

to have blasting done in the fall when soil is perfectly dry.

Earwig

Will you kindly tell me what this bug is and how to get rid of it?—Subscriber, Anaheim.

This appears to be one of the earwigs. Specimen was referred to Horticultural Commissioner H. J. Ryan of Los Angeles County, and he says that it would be interesting to know what these pests are feeding upon. He adds:

"I am not familiar enough with these insects to identify the species, but will be interested to have an identification made if they are infesting cultivated crops, as they are not generally known to be a pest of economic importance. The European earwig was reported from Newport, Rhode Island, in 1911, and has become a rather serious pest in that district. The adults feed upon the petals and stamens of flowers, while the larvae feed upon the tender green shoots of various plants. The insects sometimes cause concern through their habit of hiding

about the porches or crevices in the side walls of houses. As control measures, successful experiments have been made with poison bait of 16 pounds of stale white bread to one pound of Paris green. The bread is ground up fine and mixed with the Paris green while dry. Enough water is added to make a mixture which will run through the fingers and spread readily when thrown broadcast. I see no reason why ordinary poison bran as used for grasshoppers and cutworms should not be effective. Numbers of the insects could no doubt be trapped and killed if hiding places were provided in flower pots or boxes filled with excelsior or shavings. I would be glad if your correspondent would send in half a dozen or more specimens with full account of plants damaged and nature of injury, extent of infestation and time when it was first noticed."

Best Fertilizer

Will you please advise me which would be the best commercial fertilizer for a Muscat vineyard? Vineyard about eight years old, soil decomposed granite, no irrigation. I should appreciate such information from one of our practical vineyardists in the state.—Subscriber, Escondido.

We hope some of our practical vineyardists will come back with an answer to this question, which will be practical and helpful, not only to this subscriber but to many others. We will say, however, that it appeals to us that it is a question for personal study with special attention given to conditions under which the vines are now growing. If continual clean culture for a period of years has exhausted the soil of its vegetable material, or humus, then an application of stable manure, of straw or, perhaps better, the growing and turning under of a green manure crop so as to improve physical condition would accomplish better results than the application of any commercial fertilizer. Vineyardists must learn that soil fertility is not a matter of prescription, though it is; as many a doctor will say, a matter of building up and allowing nature to have large part in this building up. At one time we thought that analysis of a crop would show the number of pounds and ounces of sulphur, phosphorus, or potassium taken from the soil by the crop, hence the number of pounds and ounces of chemical fertility which should be returned to the soil. Today we think more of physical condition which permits soil activity. But our subscriber asks for help from practical vineyardists. We hope they will send the help.

Sour Sap

I have a great many young apple trees affected with dry rot, sometimes called sour sap. If left alone will they return to healthy growth or should they be replaced?—Subscriber, Olympia.

The taking out of these trees and replanting others or leaving them in and nursing back to health is a problem which can only be solved on the ground after personal investigation, but our guess is that if there is a showing of dry rot the sooner the trees are removed and the ground refitted for planting next January with fresh healthy trees the better. We imagine the cause of your trouble is lack of irrigation about 12 months ago. Many orchardists failed to appreciate the need of an orchard tree approaching dormant season. The busiest time of the year, unless perhaps at fruiting, is when the tree is storing up starch and increasing vitality of its fruit buds for next year. Too often the orchardist looks at the falling leaf and indications of approaching dormancy as notice that his care of the tree is over until the next growing period, whereas, these dropping leaves only indicate neglect at the wrong moment, the allowing of the tree to become prematurely dormant and the denial of moisture which was necessary to plump up and fill out the buds and to store the starch. Next year's sour sap, die-back and a number of other troubles may be largely prevented by thoughtfulness or, better, by irrigation during July, August and September. The chief function of the tree is to bear fruit, but it cannot fulfill that function unless it has been permitted to store the required materials.



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WALLIS

—more acres per hour

With Pure Bred Hogs -- Start Right

By J. P. Bennett

THERE is no doubt that attendance at the state fair and other good stock shows of the state will prove an incentive to many to own and produce the class of animals winning the ribbons in the show ring. The big stock shows invariably instill the desire to get into the business, to feel the thrill of satisfaction from owning stock which is better than one's neighbors or fellow breeders. That ambition has been the big factor back of the improvement of the livestock industry.

It is safe to say that there are more new herds of pure bred hogs started each year than all other breeds combined, hence it is to the new hog man that this article is especially directed. The pure bred hog, by reason of its relatively low cost, remarkable fecundity, early profits and the fact that it can be produced on an economic basis, attracts many new men to the business. Some of these new herds will be founded by men who were formerly in the business and who today cannot resist the fascination and pleasure of handling pure bred livestock. However, the majority of herds will be started by beginners with little if any previous experience with pure bred hogs. To the man who plans founding a herd of pure bred hogs there are some fundamental considerations which necessarily must be firmly fixed in mind. First, one must have a natural love for good stock, an ambition to excel his fellow breeders. If it is drudgery to care for and develop good stock, then one will never make a success and might as well call all bets off before starting, for he will only be forestalling a sure failure. Look upon the breeding of pure bred hogs as a business, a profession, if you will, for it takes thought, study, time and effort to develop a herd of breeding animals such as you should aspire to own, and surely any line of endeavor in which one tries to improve upon the work of nature deserves to be called a real business.

The selection of the breed of hogs to handle requires some thought. I will not attempt to advise as to any one "best" breed, for the choice will depend largely upon individual fancy, location and the local demand. I might add, however, that the sooner all breeders realize that we all are working toward the same end, the sooner will we mark a new epoch in the livestock industry.

The selection of foundation stock is where the real work begins, for on the selection of breeding animals depends success or failure. Foundation animals may be acquired by purchasing open sows and gilts this fall, and an outstanding boar, or by purchasing bred sows and gilts during the winter sales and later buying the herd boar. Which, must be decided by your own preference, or, better, by the opportunity to acquire the type of animals wanted as foundation stock. Select females of the long, tall, smooth, deep bodied type, with quality and showing feminine character. This holds true for all breeds. The sow must have length and depth to insure constitution and ability to produce large, strong litters of pigs and care for them as she should.

In selection of your herd boar too much care cannot be exercised. It is commonly said that he is half the herd; however, if he proves to be inferior he is the "largest half." If a pig is chosen for the purpose of "growing out," especial attention should be paid to the pedigree. See that it traces to strong, potent sires on both sides. He should come from a strain of breeding that has produced the type of animals sought. Select a pig that has length, height, even lines, good head and ear. Pay especial attention to feet and legs, as they are the foundation of the hog. Select a pig rather thin through the shoulders so that when he acquires his masculine development, which will come with age, he will have smooth, even side lines and not be rough and bulging through the shoulders. There are certain characteristics that the boar must possess when young, such as type, style, smoothness, arched back,

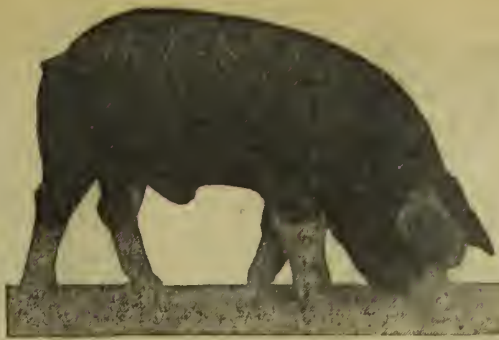
straight legs, short pasterns, shapely head and ear and a clear, open eye. Feeding may correct other defects, but the above cannot be changed. In your selection remember that a hog is simply a high powered machine used for converting the forage and grain products of the farm into edibles, such as ham, bacon, lard and sausage. Hence, get good ones of high class to start with, because the trade is always willing to pay a premium for something better than the other fellow's. Purchase proven blood lines. However, on this point it is well to be cautious, as there is often a difference between the fashionable blood lines, possibly made popular through an extensive advertising campaign, and the blood lines made popular by inherent traits and prepotent ancestry. Seek advice from a few dependable breeders and you will get off on the right foot, for as a body the livestock men of the country are an extremely high class and square bunch of fellows, and honesty and squareness are the corner stones of the industry.

Many men contemplating entry into the ranks of breeders feel that possibly through lack of financial support or other reasons they must forego their first purchase until such a time as they can put in an entire herd. This is a mistaken attitude, as a bred sow or gilt can be purchased for a moderate sum and in a few months will be paying a good dividend on the investment. After she has farrowed the best gilts can be retained for breeding purposes and in a remarkably short time one will have a choice collection of females on hand. Many of the best breeders have started in the business on just such a modest scale. This plan has another advantage often overlooked by the ambitious beginner, in that it allows him to grow up with his business, gaining practical experience while developing his herd. One is bound to make mistakes and these, occurring with a small investment, will neither be so discouraging nor so disastrous to his future operations. Then, too, he can more accurately gauge his ability and the size of the herd that can be handled most advantageously. There are few, if any, farms that will not show an added profit through the handling of at least a few pure bred hogs.

Get a definite idea of what you are trying to produce firmly fixed in mind and work toward that end. It has been breeding for a definite purpose that has established the present high standard of the pure bred business. It requires some degree of imagination, the ability to visualize a specific type or ideal and the tenacity to hold fast to a worthy purpose, to be a real constructive breeder—qualities which many possess but few capitalize. Remember that the pure bred industry is a big business and by virtue of its wide scope of possibilities has room for ups and downs. But like any other game worth the playing it is the fellow who sticks that wins in the end. Do not be discouraged if you have to wait a little while for success—just remember that if you "deliver the goods" and keep dominant the spirit of success, business is bound to come your way. Do not expect to make your fortune the first year; a reputation is not made and sustained in a day. Herds are not grown and stabilized in even a few months, but you have a possession of priceless value when you have attained rank as a breeder of pure bred livestock.

As your herd develops, give it publicity through the agricultural press. Let the buying public have an opportunity to know that you are on the map. Advertise consistently, keep the livestock department of the paper informed at frequent intervals regarding the progress of your herd. By so doing you can secure greater benefit from your advertising.

In conclusion, let me say, get good foundation material; get them big, of proven ancestry and the stretchy type that the constructive breeders of all breeds are striving to produce. Feed and care for them conscientiously, mix common sense with your work, be systematic and faithful and the herd will repay you accordingly.



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Are the result of careful mating and selection. Size and feeding quality have always been essential features in this herd. Write for prices and information. I can interest you.

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Victory Bob, the Greatest Son

of the grand champion, Giant Bob, heads the Sunland herd of Poland Chinas. I will be glad to meet you and show you Victory Bob at Sacramento, next month.

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VALUE OF PURE BRED BOAR

A pure bred boar at the head of a herd of sows will add a value to a crop of pigs that cannot possibly be added by the very best of feeding and management on the part of the owner of the herd, or a value that could not be expected by the use of a boar of inferior breeding, writes Professor George S. Templeton, head of the animal husbandry department, Texas agricultural college, in a recent issue of Progressive Farmer. There is an old saying that has proved itself to be a real law in animal breeding to the effect that "like begets like." Later studies in the principles of animal breeding explain very nicely that the outward characteristics of an animal are simply a development of the inherited possibilities of the animal, and express outwardly the characteristics that this animal will pass on to his offspring, provided he is properly bred.

The proper feeding and management of the little pig will give it a chance to develop so far as its inheritance from its parents will permit. If anything is withheld in the way of feed, exercise, etc., the pig will not develop to its maximum possibilities. However, if all little pigs were given the same condition for development there would be a great difference in the quality, size, constitution and many other characteristics in the mature hogs that are so important for high priced market hogs, because their parents were of such various kinds of breeding.

Let us consider three kinds of boars in use in many herds of hogs, and study the results of their use on the pig crop.

First, the scrub boar, which is fast disappearing, because he cannot compete with the good pure bred individ-

ual when prices of feed and labor are high and pork consumers demand a pork chop, pork roast, bacon and ham of first quality.

The scrub boar is a result of indiscriminate breeding or of natural selection under adverse conditions. There has been no effort on the part of careful, thinking men to improve his quality so that he will kill out a high per cent carcass of first quality meat. His indiscriminate inheritance has given him such a variety of poor qualities that we do not wonder at his pigs being narrow between the eyes, having narrow backs, tapering hams and meat of poor quality. The offspring of such a boar could not be otherwise for good things cannot come from bad combinations in hog breeding.

Second, we will consider the class of boars referred to as crossbred or grade boars. Crossbred boars are a result of mating boars of one breed with sows of another breed. Grade boars are those that have a large percentage of blood of one breed, but still carry a small per cent of inferior blood. What may we expect from boars of this class?

Quite often a beginner is tempted to buy a boar of this class and use him as a herd boar simply because he looks nice and can be bought cheap. The beginner is unfailingly disappointed when he compares a crop of pigs sired by a boar of this kind with a crop owned by another breeder who uses only pure bred boars. Crossbreeding and grading undoubtedly produce a large number of pigs of a desirable feeding type, but at the same time this practice of breeding mixes up the inheritance of the prospective boar to such an extent that the offspring will have an opportunity to develop too many variations that have come into his own bloodlines. This fact is borne out in breeding, for the offspring of crossbred and grade boars are inferior to their sires and lack the uniformity and good quality found in pigs sired by pure bred boars. When crossbred and grade boars are used their stock "runs out."

Third, we will consider pure bred boars. Pure bred boars, if properly bred, sire good pigs, for they can only transmit such qualities to their offspring as have been handed down to them by their ancestors. The pure breeds of hogs today represent what the constructive hog breeders have accomplished through many, many generations of selection and matings, starting years and years ago with inferior scrub native hogs. These breeders have had in mind a type of hog that would utilize feed economically and put on a maximum of meat on the parts of the body most valuable for human food. By keeping in mind this ideal type and selecting for breeding animals only those individuals nearest to their ideals, and keeping up this system of breeding for generation after generation, these breeders have been successful in fixing the desired type in their herds. In other words, the inferior qualities of the early type hogs have been culled out until the inferior qualities in the immediate ancestors of the pure bred hog have been largely eliminated. Consequently his characteristics are the results of mating animals of similar characteristics, and we say the pure bred boar is prepotent. He transmits his good qualities uniformly to his pigs because he can transmit only those qualities inherited from good parentage.

Below I will figure the approximate cost for service per pig, and estimate the relative increased value of the pigs because of their greater possibilities due to good sires:

First we will consider a boar costing \$100: Original price, \$100; care, equipment, etc., for four years, at \$100 a year, \$400; total, \$500; 30 to 50 litters in spring, 30 to 50 litters in fall, 60 to 100 litters per year, 6 pigs to litter, 360 to 600 pigs per year; four years, 1,440 to 2,400 pigs, or a cost per pig for service fee of about 33 1/3 cents.

In the case of a boar costing \$500, allowing \$100 a year for care, equipment, etc., or a total of \$900, the service fee per pig would be 60 cents.

It would be very difficult to estimate how much increase in weight and quality these boars would cause in their pigs, but a conservative estimate is that at from eight to ten months of age they would weigh 20 pounds more than

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45 Registered Holsteins

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SIR PIETERTJE KORNDYKE ORMSBY

To adjust the partnership existing between J. P. and W. W. Phillips, the entire herd of registered Holsteins at Allana Farm, Dixon, Calif., will be sold at public auction on the above date.

A Son of Sir Pietertje Ormsby Mercedes

Allana Farm herd is headed by Sir Pietertje Korndyke Ormsby, the first son of the breed's greatest sire of long distance producers and show ring winners ever offered in the west. As an individual he ranks high, as the untouched photo of him shown above indicates. His dam is a daughter

of Sir Korndyke Hengerveld De Kol, second dam a daughter of Sir Ormsby Hengerveld De Kol, some of the most desirable blood lines of the breed. Here is a real opportunity to head your herd with a son of the famous "Sir Piet," four years old, straight and right in every way.

Females With Type and Breeding

The female offering includes some beautiful individuals, many of them of Ormsby breeding, the kind that have brought top prices in the best sales recently. Among them are

A 26 POUND COW with a good yearly record, and bred to Sir Pietertje Korndyke Ormsby.

A DAUGHTER of the above cow by a full brother to Pietertje Mald Ormsby.

A BEAUTIFUL 21 POUND 3 YEAR OLD that has 470 pounds butter from 12724.7 pounds milk to her credit in 197 days. Bred to Sir Pietertje Korndyke Ormsby.

A Choice Lot of Young Bulls

An unusually good offering of young bulls is a feature of this sale. They are a typey lot throughout, most of them of Ormsby breeding, many of which are bound to go at dairymen's prices, and some that are good enough to head registered breeding herds.

Every animal positively guaranteed to be a breeder; every animal over six months old tuberculin tested and sold subject to retest by the buyer.

NOTE.—Allana Farm is 1 mile northeast of Dixon on the main State Highway, between Davis and Dixon.

Catalog free on request. Management
California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, California.

Auctioneer—Col. Ben A. Rhoades, Los Angeles.

pigs sired by inferior boars, which, at the present prices of pork, would mean an increased value per pig of \$2.40.

In these days when good pure bred boars are plentiful and reasonable in price, there is practically no excuse for using anything but a good pure bred boar, even though only grade sows are being used to grow pigs for the butcher. A good pure bred boar will sire a better quality of pigs than any other kind, and his pigs will have the constitution and capacity to utilize feeds to the best advantage and grow into market hogs of the best quality, or develop into individuals that will merit their being kept for breeding stock.

EARLY CASTRATION IMPORTANT

An experiment conducted at the Wisconsin experiment station shows the importance of castrating pigs early. In this experiment pigs varying in weight from five to 300 pounds were used.

A study of the following, says a

COMING EVENTS

Tulare County Livestock and Agricultural Show, Tulare, September 14-18. Secretary John A. Rollins.

San Fernando Valley Fair and Market, Owensmouth, September 15-18. Secretary Chas. L. Schufeldt.

National Tractor and Implement Show of the West, Verdugo Woodlands, Glendale, September 20-26. Manager, Guy H. Hall.

Kings County Fair, Hanford, September 21-25. Secretary Frank C. Russell.

San Diego County Farm Bureau Fair, San Diego, September 22-25. Manager Ed. Davidson.

Ventura County Fair, Ventura, September 22-25. Secretary L. P. Hathaway.

Glenn County Livestock and Agricultural Association, Orland, September 27-October 2. Secretary E. A. Kirk.

Fresno District Fair, Fresno, September 28-October 2. Secretary Walter C. Ficklin.

Shasta County Fair, Redding, October 1-2.

Los Angeles Livestock Show, Los Angeles, October 2-10. Secretary C. R. Thomas.

Siskiyou County Fair, Yreka, October 5-9. Secretary Claude R. Gillis.

Orange County Fair, Huntington Beach, October 7-9. Secretary, J. K. McDonald.

Southern California Fair, Riverside, October 13-19. Secretary W. W. Van Pelt.

Northern Arizona Fair, Prescott, October 14-16.

Kern County Cotton Festival, Bakersfield, October 16.

Mendocino Apple Show, Ukiah, October 27-30.

Western Royal Livestock Show, Spokane, Washington, November 1-5. Secretary Bert I. Hilborn.

Arizona State Fair, Phoenix, November 8-13. Secretary Shirley Christy.

Pacific International Livestock Show, Portland, Oregon, November 15-19.

writer in the Progressive Farmer, will show the value of early castration: Weight of pig A, 151 pounds; weight of pig B, 122 pounds; weight of pig C, 61 pounds; weight of pig D, 40 pounds.

After castration the loss of live weight by bleeding and other causes was determined: A lost 1.3 per cent of live weight; B lost 1.67 per cent of live weight; C lost one per cent of live weight; D lost one-half of one per cent of live weight.

It required but very little effort to perform the operation on the young pigs, one man often being able to handle them; on the other hand, it required two or three men to handle larger hogs.

The after effects are very interesting. It was found that the young pigs recovered very quickly. They healed quickly and ate normally. The larger pigs were sore and stiff for several days and did not eat normally.

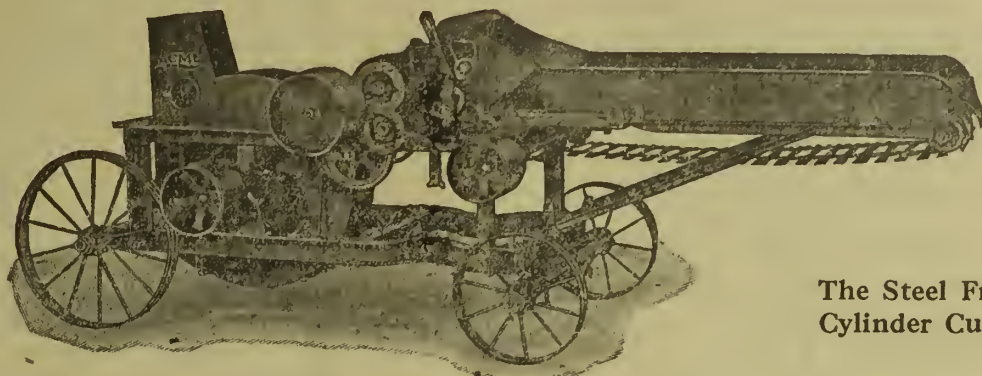
Pig A lost weight for four days and required more than a week to get back to normal gains. Pig D recovered normal gains in two days.

Several unweaned pigs weighing from ten to 15 pounds were weighed for a week and castrated. They did not lose weight but continued to gain the week after castration the same as the week before. They showed no signs of stiffness, soreness or loss of appetite.

It is seen from these results that the earlier pigs are castrated the less danger from loss of weight or serious results in any way.

ACME

Combined Silo Filler, Hay Chopper and Alfalfa Meal Machine



The Steel Framed Cylinder Cutter

FOR FINE, CLEAN CUT SILAGE of superior quality---The kind that packs tight and prevents loss, choose the cylinder type machine.

Combine these qualities with Durability and Light Power Requirements by selecting the Steel Framed Acme.

Spiral Cutting Knives

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Alfalfa Meal Attachment For All Sizes

COMPLETE STOCK - - - ALL SIZES - - - IMMEDIATE DELIVERY

CATALOG MAILED UPON REQUEST

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Full Stock also carried at O. J. WEBER CO., Los Angeles



Keep your hogs free from lice

Keep their sleeping quarters, the feeding grounds, pure and healthful. Use the sprinkling can. Add four tablespoonfuls of Dr. Hess Dip and Disinfectant to each gallon of water. Sprinkle the animal body to kill the lice, the sleeping quarters and feeding grounds to destroy the disease germs. Or provide a wallow, to which add about one gallon D and D to every 70 gallons of water. Disinfect the barns, the poultry house.

Also use it about the home, in the sick room, sink and cesspools, to establish better health conditions.

DR. HESS & CLARK Ashland, Ohio

DR. HESS DIP and DISINFECTANT

Vaughn's Jones

Is a boar that is siring a high class of POLAND CHINAS

good enough for the most discriminating buyer. Come and investigate; can show you.

A. J. Van Cleef, Riverdale, Cal.

Facts in BLACK & WHITE

What a Purebred Holstein Sire Will Do When Bred to Scrubs

Resume of eight years' experiment at Iowa Agricultural College:

"The average of all the records made by first generation heifers, sired by a purebred Holstein Sire, shows an increase of 2314.5 lbs. milk or 71 per cent in milk, and 67.15 lbs. fat, or 42 per cent in fat, at an average age of 3½ years over the record of their scrub dams at an average of 6 years."

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REMEDIES FOR Cow Cleaning, Breeding and Abortion, Scouring Calves, Hog Cholera An Insect Destroyer A Poultry Food

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DIAMOND G HEREFORDS

A few choice young bulls, Big, heavy-boned husky fellows sired by DON PERFECT 2nd, one of the best sires in the West. Priced right and guaranteed.

H. H. Gable

Esparto, Cal.

SPECIAL SALE OF Purebred Berkshire Hogs

to eliminate entire breeding herd at Whittier State School, Whittier, Cal.

Leader's Invincibella 2nd, 1st prize aged sow Los Angeles Livestock Show, 1919.

Two nine months boars out of Leader's Invincibella 2nd by Byron Rookwood 2nd, grand champion boar.

Grape Wild Chief, 3 year old boar. Junior Champion boar pig Los Angeles Livestock Show, 1918.

Young gilts and boars and brood sows at little more than pork price.

Col. W. C. Lookingbill

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Have now established permanent headquarters at my new U. & L. Union Stockyards, midway between Pomona and Ontario. Can thus command a wider field of rich dairy and swine breeding interests. 25 years' experience buying and selling in the heart of Iowa. For real service write me at

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Greatest Livestock Show and Agricultural
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Wonderful Exhibits of
Cattle, Hogs, Swine, Sheep, Goats
Poultry, Pigeons, Rabbits, Dogs
An Unsurpassed Agricultural and
Horticultural Display
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RACING
Trotting, Pacing, Running
Six Days of Racing

LARGE PRIZES AND PREMIUMS

A "Farmers Fair"

7 Full Days

Music and Entertainment

King Korndyke Pontiac Mead

Average of his Dam and Sire's Dam (Both Former World Record Holders)

At Average Age of 4 yrs. 2 mo. 10 dys.

Semi-Official, 365 Days

Official Test, 7 Days

1062.64 lb. Butter

21173.75 lb. Milk

31.91 lb. Butter

615.60 lb. Milk

His Sire—King Korndyke Pontiac 20th

His Dam—De Kol of Valley Mead 2d

Four of his seven nearest Dams have held World's Records

LOS ANGELES COUNTY FARM

Hondo, Cal.

3 miles south of Downey on Downey-Long Beach Boulevard

Italian Vineyard Company

Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them.
Priced at a figure any farmer can afford and that will show him a profit.

Alex. Wilson, Supt., Guasti, Cal.



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where efficiency is our watchword and the production of extra heavy milking Holsteins and big type Poland Chinas is our specialty. A few choice animals of either breed or sex for sale at all times at reasonable figures. Write for information.

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Over Two Million Calves

protected against Blackleg for LIFE with ONE treatment vouch for Purity Blackleg Aggrassin (Germ-Free Vaccine made by the Kansas Process). Absolutely safe to use. Cannot transmit disease. Brand, castrate, etc., when you vaccinate. OTHER PURITY PRODUCTS: Anti-Abortion Vaccine for Cattle; Hemorrhagic Septicemia Vaccine for Cattle, and Sheep; Anti-Hog Cholera Serum, and High Count Mixed Infection Vaccine for Swine. For service that counts write, phone, or wire

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Heads my herd of carefully selected sows. He should be seen to be appreciated. I can spare a few choice females or you can either sire by or mated to this good boar. You will be pleased with the phase made from me.

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Live Oak, Cal.

At the bottom of your letter to advertiser must say "California Cultivator" and prompt reply is assured.

Does It Pay to Feed Grain

By C. V. Castle, U. S. Department of Agriculture

Such a question may seem foolish to men who have had their dairy experience in the East or Middle West, but there are hosts of Western dairymen who do not feed any grain and are not as yet convinced that it will make them more net profit to feed grain.

With prices of grain as high as they are now the inherently low producing cow will probably not pay a profit on grain where alfalfa hay is abundant. But will the inherently low producing cow pay even for good alfalfa hay with labor and overhead as high as it is now? Most dairymen will say "no." What about the other cow, the one that might be a high producer if fed right? Will it pay to feed such a cow grain? The best answer is that the most prosperous and most progressive dairymen, even in the Western states, feed grain. Are they really making more net profit than those with good cows that do not feed grain? The cow testing association records of these grain fed herds in which the boarders have been culled almost always show more money at the end of the year, over cost of feed than similar herds not fed grain. Where excellent pasture is available the difference is not so noticeable but even in these places the most profitable herds are the grain fed herds. Here are some figures secured in a section where alfalfa hay is relatively cheap and grain very high:

Profit per cow above cost of feed, per year: 4 herds, grain fed, \$115; 4 herds, fed no grain, \$85; making a difference of \$30.

If the grain had been purchased more cheaply by cooperative buying the result would have been more in favor of the grain fed herds. This is

only part of the story. The effect of grain on developing the young cows, is worth while even if they only paid for the grain.

With a cow freshening and giving less than a pound of fat a day, unless a young heifer, it probably will not pay to feed grain or even keep the cow unless she is extremely persistent. For cows freshening and giving a pound and a half of fat a day, or more, eight to ten pounds of grain a day will keep the cow in condition and insure a more persistent flow of milk. For a cow that has been milked six months and is still giving a pound of fat a day, four to six pounds of a good grain mixture will keep her in condition and insure her persistency throughout her lactation period. It does not pay to feed less than four pounds of grain to a cow in milk nor less than two pounds to a dry cow. The grain fed should be a mixture of several grains. It should be palatable and composed of those concentrates which will tend to some extent at least to provide a balanced ration.

These amounts of grain are minimums and if you have never fed grain before it is better to start with the smaller amounts. Feed each cow according to her known characteristics and to her production. If you are afraid to feed all your cows grain, try it out on your best cows. Don't stop at anything less than a six months trial. The effect of grain feeding is shown more in its ability to hold a cow to a good milk flow rather than in any sudden increase at the time of feeding, and after all this is what counts because a cow, is supposed to work by the year and not just while she is fresh.

Importance of Milk as Food

The agricultural extension service of the Ohio state university has issued bulletin, Vol. 15, No. 3, "Milk, Its Importance as Food," by J. F. Lyon. It is a booklet of 20 pages and filled with tables and general statements as to cost of milk compared with other foods, and also explanation of where in milk is requisite to the growth of a strong and efficient race. The book is summarized as follows:

"Milk is a protective food, and as such is in the class of those foods whose liberal use protects health and promotes growth. It excels all other protective foods, being approached in value only by fresh, green, leafy vegetables such as lettuce, spinach, etc. The liberal use of milk is the best dietary precaution for maintaining good health in all individuals, and for promoting rapid, healthy growth in the young.

"The use of milk in the United States should be considerably increased. A pint of milk a day for each youth and adult and a quart a day for each child under 12 is a good standard. If the family income is low the use of meat may be largely reduced or eliminated altogether with safety to health, but under no circumstances should the use of milk be reduced below a pint per person per day.

"Milk is relatively cheap on the farm. The farmer's family should use it more liberally in cooking and as a drink. Such an increased use of milk is economical and leads to better health on the farm.

"From the standpoint of food conservation the production of milk is much more economical of feed and fodder than the production of meat. The substitution of milk for meat in the diet not only tends to improve the health of the consumer, but also to conserve the country's food supply.

"Milk, to be fit for human use, should be produced from healthy cows under sanitary conditions. It should be carefully handled until consumed.

"Milk is the most excellent food known because it is a complete food. It supplies energy and protein and, most important of all, it contains large quantities of mineral matter and of vitamins which are lacking in most foods, but without which nutrition fails.

"Milk is indispensable for infants.

"Children between the ages of 2 and 12 years are likely to suffer injury to health and strength if fed without milk.

"Adults can live without milk. Health and vigor are improved, however, when the diet of every adult contains at least a pint of milk per day.

"The liberal use of milk tends to maintain a sanitary condition in the digestive apparatus and to keep out those bacteria which produce toxic substances and which tend to bring on a condition known as autointoxication.

"All things considered, milk is an economical food. As a source of protein it is as cheap as or cheaper than foods of equal quality such as eggs, fish, and meat. As a fuel food milk is not nearly so cheap as the cereals and fats, hence these should be depended upon chiefly for the supply of bodily heat and for muscular energy. As a protective food milk excels all others. In the interest of health we can not afford to neglect the use of milk.

WOOL CONSUMPTION DECLINES

Reflecting the extensive shut-downs which have occurred in the wool manufacturing industry during the past few months, the July wool consumption report shows a consumption of 37,100,000 pounds of wool, grease wool equivalent, for that month, as compared with 63,000,000 pounds in July, 1919, a decrease of 41 per cent. While mill operations were less extensive in July than in any other month this year, there has been a steady decline in wool consumption since March, when 67,900,000 pounds were used. Reports for other months were: April, 66,900,000 pounds; May, 58,600,000 pounds; June, 46,000,000 pounds.

A comparison of the relative consumption of the different grades with figures for preceding months shows a gradual increase in the percentage of carpet wools used, while the percentages of the other grades have been fairly constant. The percentages for July are: Fine, 30.2 per cent; one-half blood, 17.6 per cent; three-eighths blood, 12.7 per cent; one-fourth blood, 20.7 per cent; low, 2.7 per cent, and

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's Caustic Balsam

IT HAS NO EQUAL

For — It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Bolls, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

Human Body

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$100.00 paid in doctor's bills."

OTTO A. DEYER.

Price \$1.75 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet E.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

A Perfectly Safe and Reliable Remedy for

Sore Throat

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Neuralgia

Sprains

Strains

Lumbago

Sore Lungs

Rheumatism

and all Stiff Joints

Blackleg

MAY BE PREVENTED BY USING PARKE, DAVIS & CO.'S SCIENTIFICALLY PREPARED

Blackleg Vaccines

BLACKLEG VACCINE (BLACKLEGIDS)

THE OLD RELIABLE BLACKLEG VACCINE IN PILL FORM

BLACKLEG AGGRESSIN (GERM-FREE BLACKLEG VACCINE)

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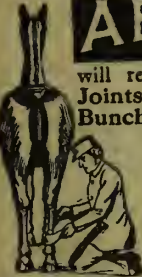
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Write for free instructive booklet on Blackleg Prevention.

ANIMAL INDUSTRY DEPARTMENT OF

Parke, Davis & Co.

DETROIT, MICH.



ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.

will reduce inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula and infected sores quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister or remove the hair, and you can work the horse. \$2.50 per bottle, delivered. Book 7 R free.

ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful, Swollen Veins, Wens, Strains, Bruises; stops pain and inflammation. Price \$1.25 per bottle at dealers or delivered. Will tell you more if you write. Liberal Trial Bottle for 10c in stamps.

W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass

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Col. Ben A. Rhoades
Harold B. Rhoades

Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

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TRAILERS LIKE THIS

\$35 to \$600

2 and 4 Wheeled
Auto Trailer Co.
1320 Central Ave.
Los Angeles

carpet, 16 per cent. The percentages for June were: Fine, 31.5 per cent; one-half blood, 15 per cent; three-eighths blood, 15.5 per cent; one-fourth blood, 20.8 per cent; low, 2.9 per cent; carpet, 13.9 per cent. In May the consumption of fine wool amounted to 30.5 per cent and carpet to 12 per cent.

HOW TO GET THE FULL BENEFIT OF A COW TESTING ASSOCIATION

The object of a cow testing association should be to provide means and methods for improving the dairy qualities of the herds of members, through the periodical weighing and testing of each cow's milk, which will give reliable information; on the basis of which unprofitable cows may be eliminated and feeding done more economically; and further, by ascertaining the profit or loss as compared with the cost of feed for each cow in the herd, through a monthly record of the value of her product and of the cost of the feed she consumes during the year; and in general to promote the dairy interests of the members.

While it is a fact that the cows in cow testing associations have a higher production record by more than a hundred pounds of butter fat yearly than the average production of dairy cows in the United States it is chiefly because the low producers are discarded and those remaining have received better care and feed and not because of any general effort to improve the quality of the livestock. The cow testing association enables the dairymen to select the good cows for breeding purposes but if he breeds these cows to mediocre bulls or bulls that are no better than the cows he keeps, there will not be the improvement that we should look for.

The feature of cow testing association work should be emphasized far more than it has been because the results should be of far more importance than even the culling of low producers.—J. E. Dorman.

ANOTHER DELICACY FOR THE HOG

The gastronomic potentialities of fish have added another course to the daily diet of the hog. This course is in the form of fish meal, a refined by-product made from sound wholesome raw material for the canneries. Do not confuse fish meal with fish scrap, which is a much coarser by-product used for fertilizer. Formerly all cannery waste was made into scrap, but now the clean, sound portion is ground to a fine palatable meal of extremely high protein and oil content, and may be used to replace tankage in the rations of hogs, poultry and dairy cattle.

The feeding value of the meal is equal to high grade tankage and its method of preparation has removed the disagreeable features of formerly prepared fish rations.

Experiments with fish meal thus far have not tainted the flesh or other products used for human food of any animals to which it has been fed.

The rancher by feeding this product to his animals instead of directly depositing it on his land gets the benefit of its food value and also the fertilizer from his animals. In this manner two profits accrue from the material so fed.—S. O'T.

DAIRY COW COMPETITION

County Agent Gordon is in charge of a dairy cow competition to be continued through the coming year by Los Angeles County farm bureau. There are series of monthly and yearly prizes to be given for highest average production in herds under 60 and in other herds of between 60 and 150 cows, also in herds over 150. There will be other prizes for highest individual production of both pure bred and grades; also for best five cows.

AN OPTIMISTIC BRIDE

"It's quite a secret," said Maureen, "but I was married last week to Pet Sullivan."

Jane—"Indeed, I should have thought you'd be the last person in the world to marry him."

"Well, I hope I am."—Houston Post.

Dispersal Sale

106 Registered Shorthorns

77 Females---29 Bulls

WILLOTTA RANCH

Owned by William Pierce

Suisun, California

Thursday, September 30, 1920

The females in this offering are a good, useful lot of breeding cattle that have been handled strictly under range conditions, representing many years of careful selection of regular breeders and the heavy milkers that produce and develop well grown, rugged calves. A large number of the females are granddaughters of the famous Glide bull KING EDWARD.

Over 30 Cows with Calves at Foot

Besides the females there will be 29 bulls in the offering, a large percentage of them ready for service. They are all reds, out of the selected dams in the herd, and ready to go out and work improvement in range herds.

Write for catalog.

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif.
Auctioneer—Col. Ben A. Rhoades, Los Angeles.

AUCTION

105 Head of Dairy Cows and Heifers 105

Registered Holstein Bull

At our dairy on Kearney Boulevard, 8 miles west of

FRESNO

Thursday, September 16th

at 9 A.M. Prompt

The owners are dissolving partnership and have instructed us to dispose of a splendid herd of dairy cows and heifers on above date.

Positively Without Limit or Reserve

Included in this good herd buyers will find 75 cows, mostly Holsteins, a few Jerseys and Durhams. There are a number of fresh cows and 20 head of heavy springers. There are 30 head of choice Holstein heifers, 14 to 18 months old, all selected from the best producing cows in the herd and by registered sires.

The cows in the herd are young. The foundation herd was purchased mainly from selected cows in the Frank Helm and Bert Vogel herds near Fresno. By careful selection in the use of high-class pure-bred Holstein sires, the present choice dairy herd has been built up and it is considered one of the top dairy herds in the San Joaquin Valley.

Prospective buyers are cordially invited to visit the dairy prior to the sale and look this good herd over.

One pure-bred, registered Holstein bull, sired by Segis Pontiac Mead 148980 and out of the good producer De Kol Burke Lyons Maud 179277.

Twenty ten-gallon cans, aerator, cream cooler, 2 tanks, 2 De Laval separators, pails, etc.

Two horses, weights 1,300 lbs. each. Saddle horse, saddle and bridle.

TERMS: \$100 and under cash, over \$100, one-fourth cash, balance in 8 monthly payments, with bankable note bearing 8% interest. Buyers from a distance must furnish bank reference.

Don't miss this.

GENUINE CLOSING OUT SALE

LANINI BROS., Owners

RHOADES & RHOADES

AUCTIONEERS

1501-3-5 South Main Street

Los Angeles, Cal.

CLARK, HUNTER & CLARK

The Livestock Auctioneers

Sales made any time and any place. Write for sale dates, we can fill them.
Clark, Hunter & Clark Modesto, Cal.

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EXPOSITION PARK LOS ANGELES OCT. 2-10 Inc.

The Greatest Combination of Educational Live Stock Features and Program of Amusement Events Ever Held in Los Angeles in one single show.

BLOODED STOCK Beef Cattle, Dairy Cattle
Swine, Sheep, Goats
Poultry, Pigeons, Rabbits

\$50,000 CASH PRIZES AND PURSES

Every Minute Attractions to
Educate—Divert—Amuse

EQUESTRIAN EVENTS—BIG HORSE SHOW—RODEO, Running Race Classics, Kennel Show, Pet Stock Exhibits, Amateur Boxing, Fashion Parade, Trick Riding, Trick Roping, Relay, Hurdle and Chariot Races, Famous Santa Catalina Island Marine Band—Surprises Galore.

OPEN FROM 8 A. M. TO 8 P. M.
ADMISSION 50c.

ALL ROADS DIRECT

MANY ENTRIES FOR LOS ANGELES LIVESTOCK SHOW

Plans are completed for the greatest combination of livestock, educational and entertainment features ever held in Los Angeles during one show, with entries to date of upward of 600 pure bred animals, among them grand champions at the state fair and the national show,—the Los Angeles Livestock Show, Exposition Park, October 2 to 10.

The closing date for entries, September 5, brought telegrams and letters reserving space in excess of the 125,000 square feet provided in the original building plans. Thus the 1920 Livestock Show is assured of highly gratifying support from breeders and exhibitors.

In order that all the people, dwellers in city, town and country, may be made to know of the scope of this show and of its educational possibilities, the directors have inaugurated a comprehensive campaign. Daily, weekly and monthly newspapers, railroad lines, agricultural clubs, breeders associations, chambers of commerce and civic bodies, all are assisting in a drive to bring 200,000 people to Exposition Park during the nine days, October 2-10.

Nine full days of spectacular events both educating and diverting are promised by the management. The program will include hundreds of exhibits of famous pure bred animals, daily horse show, rodeo, racing, poultry and pet stock show, and countless timely surprise features.

That the Los Angeles Livestock Show is being supported by breeders everywhere is proved by the following list which includes entrants from the Atlantic to the Pacific:

Dutch Fork Stock Farm, Easton, South Carolina, and Pleasant Hill Farm, Bethany, Illinois, breeders of Tamworth and Yorkshire swine.

Western entries of from one to 26 animals include:

Hereford cattle. Kern County Land Co., Bakersfield; Babbit & Cowden, Cashion, Arizona; D. H. Ogden, Alpine P. O., California; Diablo Stock Farm, Danville, California; Glendale Stock Farm, Aspen, Colorado; Wm. Briggs & Son, Dixon, California.

Shorthorn cattle. Diersson & Vaughn, Sacramento; Maxwell-Miller Co., Steamboat Springs, Colorado; Easton & Ward, Diablo.

Guernsey cattle. A. B. Humphrey, Escalon; Hollow Hill Farm, Colton.

Hampshire swine. Tarzana Ranch, Van Nuys; Josh L. Wilson, Jr., Laramanda Park; Carl G. Meinois, Ojai.

Poland-China swine. Viola L. Renwick, Santa Barbara; Chas. Wm. Cooper, Rivera; J. L. Hall, Lomita; J. L. Dunlap, Pomona; Charles Mull, Downey; Orison D. Bragg, Los Angeles; Bruce White, Downey; Byrum Zinn, Los Angeles.

Duroc-Jersey swine. Mrs. R. E. Whitley, Van Nuys; Chester Irish, Norwalk; Winsor Ranch, Bonita; Conejo Ranch, Newbury Park; J. E. Thorp, Lockeford; D. H. Pores, Van Nuys; E. F. Meyers, Lankershim; Hewitt Bros., Van Nuys; G. E. Gordon, Los Angeles; F. E. Lewis, Spadra; Lloyd Ruether, Hynes; Gordon White, Willowbrook; Alton Price, Artesia; Errell Ryon, Watts; Ira Fuller, Gardena; Duke Ruether, Hynes; Harold West, Artesia; Cecil French, Artesia.

Berkshire swine. A. B. Humphrey, Escalon.

Holstein cattle. Anita M. Baldwin, Santa Anita Rancho; J. J. Jeffries, Burbank; George Junior Republic, Chino; A. J. and E. R. Stalder, Riverside; Burr Farm, Los Angeles.

Jersey cattle. J. E. Thorp, Lockeford; Grant A. Brown, El Monte.

Toggenburg goats. Mrs. L. O. Rhodes, Pasadena.

Anglo-Nubian goats. Emma Kraft, Los Angeles; Belle F. Miller, La Crescenta.

Saanen goats. H. F. and L. I. Schinker, Eagle Rock.

Mules. R. C. Foote and W. M. Delano, Artesia.

Horses. Anita M. Baldwin, Santa Anita Ranch; R. L. English, Chino; Maude Banks, Covina; Fred Bixby, Long Beach.

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POMONA, CAL.

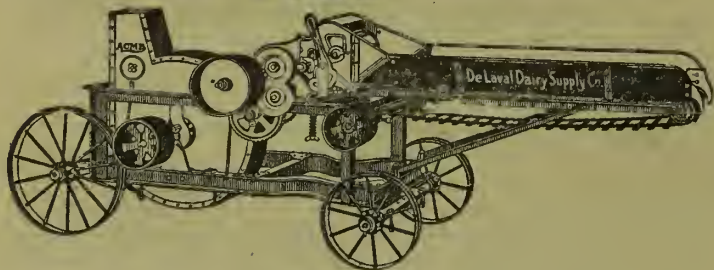
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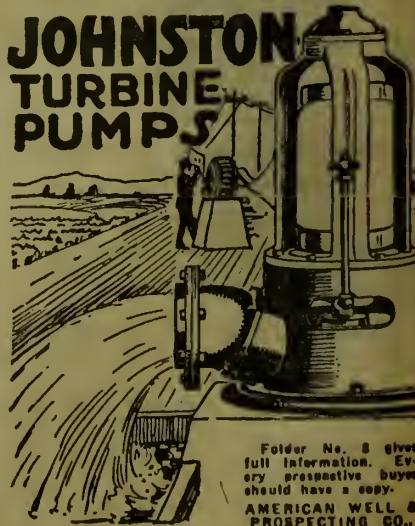
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FORAY UPON CATTLE BRINGS RESULTS

By A. L. Spellmeyer



DISINTERESTED and acute observer has just returned from the Imperial district. He is not a cattleman but is a real estate man who has vision and knows that farmer prosperity means city prosperity and that farmers' profits must come from livestock to a great extent.

He reports that Imperial stockmen are angry with killers and that the beef end of the business has been virtually ruined, but that there is a quiet elation now prevalent with steers highly estimated. In fact, the Imperial men who have the cattle and feed are chuckling in anticipation of what is going to happen this winter. There are unmistakable signs of panic among the killers who don't know where they are going to get their beef after awhile and are just beginning to realize what they have done to supply with their confiscatory tactics of continual loss to producers. Great acreage has been put into cotton until it is difficult to find feed for even the local dairy stock at any low price.

With ruthless certainty and inevitable progress the common economic laws are working out; results are commencing to show. The great cotton acreage means surplus cottonseed. From this cottonseed oil is extracted, but the hulls and part of the meal must find the only possible outlet, to fatten beef cattle. The alfalfa being cut down cuts down stock numbers, but increase of concentrates demands mature steers to feed, which are not here. Two things are sure in Southern California: one that this will be a great cotton manufacturing and tire manufacturing center, and another that it will be a great beef feeding point for the entire Southwest, with surplus going to the Middle western markets. Each day that passes makes certain that a stockyards or some sort of exchange will develop from this surplus here of hulls and meal for cattle and the further certainty that with high freight rates it is cheaper to transport beef live weight or in refrigerator cars than to ship feed to cattle.

There isn't anything complicated about all this, and the big bluff by the packer or the sage opinions of some cattle buyer as to great cattle surplus and cheap stock, etc., all may be swallowed by receptive countrymen, but that doesn't affect facts finally.

The plain fact is that Los Angeles kills about a quarter of a million cattle and calves yearly for beef, that San Francisco does likewise, and that the balance of the state adds more and the total Coast kill reaches up towards the million mark.

Where are they coming from? California hasn't them, neither has Arizona, New Mexico, Utah or Nevada. The East is going to fight hard for the few in Montana, Wyoming and Texas.

We note a \$17.50 top price in Chicago, but everyone expects 25 cents before winter is over, and what is far more than the top price for a few head will be the higher price of a probable 15 to 18 cents for the average fat beef steer before 1921 is very old.

LIVESTOCK MARKET TERMS APPLIED TO HOGS

"Top" is the day's extreme high price for carload lots.

"Bulk" is a term meaning the preponderance of sales for the day or period.

"Dockage" is a specified weight deducted from sows and stags originally used for breeding purposes which are coarse and rough—on sows dockage is 40 pounds.

"Prime heavy," hogs weighing 300 to 400 pounds, prime condition, form and quality. Usually ten months to 18 months and are heavier as well as older than the majority of the hogs marketed.

"Medium heavy," good hogs weighing 240 to 300 pounds. Both the prime heavy and medium heavy hog depends largely for outlet upon the packer. Most popular in fall and winter.

"Butcher hogs," most popular class on this market. Must be of right weight for the butcher block, from 190

to 220 pounds in most cases (although at times lighter or heavier), of good quality and proper condition. Nothing grading less than a good hog has a place in this class.

"Shipping hog": Shipper is a hog of good form, condition and quality used to supply order trade. The requirements vary, but for the most part call for animals weighing 175 to 200 pounds.

"Lights" are hogs weighing 160 to 190 pounds, consisting principally of young light weight barrows or clear sows. Graded good, common and inferior.

"Light lights" weigh from 130 to 160 pounds; graded good, common and inferior.

"Pigs" are graded as choice, good and common, and are subdivided as follows: Strong weights, 130 to 150 pounds; medium, 110 to 125 pounds; light, 90 to 110 pounds.

"Peweese," young small pigs from 60 to 80 pounds. Usually sell at a considerably lower figure than the heavier pigs.

"Roasters" are pigs weighing 15 to 40 pounds. They are rarely seen, except around Thanksgiving or Christmas.

"Roughs" are throwouts too common to grade, lack condition, form and quality.

"Stags" are male hogs castrated after maturity. As they are wasteful in

dressing, a dockage of 70 pounds is imposed.

"Boars are not usually marketed until their days of service are over and are therefore old and coarse. As most stockmen have found from experience that it does not pay to send in boars, very few of them come to market. They sell at a much lower price than stags.

"Mixed packers": This class involves the heavy hogs that do not have the quality to grade as prime stock and the lighter weights that are not good enough for butchers or shippers. In short, it takes in all of the throwouts of the aforementioned classes, except those too coarse.

"Singer": A hog of narrow back and straight belly, particularly used for its lean bacon. Weight 160 to 200 pounds largely, although there is no standard weight. Must be of good quality, not necessarily fat. Popular in Canada and England, but not common in this country.—National Livestock Exchange.

Lanini Bros., near Fresno, will hold auction sale this week, Thursday, September 16, of their dairy herd. The herd comprises 105 head and is a very uniform bunch, the foundation stock being obtained from the Helm and Vogel herds of Fresno. Rhoades & Rhoades of Los Angeles will conduct the sale.

GLENN COUNTY FARM BUREAU DATES

Jacinto, September 16; Codora, 13; Capay, 15; Plaza, 17; Willows, 20; Grapevine, 22; Larkin, 24. Directors, Willows, 1:30 p. m., 25.

Meetings at 8:15. No meeting in Elk Creek, because of Glenn County fair.

Subjects for month: Annual meeting, seed selection, county fair, agricultural clubs.

In the campaign which Antioch is making to secure return of waters to the Sacramento it asserts that delta lands are reduced one-third in value because of shortage.

40 Cords a Day

Easily Saved by One Man with new OTTAWA. Get your own fuel at less than 2c a cord, then supply big demand for fire wood at \$20 a cord up. Beat the Coal Shortage!

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ONE OF THE WORLD'S GREATEST DAMS



GERBEN ABBEKERK MAID

In the Kingdom of Farm Animals there is an occasional great female who stands out as an extraordinary dam; who possesses outstanding individual excellence herself and who demonstrates in a marked degree the power to transmit her excellent qualities to her descendants.

GERBEN ABBEKERK MAID, the famous registered Holstein cow owned at Rosamaines Rancho, unquestionably ranks as one of the world's great dams, and here are a few of the reasons why: Although now only nine years old she is the dam of nine living daughters and sons, six daughters and three sons; she has three times produced over 30 pounds butter in 7 days on official test, twice over 34 pounds in 7 days; she has three official record daughters; she has a proven son who ranks among the best of the younger sires of the breed; and as her descendants are all young, her real worth as a dam has only begun to be demonstrated; and get this—THERE ARE 105 DAUGHTERS, SONS, GRANDDAUGHTERS, GRANDSONS, GREAT GRANDDAUGHTERS, AND GREAT GRANDSONS, of this wonderful cow in the herd at Rosamaines Rancho, every one of which will be sold in the

Mammoth Dispersal Sale
Rosamaines Rancho, Owned by A. J. and F. W. Stalder
Riverside, Cal., October 19-20-21

OCTOBER 19.—The Rancho itself will be sold to the highest bidder. The offering will be made in two parcels, 235 acres with the buildings, and 397½ acres without buildings. Liberal terms will be given on both parcels, as will appear in later announcements. On the same day we will sell 50 registered Duroc-Jersey hogs; 18 registered Percheron stallions and mares; 2000 White Leghorn hens and pullets; small herd of grade dairy cows; all of the ranch implements and equipment.

Auctioneers:
Rhoades & Rhoades
Los Angeles

OCTOBER 20-21.—We will make a complete dispersal of the splendid herd of registered Holsteins, 150 head, including the two high class herd bulls, KING PONTIAC NETHERLAND SEGIS 3D and SIR ORMSBY SKYLARK RAUWERD.

Watch for the announcements of this sale each week. It is positively the greatest offering ever made in a sale in the west. Write for catalog now.

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California Breeders Sales and Pedigree Company
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Help Hens Through Molting--- Put Them to Work Revived and Healthy!



LACTEIN, through its extraordinary tonic and food values, its absolute health producing virtue, is the requirement your hens need during the molting season. LACTEIN revives the hens, puts new life and industry into them—gets them through the period of rebuilding their systems quickly and efficiently. LACTEIN gives the flock the vitality that means short "lay-off" and quick "come back"—and an investment of POULTRY PROFIT. Start TODAY, if your flock is not LACTEIN-Fed.

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Hairy Peruvian Alfalfa Seed



**ARIZONA CERTIFIED
ALFALFA SEED**

This certifies that the alfalfa field of *Morton*

located in *Yuma Valley* has been examined by me in cooperation with other representatives of the Arizona Experiment Station and that this field is commercially pure **Hairy Peruvian**

No warranty is given as to identity, purity or viability of this seed.

J. W. Longstreth
County Agricultural Agent,
Yuma.

Fancy. From Certified Fields Only.
Each Sack Branded, Tagged and Sealed

Yuma Valley alfalfa seed is noted for its quality. PURITY FIRST.

The crop this year is short, less than half normal.

Order from your dealer or from us.

\$44.00 per cwt., f. o. b.

Ton lots. Special price on request.

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OUR WAREHOUSE

From our warehouse
TO THE PURCHASER

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Yuma, Ariz.

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when they are fed according to NATURE. This means balanced rations. COPRO not only makes better layers but reduces the cost of feeding as well.



contains 16.4% Protein, practically all feasible. It is likewise high in percentage of "fat".

Laying hens are profitable. Balance their rations with COPRO and watch the RESULTS.

FREE SAMPLE and a copy of our booklet containing valuable information on the subject of "Successful Feeding" gladly sent on request. Write today.

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When Writing Advertisers Mention California Cultivator

PETALUMA, THE POULTRY CAPITAL

(Continued from page 317)

more than 50 per cent of all the eggs shipped to the San Francisco market, and with its selling connections in all the principal egg markets of the country enables the producer to secure full market value for his products. The association maintains at Petaluma the largest egg packing warehouse, in the world, where eggs are prepared for shipment to all parts of the world. In 1918 the association handled 263,532 cases of eggs, or 660 carloads, valued at \$2,500,000, many of these eggs going to Eastern markets in competition with other egg centers of the country.

While a number of the chicken ranchers prefer to set their own eggs, the great majority of them purchase their chicks from the commercial hatcheries, of which there are eight large and 20 small ones at Petaluma. The largest of these hatcheries has a capacity of 250,000 chicks every three weeks and an annual output of over two million. The majority of the chicks hatched in these plants are sold to the nearby ranchers, but a certain number are shipped daily to all parts of the country.

One of the hatcherymen, A. E. Burke, devised a plan to successfully ship day old chicks to distant points in paper cartons, and his scheme has been adopted by other concerns until today a steady stream of chicks who "haven't scratched yet" go out from the express offices of the district. As newly born chicks go for 72 hours before receiving food or water (being sustained by the yolk of the egg that enters the abdominal cavity), it has been found that they can be shipped at this time without hardship.

The majority of the chickens raised in the Petaluma district is of the White Leghorn variety, because it lays large white eggs and produces a maximum number of eggs annually. The average Sonoma County hen is supposed to lay at least 100 eggs a year to be considered profitable, and many growers secure a larger production. While the method of handling the hens is very much the same throughout the district, a wide range is encountered in the feeding plans of the owners. Nearly every rancher is constantly experimenting with different combinations of feeds to increase or sustain egg production, and often adjoining chicken farms will use entirely different methods of feeding. Every known device for determining the individual records of hens, such as using trap nests, etc., are found in the district, and when a hen shows that she is loafing on the job her laying days are over and she becomes the "piece de resistance" for some city feast.

To exemplify the difference of opinion that exists among the producers in the matter of feeding, the following quotation is taken from a letter of one of the younger, but very successful, egg producers of the district:

"Regarding schedules of feeding, there is a vast difference of opinion. Some people have been feeding the same as they did ten years ago (the old timers); others, like myself, are using greatly improved methods. For instance, I always feed a dry mash and for a grain feed use equal parts cracked yellow corn, milo maize and 30 per cent hulled oats. Most of my neighbors think that I am insane when I feed yellow corn during the summer months, but nevertheless we are having wonderful success."

A number of large factories for the manufacture of poultry appliances are located at Petaluma, and the incubators, brooders and other accessories for poultry raising are made in Petaluma and shipped to all parts of the world. One of the largest manufacturers of these appliances, and the inventor of the first successful incubator, has the distinction of being the founder of the poultry industry at Petaluma.

In 1878 L. C. Byce came to Petaluma from his home in Canada because his health demanded that he live in a more favorable climate. When but 12 years old Mr. Byce had discovered some new born chicks hatched by the heat of a manure pile alongside his father's stables, and from that time on he devoted his spare time to inventing a commercial incubator. Through the years that followed his youthful discovery, the young man worked on his invention, and when he arrived in California he had almost

perfected it. To enable him to experiment with his machine, Mr. Byce sought to purchase some chickens in Petaluma, but was unsuccessful, and he states that before he could secure the three dozen hens he required it was necessary for him to travel with a team and wagon over nearly all of Sonoma County to meet his needs. Later on, to meet his increased needs for chickens, Mr. Byce had to send East for hens, and it was his flock that formed the nucleus for the multitudes of chickens—now over 6,000,000 laying hens—that are found in the vicinity of Petaluma. Mr. Byce, after perfecting his incubator, started their manufacture at Petaluma, and from an humble beginning his plant has been developed to a point where thousands of machines are shipped annually to all parts of the world.

Poultry Queries

Conducted by J. A. Koethen

Featherless Chicks

Why do some of my young chickens become featherless while others in the same brooder feather out normally?—Subscriber, Long Beach.

Two reasons are assigned for failure to feather out normally; overheating in the brooder and weakness in the chick. The ration has no doubt also something to do with the growth of feathers though its effects are not always apparent. Feather growth requires protein. This is one reason why bran is such an important ingredient of the chick mash and why the mash should contain a larger per cent of animal protein than that of laying fowls. One of the best mashes for growing chicks is the Cornell mash, which consists of equal parts by weight of bran, corn meal, middlings and beef scrap, with one-third part bone meal added. It is for you to find out which of these causes is responsible for the failure of your chicks to feather as they should, and



"Pride of Petaluma" and Her Happy Family

THE PRIDE OF PETALUMA TRIPLE CONE VENTILATING BROODER STOVE HAS A DIRECT OIL BURNER, NO WICK, Burns Coal OIL or DISTILLATE with PERFECT SATISFACTION. Automatic REGULATOR Controls the Flow of Oil. This Stove is so constructed that the heat is evenly Distributed over the FLOOR where the BABY CHICKS MUST have it.

THESE STOVES are built in THREE sizes, 2-B, 4-B and 12-A.

THE KRESKY STOVES are built up to a STANDARD and NOT down to a PRICE.

Capacity, 500 to 1500.
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Petaluma, Cal.

FOR GREATER EGG PRODUCTION
FEED
COULSON'S EGG FOOD
FULL PARTICULARS IN OUR FREE BOOK
"CHICKENS FROM SHELL TO MARKET"
Coulson Co.
PETALUMA, CAL.

to remedy it. A few poorly feathered chicks in a brood need cause no concern, for there are always some that are behind the rest in vigor, but if many fall to feather out properly it points to overheating, overcrowding, which amounts to the same thing, or lack of protein in the ration.

Chicken Ticks

Can you suggest a way to free young chickens from ticks? I have cleaned the house but I notice these ticks when dressing the chickens.—E. M. H., Paradise.

I think vaseline, either the plain white or the carbolated, applied liberally to the ticks two or three times a day will kill them by smothering. I know it kills sticktight fleas, and I see no reason why it should not have the same effect on ticks.

Digestive Trouble

What is the matter with my chickens and turkeys? In May they began running off at the bowels. Some of them finally recovered, but on May 15 one of my seven months' old pullets got so she could not walk. She acted as if her feet were sore or her back was broken, would just hobble along and flap her wings. She has been that way now for three months.

My young chickens are stuffy in the nose and have a rattle in the throat. What ails them?—Subscriber, Longvale.

There must be serious errors in feeding this flock. As I am told nothing of the ration they receive I can only infer that it is not properly balanced and that possibly moldy or heated grain has been fed. As for the young birds my guess is that they have taken cold from being crowded into close quarters at night. Chicks kept under such conditions are almost certain to take cold when they come out into the chilly or foggy morning air. Get them into coops where the air is almost as fresh as out of doors, the smaller the coop the more sides it must have open to the air. Give them a chance to run on clean soil and make sure their food is clean and sweet, and you will not have much sickness.

Now, as to the ration of the older birds: The feeding of laying hens is a very simple matter. A good laying mash before them all the time, all the green they will eat once a day, preferably at noon, a mixture of hard grain at night. The mash may be one of the commercial mashes of which there are so many satisfactory ones, or it may be prepared at home from bran, corn meal and one other ground grain, with from 16 to 20 per cent beef scrap. If one has had no experience in mixing mashes it might be wiser to buy the ready mixed. The greens may be alfalfa, barley, kale, chard, lettuce, Sudan grass, cabbage, vegetable leavings from the kitchen, anything green that the hens like, only the more succulent the better. It may be lack of green feed that has upset your fowls' digestion.

The pullet that could not walk may have sustained an internal rupture, but such troubles often come from severe indigestion. If she is not on her feet by this time better kill her.

Price of Pullets

Could you give me an idea of what Buff Leghorn pullets three and four months old would be worth? Mine are from show stock, but neither they nor their parents have been shown.—Subscriber, Fresno.

It is very hard to set a price on birds that have never won ribbons. As a rule a utility price is all you can hope for, and that for pullets three and four months old is around \$1.25 or \$1.50 if they are well developed and of good color. Something depends on your market, of course. In my town it is hard to get more than \$2 for a full grown pullet, and lots of folks think they ought to get them for half that. The fact that it costs at least \$2 to raise a pullet to laying age means nothing to them. If you live among people who understand what a laying hen is worth maybe you can do a little better.

Stick-tight Fleas

Will you kindly advise the best means of getting rid of stick-tight fleas?—Subscriber, Ramona.

Vaseline rubbed on the fleas in sufficient quantity to smother them is a sure cure. This requires several ap-

POULTRYMAN'S CALENDAR—SEPTEMBER, OUR SECOND SPRING

Much of the work of September in California is work that in the East would be done in the spring. Greens and vegetables should be planted this month, houses cleaned and disinfected, and unpromising pullets sent to market.

September is none too early for the forward look to the hatching season, which begins in January or sooner. If fall hatching is contemplated brooders and brooder houses should be cleaned and made ready for use, and breeders culled if necessary.

September is also the last month for general culling of the layers. Hens that have not commenced to molt by the first of October are the best layers in the flock and should be kept another year.

Those who find it desirable to get out a few broods of chicks in September will find it fine weather for brooding and will have fryers for Christmas.

plications, but is simple and efficacious. After two or three applications you will see the dead fleas dropping from their victim.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

The ninth month, ending August 15, finds D. B. Walls of Petaluma still in the lead, but closely followed by several others. A large percentage of the hens are now in the molt, but it is hoped that many of these will come out and be laying again before the contest closes on November 15. During the month a slight change was made in the feeding. One-fifth of the grain ration is now being fed in the form of sprouted oats. This is to

stimulate appetite on the part of the molting hens.

High pens for the month were: Barker, 201 eggs; Gibson, 199; Neef, 198; Bellows, 195; Gibson, 190.

Leading pens: Walls, 1,703 eggs; Gibson, 1,663; Rose, 1,659; Bellows, 1,649; Enterprise, 1,643; Gibson, 1,607; Neef, 1,590; Peck, 1,568; Wood, 1,563; Barker, 1,562; Amsbaugh, 1,512; Wilson, 1,503.

Report for the Week Ending August 21, 1920

During the past week B. F. Rose of Santa Cruz has jumped into place again with a total count of 1,694 against R. C. Gibson's 1,691.

The high pens for the week were: Bellows, 44 eggs; Neef, 43; Gibson,

40; Barker, 39; Rose, 39; Stephenson, 37; Clark, 34; Wilson, 34.

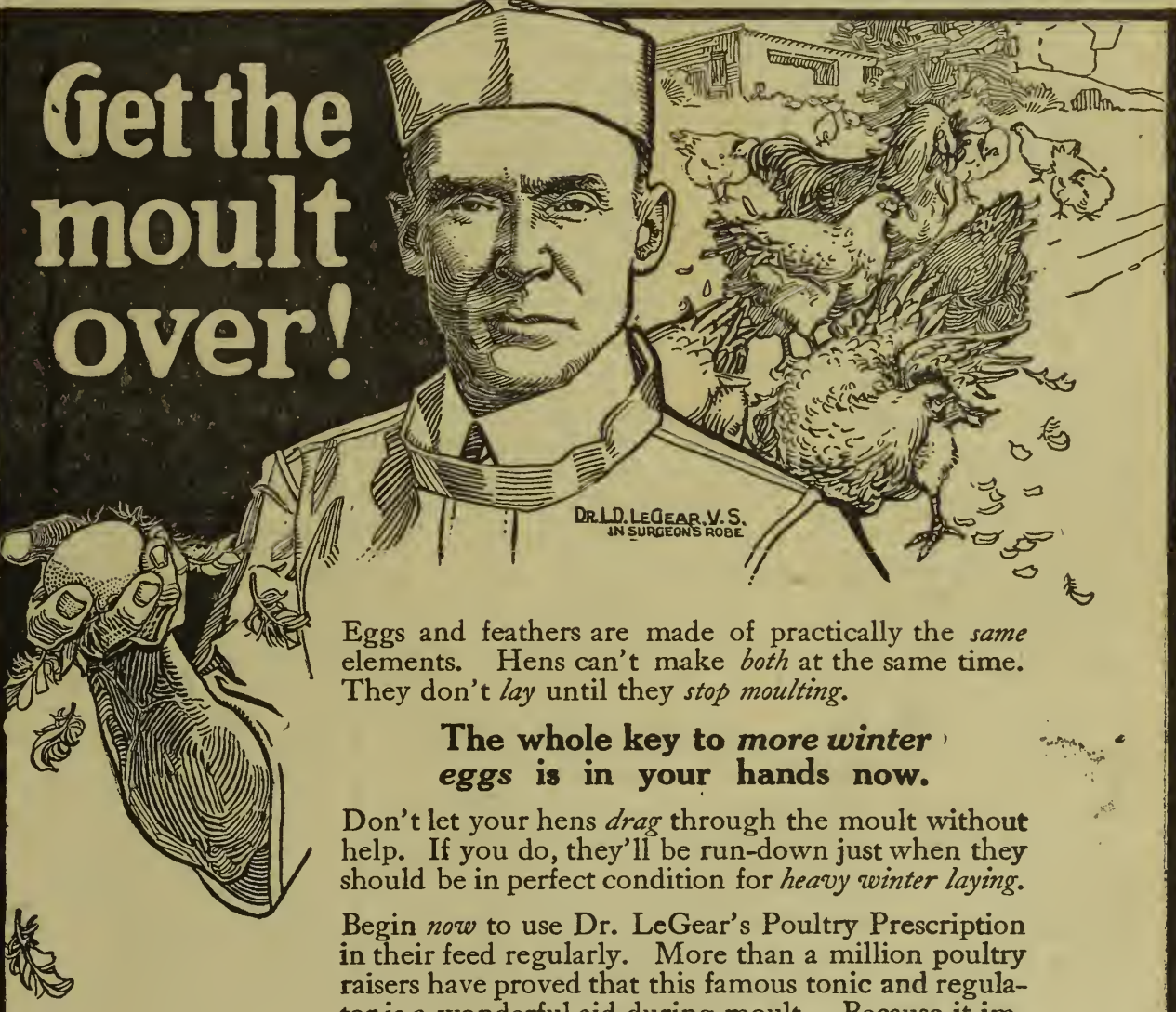
GROUND BROKEN FOR NEW CONTEST

The morning of August 21 saw ground being broken for the new California Farm Bureau Egg Laying Contest. This new plant, located on one of the choicest sites in Santa Cruz, will cost in the neighborhood of \$10,000. Geographically it is located very favorably for all of California, while climatically it embodies that mild coastal climate which has proven to be of the best for both the health and production of the hen.

Beginning with the new contest, which will start on the first day of next November, the poultry division of the state university will have entire charge of the operation, making it part of both the poultry and extension divisions of the university. It is our hope to make this work one of the biggest credits to the poultry industry of California. It will afford California an opportunity to show the world what can be done with poultry under our fine climatic conditions.

Therefore we ask the help of every progressive poultryman in the state in getting enough entries to make this work a success. Write to either Poultry Division, University of California, Davis, or to Poultry Contest Station, Santa Cruz, for rules and regulations and application blanks. Do it now!

Get the moult over!



DR. L. D. LeGEAR, V. S.
IN SURGEON'S ROBE

Eggs and feathers are made of practically the same elements. Hens can't make both at the same time. They don't lay until they stop moulting.

The whole key to more winter eggs is in your hands now.

Don't let your hens drag through the moult without help. If you do, they'll be run-down just when they should be in perfect condition for heavy winter laying.

Begin now to use Dr. LeGear's Poultry Prescription in their feed regularly. More than a million poultry raisers have proved that this famous tonic and regulator is a wonderful aid during moult. Because it improves the whole digestive system, hens get full value from their feed. That means a quicker moult, without strain. Give hens this help and get more winter eggs.

Dr. LeGear's Poultry Prescription


Prepared from my 28 years' poultry experience and veterinary practice. Sold by 44,000 dealers everywhere—never by peddlers. Go to your dealer today and get a package—results or money back.

Dr. L. D. LeGear Medicine Company, St. Louis, Mo.

Dr. LeGear's Stock Powder will make your stock pay better

Dr. LeGear's Lice Killer (powder) will rid your flock of lice

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POULTRY

Baby Chicks. We are now filling our hatcheries in preparation for the fall season which will soon be in full swing, and we can make deliveries in small or large quantities of the following kinds of chicks: R. I. Reds, Barred Rocks, White Leghorns, Brown Leghorns, Anconas, White Minorcas, Blue Andalusians and Mammoth Bronze baby turkeys. Send for our prices and place your order as early as possible so as to be sure of getting your chicks at the time you want them. Pioneer Incubators, Brooders, supplies, etc., always on hand. **PIONEER HATCHERY**, 320 S. Spring Street, Los Angeles, California.

S. C. White Leghorn Roosters for sale. In order to make room will sell 6 roosters 5 months old, \$5.00 each, and 10 roosters 18 months old, \$4.00 each. These birds are from my first class breeding pens and will make excellent breeders the coming spring. All purebred stock. **J. R. Heinrich Poultry Yards**, Arroyo Grande, California.

S. C. White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Now booking orders for this Fall and next Spring delivery. Prices and terms gladly sent on request. Hatchers and shippers of Baby Chicks since 1898. **MUST HATCH INCUBATOR COMPANY**, 438 Seventh Street, Petaluma, California.

Santa Cruz Chicks are in demand. Our hatchery will run full blast this fall, supplying Leghorns, Minorcas, Anconas, Rocks, Reds and Orpingtons. Write for folder with price list. We also offer Hydes W. L. Cockerels from Pen 1, with trapnest record 236-284. **B. W. Archibald, Soquel, Santa Cruz County, Calif.**

Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. **L. W. Clark**, 615 Main Street, Petaluma, California.

ATASCADERO POULTRY FARMS

ATASCADERO, CALIF.
S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write **Henry Miller, Supt.**

White Leghorn Baby Chicks from heavy laying HOGANIZED STOCK. Safe arrival of full count, live, strong chicks guaranteed. Price list and interesting literature on application. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Raise Fall Chicks—We will have them every week. **R. I. REDS, BARRED ROCKS, WHITE LEGHORNS.** Write for special circular. See why they pay. **Stubbe Poultry Ranch and Hatchery**, P. O. Box 67, Palo Alto.

Barred Plymouth Rocks—"Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. **Charles H. Vadden, Los Gatos, California.**

White Leghorns—Chicks, hatching eggs and breeding stock from the home of heavy layers. Fall chicks pay big. Free folder tells why. **Curtis White Leghorn Ranch**, R. 1, Box 29, Gardena, California.

Single Comb White Leghorn Chicks from our Hoganized and Trapnested stock, 100 or 1000 lots, booking orders September and October deliveries. **Forster Brothers**, 2918 Otis Street, So. Berkeley, California.

For Sale—Pullets \$2.00; Cockerels \$5.00 each and upward—White Leghorn, Brown Leghorn, White Rock, Mahajo Farm, P. O. Box 597, Sacramento, California.

Eastman's Bred-to-Lay Hoganized and Trapnested Barred Rocks, FALL CHICKS. Fairmead Poultry Farm, Fairmead, California.

White Leghorn Pullets, three to four months, \$2. Cockerels \$3. Silver Campine hens \$2.50. All fine stock. **Roy Ward**, Box 122, Deming, N. Mex.

Thoroughbred Rocks—15 years a breeder, records 210 and better. **Mrs. M. A. Warren**, 36 Little Delmas Ave., San Jose, Cal. Eggs \$2.50, 15.

Day Old Chix—Barred Rocks, R. I. Reds, Buff Orpingtons, Black Minorcas, Anconas, Buff, White and Brown Leghorns. **Enoch Crews, Seahright, California.**

Baby Chicks from selected egg type S. C. White Leghorn hens. **Tupman Poultry Farm**, Box 7-C, Ceres, California.

MISCELLANEOUS

I Have Cash Buyers for salable farms. Will deal with owners only. Give description and cash price. **Morris M. Perkins**, Columbia, Mo.

For Sale—Glass Green House. Apply **W. V. Skillman**, R. F. D. Box 387, San Fernando, Cal.

TURKEYS

Good Turkey Range—Unlimited range and feed for turkeys. Best of terms. Address **John G. McE, St. Helena, California.**
Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, S. Reservoir, Pomona, California.

GOVERNMENT LAND

300,000,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book **THE HOMESEAKER** which tells you where this land is and how to acquire it, or send \$2.00 for book direct. The Homeseaker, Dept. M, 336 S. Broadway, Los Angeles, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

CATTLE

For Sale—150 head of stock cows; 150 head small feeder hogs; one 15-30 Samson tractor; 20 head of horses and mules, some unbroken; one Jack; one pure bred Duroc-Jersey boar. Inquire **C. C. Ellis, Exeter.**

For Sale—Ayrshire Bull No. 17814, Triunes Lad of C. H. A. F., born Feb., 1914. Selling him because I need new blood in herd. Farmer's price. For particulars write **H. G. Ranch, Solvang, California**, or call at ranch to see him.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. **T. T. Miller, Hollister, California.**

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. **A. W. Morris & Sons, Woodland, California.**

For Sale—A few good purebred Guernsey bulls, reasonably priced. **Adohr Stock Farm**, 18000 Ventura Blvd., Van Nuys, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. **John Lynch Ranch**, Box 321, Petaluma.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Wineville, California. **E. R. Staider, owner.**

Registered Holstein Bulls of various ages for sale. **Millbrae Dairy**, Millbrae, California.

Reg. Shorthorns—Fair Oaks Ranch, Wilits, California.

SEEDS AND PLANTS

Since May 1st, Ranere Everbearing Raspberries have brought \$30 to \$35 per chest. Plants for fall delivery \$75 per 1000; 10¢ each. **B. Everton, R. D. A., Box 305, Mt. View, California.**

Reliable Cabbage Seeds—I grow them. You want them. Let's get together. Write me for special trial offer on just what you will need. **Isaac F. Tillingshast**, 40 Podel Street, Santa Rosa, California.

For Sale: Mellilotus Clover Seed. Order now. Get my prices. **Ketscher's Nursery**, Phone 572-W, 1101 E. Fourth Street, Santa Ana.

For Sale—Winningsstadt Cabbage Plants, immediate delivery. **E. Willard, Vignolo Station**, on Santa Ana Line near Stanton, or address **Anaheim R. No. 1.**

Pumpkin Seed—Mixed Pumpkin Seed, good germination. 25¢ per lb. **Aurora Seed Mill**, Stockton, California.

For Sale, about a million cabbage plants of different varieties. **L. C. Johnson**, Pomona.

WANTED

Wanted—Walnut Meats and Culi Walnuts. We have been in this business 15 years, solicit calls for cracking only, paying cash. **Fred L. Mitchell & Son**, 214 French Street, Santa Ana, California. Phone 551-M.

Farm Superintendent, with twenty years' experience in diversified farming, large herds purebred hogs and cattle. Reference. **Farm Superintendent, Cultivator**, Los Angeles.

Wanted—Tractor outfit in exchange for 20 acres of land near Sacramento—value \$4250. **Box C. P. D., Cultivator**, Los Angeles.

Wanted, small tractor outfit in exchange for equity of \$2000 in unimproved land near Sacramento, **Box 11, Cultivator**, Los Angeles.

Wanted—To hear from owner of land for sale. **O. K. Hawley, Baldwin**, Wisconsin.

LIVE STOCK

BUTTE CITY RANCH

Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. Next sale at Ranch, Wednesday, August 11, 1920, **W. P. Dwyer** and **W. S. Guilford**, Box C, Butte City, Glenn County, California.

Carruthers Farms—Live Oak, California. Shorthorn cattle and Berkshire swine of quality and select breeding.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. **J. J. Prendergast, Redlands.**

For Sale—Team of grade Percheron work horses. For particulars write **H. G. Ranch, Solvang, California.**

TREES

50,000 Florida Sour Stock; 100,000 California Sweet Seedling orange seed-bed stock, 15 months old, suitable for fall planting. It will pay you to plant this fall. **SOUTHLAND NURSERIES**, 1941 East Colorado Street, Pasadena, California. Phone Colorado 6352.

For Sale—Placencia Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. **Ketscher's Nursery**, 1101 E. 4th St., Santa Ana, California. Phone 572-WK.

For Sale—A few thousand Peach and Plum trees. Write for prices, grade and varieties. **Imperial Valley Nursery and Seed House**, El Centro, California.

Citrus Nurseries, **Murphy Oil Company**, East Whittier, California. Selected stock for sale; inspection invited.

Fruit Trees—Berry Plants scarce, order now. **Cash Nursery**, Sebastopol.

ROOFING MATERIALS

ROOFING PAPER
One ply \$1.50, 2 ply \$2.00, 3 ply \$2.50 complete with fixtures. Rubber roof paint 50¢ per gallon in 5 gal. lots.

ANGELUS ROOFING & PAPER CO., 766-768 So. San Pedro St., Los Angeles, Broadway 5401

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The Only Herd of English Berkshires in the west. Bigger, better, stronger litters. More pounds of meat for less feed. Weanling pig \$35. Satisfaction guaranteed or money refunded at once.

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Grape Wild Farm—Berkshires, Guernseys. Big Type Berkshire Boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion. **A. B. Humphrey, Prop., Escalon, California.**

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. **Calat Orchards, Martinez, California.**

Real Good Berkshires, cholera immune. **Frank B. Anderson**, Box 724, Sacramento, California.

DUROC-JERSEYS

DUROC-JERSEY SWINE

JUMBO SENSATION

Our new herd boar is one of the largest boars in the world for his age. We have some real buys in pure breeds.

WHITLEY

TU-TOCK-A-NU-LA RANCH
Ventura Boulevard and Hazelton Ave.
Mrs. R. E. Whitley, Mgr.
Phone 160-J Van Nuys, Calif.

Borge's Big Duroc Jersey Hogs—Herd headed by California Golden Model 3rd. A few choice females of desirable breeding for sale at very low figures. I am offering for sale the tried boar **Dos Palos Chief** (an Orion Cherry King Jr. boar). Here is an opportunity to secure a tried sire at a very low figure. Satisfaction assured. Write at once. **Jack Borge, Dos Palos, California.**

Fifty Head of Durocs, bred sows, gilts and pigs. Three boars ready for service. Five March boars, grandsons of Mary Jane Pathfinder. One sow of Orion Cherry Pathfinder out of Lambs Model Lady. Five boars out of Cherry Queen Pathfinder and sired by Lords Orion Cherry King. For information and prices write **Elmer Lamb, Ceres, California.**

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. **Harvey M. Berglund, Dixon, California.**

For Sale—6 thoroughbred Duroc Boars, 2 thoroughbred sows. Always a good stock of thoroughbred Durocs on hand. Address: **Paul Zucco, Independence, California.**

Bargains in Bred Sows and Gilts—Pathfinder and Great Wonder I Am blood. **Derryfield Farm**, Capitol National Bank Bldg., Sacramento, California.

Durocs—Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. **J. L. Stevenson, Van Nuys, California.**

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. **Hollow Hill Farm**, **B. W. Shaper, Manager**, Colton.

Winsor Ranch Durocs—Boars and bred gilts of our own and eastern breeding. Write us your needs. **Morris C. Allen, Manager**, Bonita, California.

December and March Duroc boars; Pathfinder breeding. **Sterling Smith**, Route 1, San Diego, California.

For the Best in Durocs write **June Acres Stock Farm**, Davis, California.

POLAND-CHINAS

I Would Sell My topnotcher boar by Kings Big Bone Leader; two bred sows by Long Smooth Jumbo; also spring pigs—everything big type stuff. **H. Christanson, Arlington**. Write me.

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. **J. H. Crawshaw**, Hanford, California.

The Grand Champion El Profito heads our big type Poland Chinas. Letters promptly answered. **Viola L. Renwick**, Santa Barbara, California.

Tohoqua Big-Type Polands—Young pigs to sell. **Champion big-type breeding**. **Ferguson & McKaig**, Orland, California.

MACHINERY

For Sale—Used ranch material, windmills, pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for our "Special Bargain" price list. **Demmitt Co.**, Upstairs, 120 N. Main, Los Angeles.

For Sale—Holt "65" Caterpillar Tractor, just overhauled at an expense of \$1700.00. For quick sale will make price attractive. **H. V. CARTER MOTOR CO.**, 52 Beale Street, San Francisco, California.

For Sale—International 8-16 tractor, good as new, only used 450 hours. Will demonstrate. Price right. **A. L. Stevens**, San Dimas, Phone 423.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. **Tho Kruckeberg Press**, 237-241 Court St., Los Angeles.

RABBITS

New Zealand Reds—Young stock. Reasonable prices. **Josephine Spencer**, 1915 21st St., Sacramento.

FARM LANDS FOR SALE

For Sale or Lease—400 Acres improved, 7 miles south of Tulare, \$125.00 per acre; 90 acres of alfalfa can be plowed up for cotton or grain. 160 acres improved 5 miles south of Shafter in Kern County, \$225.00 per acre, 54 acres of alfalfa can be plowed up for cotton or grain; cotton demonstration on two sides. 80 ACRES improved ½ mile from Rosedale store, Kern County, \$200 per acre, partly to cotton and corn now. Possession of either ranch this fall and if not sold soon will lease for crop shares or cash. Shallow water lift and pumping plant on each ranch and all are good land. Owner, **W. F. MARKS**, 1318 West Third Street, Los Angeles, California. Phone: 52471.

For Sale by Owner—100 Acre dairy and stock ranch in the heart of San Joaquin Valley. Land as good as the best. Improvements good. Fully equipped with stock and implements. Now producing six thousand dollars annually, which could be doubled with more labor. Plenty water; ditch water six months; electric pumping plant all the time. 60 acres alfalfa, 10 acres corn, balance scraped and ready to seed to alfalfa. Price complete \$35,000, on good terms. For particulars address owner, **Route C, Box 67, Hanford, California.**

Lakeside Orange Grove
With Splendid Buildings, \$2500

7 acres bordering beautiful 5-mile lake; 300 orange and grapefruit trees in bearing, extensive bearing vineyards; cottage worth \$2800, beautifully situated overlooking lake; good water, telephone, oak shade; other buildings; quick-action price only \$2500. Full details page 64 Strout's New Catalog Orange Grove and Other Semi-tropical Farms. Copy free. **STROUT FARM AGENCY**, 503 E. J. Wright-Calender Bldg., Los Angeles, California.

For Sale—75 Acres delta land with beach climate, \$300.00 per acre. Perfectly level rich sedimentary soil. About half now in celery. 10 or 15 acres more just cleared and being prepared for 300 sack potato crop. Balance in light willows and tule. Three miles from Watsonville, and adjoins R. R. siding. \$12,500 cash, balance 4½ years at 6%. Ask for McLean place. **Farm and Forest Realty Co.**, Watsonville, California.

For Sale—300 Acre Farm situated Santa Barbara County. All implements necessary for beans and hay, including bean thresher, Fordson tractor and plow, side delivery rake. Large house and barn, chicken house, bunk house, implement shed and well equipped shop. Soft water, modern system. Apple trees, nuts and various fruits. Owner must sell, ill health. Easy terms. Address **Alfred L. Friel, Lompoc, California.**

For Sale—Hemet Valley Fruit Ranch—10 acres Royal Apricots, 6 yrs. old. Olive trees on border. Family orchard, 4 room house, large barn and other buildings. 5 blocks south, ½ block east Public Library. Utility water and 50 shares stock Mayberry Avenue Mutual Water Company. Price \$8500.00. Incumbrance \$3200, 3 yrs. Balance cash and terms. Owner, **Roy Johnson, Hemet.**

FOR SALE AND EXCHANGE
10-20-40-60 and 80 acre ranches, rich level, plenty water; proven grape (Thompson seedless), fig and alfalfa land. Price right, easy terms.

FOR SALE
Some of the finest dairies in the state. **Chas. McNeely, Alpaugh, California.**

See Owner for 100 Acres, ten of Bartlett Pears now in bearing. Twenty-five more of just as good land which has been in grain this year. Eighty acres has hog wire fence, also cross fenced. Plenty of water, good house and barn. Garage with corrugated iron roofing. Address **Box 169, Keiseyville, California.**

For Sale—46 Acre Alfalfa Ranch, good as any in state. Part cash, balance 5 years. Ranch will pay out in five years as dairy. Will sell 60 to 75 tons alfalfa hay with ranch. You must see this place to appreciate it. Full set buildings on ranch. If interested call or write. **John Salaberry, Chowchilla, California.**

For Sale or Exchange—\$2000, 40 acres—2 acres improved orchard and vineyard house, barn, garage, pumping plant, reservoir. Rest good grazing land, in Lucerne Valley. A. Oberlin, 1035 Wal Street, Los Angeles.

Owner Will Sell equity in 5½ acre exceptionally good Valencia oranges. Best buy in choice North Whittier Heights district, good crop on trees. \$12,300. Cash required. **Box 1206, Puente, California.**

For Sale in Lake County—160 acre stock ranch, 125 acres in cultivation, house and barn, 400 fruit trees, 4 miles from town. Price \$7,500; \$3,000 down. **Box 422, Lakeport, California.**

Alpaugh Farm Lands—Any quantity Grows grain, alfalfa, or cotton. Good dairy and poultry country. Excellent water conditions. **W. A. Settle, Real Estate**, Alpaugh, California.

For Sale—Ranches, Homes, Acres, fire list. **Wilson Bros.**, Santa Cruz, California.

Irrigated Alfalfa Ranches for sale. Other crops, plenty water. **C. I. Graves**, Fallon, Nevada.

Bishop Land Co. can furnish from 5 to 1200 acres of the best land in the Valley. Address **Bishop, California.**

Fifteen Acres Best Pear Land, half pear and prunes. \$400.00 per acre. **Box 328, Lakeport, California.**

Irrigated Farms—Five acres and up. **Alex. Mordock**, Brentwood California.

SALESMEN WANTED

Men With Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write **H. Yetter**, 115 North Broadway, Los Angeles.

GOATS

Breed Your Does to Saanee, a short coated Saanen buck. Purebreds \$15.00. If kid develops horns fee returned. Grad does \$7.50. If doe kid develops horns fee returned. The guarantee is worth the fee. Does left here must be arranged for in advance. **L. C. Buhl**, West 24th Street, Upland, California.

AGRICULTURAL IMPLEMENTS

For Sale — Slightly used Power Corn sheller, 4 hole. Has bagger, self feed, cob carrier. Worth now \$850.00, will take \$290.00. ARNOTT & CO., Inc., Los Angeles

BEES PAY

Bee-keepers can obtain from the Apiary Department of the Diamond Match Co. the finest quality of Bee-Keepers' Supplies at fair prices.

The Apiary Department, which is in charge of experienced Bee-Keepers, is one of the largest of its kind in the United States and maintains a constant excellence of product and unsurpassed service.

Write for catalogue and if a beginner for Cottage Bee-Keeping, which will be promptly mailed free.

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Trees, Plants, Shrubs direct from nursery to you. For windbreaks, hedges, and beautification. WRITE FOR CATALOG, which illustrates and describes best varieties for California conditions.

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roduce big crops the first year. Small unit prices are high and sure to continue. Order your plants from us now for Fall and Spring delivery, because plants will be scarce later.

M. J. MONIZ, Berry Specialist
Sebastopol, California

THE ORNAMENTAL GARDEN FOR SEPTEMBER IN SOUTHERN CALIFORNIA

By C. B. Messenger

NE of the most glorious of all of our flowers, the iris, needs attention this month. If one has none of this flower in the garden, this is the month for securing new plants, or other roots, and if one has plants more than two years old they should be subdivided and given opportunity to make new and more vigorous growth. For best results this should be done before the end of September. Prepare ground deeply, working in manure if available, but this not too close to the roots. Better, perhaps, is an application of bone meal with a bit of dried blood. After the ground is leveled dig shallow trench and place the divided roots ten or 12 inches apart and cover rather lightly. Remember iris should not be buried too deeply. After covering flood with water so as to establish and be ready for the new seasons' growth, which will begin within a few weeks.

Tuberous rooted begonias should be given particular attention and a bit of fertilizer to push them to their full glory. But the principal work, perhaps, in garden this month is clearing the rubbish of summer's growth. The old dead stalks of Watsonias, adonis, asters, in fact, pretty nearly everything, even the goldenrod and golden glow, are now nearly ready for pulling up and adding to the compost heap. They are unsightly and make a remarkably fine addition to the garden after a year of lying in the compost heap with other rubbish, a little manure and other dirt. Likewise, divide plant Watsonias, nearly all the varieties of narcissus, ornithogalum, eschias, ixias, anemones and ranunculus and other spring bloomers.

If a new lawn is contemplated, begin on it quickly. Irrigate, let the seeds start, hoe and get ready for seeding in October. An October seedling gives the blue grass and clover a chance to get well rooted and thor-

oughly established before the Bermuda can get in. Bermuda is not a lover of cold weather and does but little growing through the winter season.

Roses which have been dried off until the new wood has begun to shrivel may now be given severe pruning. After this is finished and the brush burned, apply water, apply most liberally of fertilizer and an abundance of December bloom will reward.

AS USUAL—THE BEST EVER

(Continued from Page 315.)

tors made after plans and specifications as given by Prof. Cruess in a recent Cultivator. One was made by a schoolboy. It's a bit crude but a success in delivering the goods. Miss Clark is in charge of this exhibit.

Near by is the dairy products building and laboratory of the university. That is where 52 exhibits of milk and cream were scored which added to the fame of California dairymen. Los Angeles takes the honors. In the certified class, Adohr won first with a score of 99.2 per cent; Cold Springs second, 98.4; Arden third with 96.3.

Guaranteed milk: Brandt Rancho, 99.1; Burr Creamery, 96.7 (Burr Creamery is owned and managed entirely by cooperating dairymen).

Grade A raw: Crescent Creamery, 98.8; Mrs. L. Brant, 97.4; Liberty Dairy, 97.2.

Market milk, raw: G. A. Carter, Fresno, 96.3; C. P. Gulberg, San Leandro, 95.7; Joe Tomagni, 95.4.

Pasteurized: Crescent Creamery, 98.8; Burr Creamery, 97.5; Model Dairy, Redlands, 90.7. When no address is given all of above are Los Angeles creameries or dairies.

In guaranteed cream Brandt Rancho first, 92.9; raw cream, Crescent, 90.3; pasteurized cream, Crescent, 93.5.

But pardon me. This was to be only a word to say that a half dozen of Cultivator folks are here getting a story. I did not intend to give details, but that one item as to milk scoring indicates that Californians are drinking clean, pure and rich milk. R. J. Posson of the dairy division of the U. S. D. A. spoke most highly of the work of California dairymen.

The big central building, the main building, or "horticulture" or "agriculture"—variously named—has a fine, I might again say a wonderful, exhibit of products of this state. Judges are awarding the big money today.

The attendance is big. Today—Admission Day—the grounds are uncomfortably filled and it's only noontime.

President Roeding looks tired but says "We're satisfied."

HEARING ON COTTON QUARANTINE

The state department of agriculture finds it necessary to strengthen the quarantine against cotton boll weevil and will hold a public hearing on the matter at Room 507, Union League Building, Los Angeles, at 10 o'clock a. m., September 14, 1920, in order that any person interested in the proposed quarantine may appear and be heard.

TULARE COUNTY AGRICULTURAL SHOW

The premium book for the second annual Tulare County Livestock and Agricultural Show to be held September 14, 15, 16, 17, 18, shows that nearly every activity in the livestock, agricultural, commercial and mechanical line has been covered.

WHEAT IN URUGUAY

The United States consul reports: "In spite of the fact that the time for sowing wheat and other grains for the winter crop is yet some time off there have been more than 1,500 orders received for selected seeds by the official seed commission. These orders are scarcely exceeded by those received the entire previous year. More than 500,000 kilos (more than 1,100,000 pounds) of wheat and 400,000 kilos (880,000 pounds) of oats have already been sent to planters in the interior, these amounts exceeding all the orders received during any previous year."

50% of Your Crop Lies Under the Plow Pan



Killefer Deep Tillage Tractor Implements

Will Break Through That Plow Pan and Increase Your Yield

KILLEFER FARMERS
Don't Have Dry Years

We Will Have on Exhibition at the

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Verdugo Woodlands
near Glendale

Sept. 20 to 26, 1920

Our full Line of Deep Tillage Implements Including

Automatic Sub-soilers

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Morning Glory and Johnson Grass Destroyer
(Something New on the Market)

Tractor Chisels

We will be pleased to have you make our Exhibit your headquarters while on the grounds. We will have competent men in charge who will give you any information you may wish to know regarding our implements.

The Killefer Manufacturing Co.

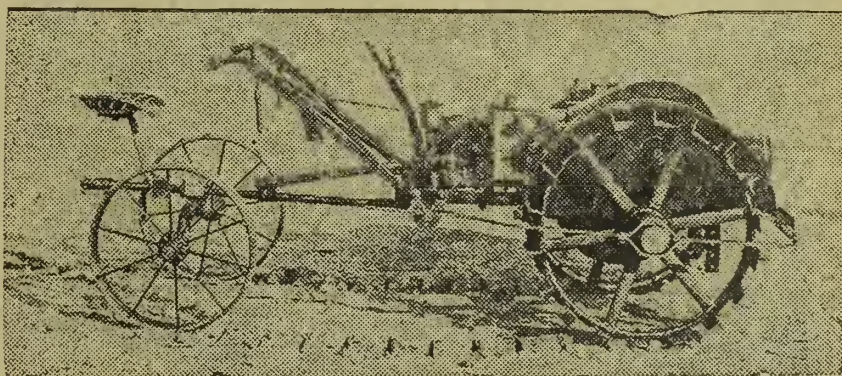
Los Angeles

California

Oldsmar Garden Tractors

Designed by R. E. Olds, the World Famous Designer

SEE US AT THE SACRAMENTO STATE FAIR
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OPERATOR DOESN'T WALK

5x5½ Motor
15-inch Clearance
30-inch Tread

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The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

Household Department

SELFISHNESS

If you can step aside and let another pass you on the way,
And watch him win the goal he seeks and have no bitter word to say;
If you can stop along the road to help another in distress,
And never count the time you spend as lost unto your own success;
Then, spite of all that may befall of Failure's frown or Fortune's smile,
You've reached the height of manhood here and learned to make your life worth while.

The clutch of selfishness is strong; men wish to gain before they give;
When we are living at our best we grant another's right to live.
But few of us will bear the blows and face the tempest and the storm,
And shiver with the winter's cold, to keep a fellow-being warm;
And few of us will step aside to help, by deed or kindly speech,
Another man unto the goal which he is striving hard to reach.

If you can step aside and lose your own brief moment to succeed,
And let its fame and fortune go to help another man in need,
Can see your dreams of glory fade and never stop to count the cost,
And hold the cause which you have served more pressing than the goal you've lost,
You've reached the height of manhood here, and many prayers your life shall bless,
And you shall stand before your God as one who conquered selfishness.
—Edgar A. Guest.

THE RUBY KEY

By Clara Peterson

PRINCESS DORIS of Deeland was very angry and her blue eyes flashed. She was fifteen and a half years old and had reigned for a decade, but at last her wishes were being crossed.

"I love him!" she cried to the Prime Minister. "I am sure I love him; perhaps not as he loves me, but better than anyone I know. I do not ask to marry him at once. All I request is the key to my own heart."

The Minister spoke soothingly, stroking his beard.

"I understand your wish. No doubt the Prince of Panillac does love you and realize that your love will never be safely his until you have looked into your heart and given him the key, but this key I cannot turn over to you until your sixteenth birthday. It was your father's last request. The King's life was not a happy one and he wished his daughter to be heart whole and care free as long as possible. He could not foresee that you would meet this prince and consider yourself in love while yet your heart was locked."

The Princess pouted, but she was as wise as she was cold and she knew that the Minister spoke the truth.

"I shall not ask again," she said proudly. "Be ready on my sixteenth birthday to hand me the key."

The Prime Minister bowed and withdrew.

Now the palace of the Princess of Deeland was a most wonderful place. King Maladin had been a collector of rare and beautiful birds and the conservatories were filled with them. There were rooms full of paintings and curios so wonderful that even the servants never tired of gazing. Perhaps this was why so little work was done in the palace.

Most of these servants were blonde, sedate people who moved languidly. They were always busy when anyone was watching—brushing tapestries, polishing the gold of the chairs and sweeping the costly rugs—but there was one little servant who really worked. Her name was Nanette and she was the oddest looking person in all the palace. She was slim, and very dark with tangles of black hair and bright brown eyes that peeped timidly at the young duchesses and peers.

Nanette still wore the dress she had had on when she reached the palace. All the other servants donned uniforms of fine linen, but they fought so over them, each trying to get the best, that Nanette never even tried to obtain one, but wore her black dress without a complaint and washed and dried it while the others slept.

It was she who dug into all the corners and swept up the dirt that had collected for weeks and weeks. She picked up the rugs and shook and beat them as hard as she could. She cleaned the backs of the chairs and the walls behind the paintings.

The other servants began to scorn Nanette and finally the younger people of the court noticed it also. Perhaps her industry shamed them. At any rate, Arabella, a young countess with yards and yards of red gold hair, called her friends together and said haughtily:

"I shall ask the Princess to get rid of this funny little maid who is always scampering about like a rabbit. Whenever I pass her, she stares at me with her big brown eyes until I feel creepy. She is of little use anyway, always cleaning the places that do not show. Let us go now and ask the Princess to send her away."

The others were in accord with this. "She looks so out of place!" cried little Lady Lillian, arising and adjusting the emerald ornaments upon her bodice. "When we have an afternoon tea or even a party there is her black dress flying about. It spoils everything."

They all ran toward the Princess' room. It was really quite a favor to ask, for in Deeland servants were difficult to obtain.

Now little Nanette had been cleaning a particularly dark and dirty corner in the red room and she had heard everything that was said. She still sat there, a miserable little heap, for she wanted to stay in the palace more than anything else in the world. She had worked very hard and she was lonely, but she was near the one person she loved, the gardener's son Orin, who was busy all day about the spacious grounds. To be sure, he had never even spoken to Nanette, but she often peeped between the pillars of the balconies as she cleaned, and watched the tall young fellow trim the rose trees or cut the thick grass upon the terraces.

Nanette had peered through a hole in the palace hedge when she was only a child selling apples in the street. She had seen the sunny haired Orin and fallen in love, and she had straightway found a situation in the palace, not with any hope of winning him, but just to be near. In two years she had accomplished nothing except that the palace corners were very much cleaner.

Nanette thought of all this as the young people trooped past on their way to the Princess. They found Doris languidly feeding sugar to the rainbow tinted birds in her room, and the Countess stated her wish at once.

"Certainly," replied the Princess. "If you desire it, the little maid shall be dismissed. I myself have never noticed her. Speak to the house master about it and do not bother me again."

She turned to the tiny tumbler pigeon upon her finger and caressed it. The callers, somewhat subdued, started for the door, but suddenly the Princess commanded:

"Stay! Let me see this maid who is the cause of your displeasure. I am curious."

Nanette was brought into the boudoir. She looked more forlorn than ever. Her eyes were red and she was trying hard to keep from weeping. The Princess stared at her.

"What are your duties?" she asked. Nanette dried her eyes.

"Your Highness," she said, "I am not of much use, for I only clean the corners and under the rugs, but I love this place." Her lips trembled.

The Princess opened her eyes with surprise.

"You love the palace!" she exclaimed. "And yet you do nothing but sweep and clean. That is indeed a wonder! I had thought of dismissing you. Would you like to stay?"

"Oh, Your Highness, yes!" cried Nanette.

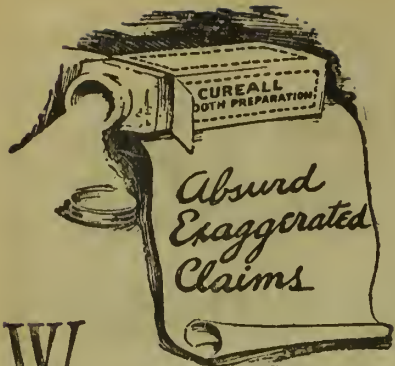
The Princess motioned her disappointed friends from the room and went to a great chest of rosewood and silver.

"Here is a plain white dress of my own. You may wear it so as not to displease the court, though it was indeed a small matter which worried them."

Nanette knelt before her mistress and took the filmy gown.

"I thank you," she murmured. "But it is so fine. I shall make my black dress into an apron to wear over it."

"As you like," answered the Prin-



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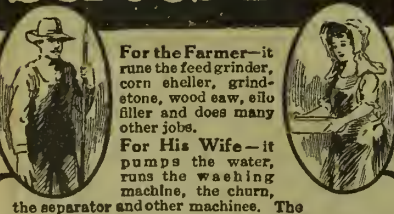
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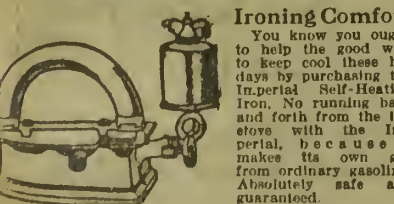
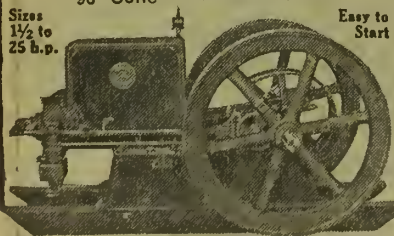
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3313. A Simple House Dress—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size requires 6 1/2 yards of 27 inch material. The width of the skirt at lower edge, with plaits extended is 2 1/4 yards. Price 10 cents.

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3323. Girl's Dress—Cut in five sizes: 2, 4, 6, 8 and 10 years. A 6 year size will require 3 1/4 yards of 27 inch material. Price 10 cents.

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cess, indifferently. "Now leave me."

After that Nanette went singing about her work. She finished cleaning one great room after another. While the other servants switched feather dusters or mopped the centers of the marble floors, Nanette cleaned behind the great pianos and lifted the rugs. The rooms shone as she left them and moved on down the corridors. When she reached one she had never seen before, Nanette was often tempted to stop and examine the beautiful things, but the sight of the dust always set her to scrubbing harder than ever.

One day, however, as she was cleaning the windows of a room filled with pictured silken tapestries, Nanette chanced to look below. There, standing in the sun, was Orin, pruning a small plum tree. Nanette's heart fluttered. She untied the strings of her black apron.

"I wonder whether he would notice me," she thought breathlessly, and stepped out upon the balcony.

At that moment Orin looked up. The white dress was so fine and dazzling that for a moment he thought it was one of the court ladies and turned his head, but as he did so he caught sight of Nanette's snarl of curls.

"Ah!" said Orin to himself. "It is the little maid I have sometimes seen hurrying about. I wonder whether she does all the work of the palace. How beautifully that white dress becomes her. I had no idea her eyes were so velvety."

He turned and smiled at Nanette. Her face flushed rosy red and she fled back through the window, but all the rest of the day there was a smile about her mouth.

"I shall clean every room in the palace," she thought eagerly. "I shall do everything I can for the Princess. Had it not been for this gown he might never have noticed me."

(To be Continued.)

HINTS FOR HOUSEKEEPERS

Mango Sweet Pickles

Whole green peppers, any amount you like, 3 measures chopped cabbage, 1 measure chopped onions, 2 measures chopped green tomatoes, 1/4 measure chopped red and green peppers. Salt and pepper and ground spices to your taste.

Take any number of green mangos you like. If of the hot variety soak them over night in salt water, cut the stem end off so as to reserve for a cover to each one. Remove the seeds at the same time. Slice some green tomatoes and soak in salt water. In the morning chop or run through the food chopper the tomatoes, onions, a small amount of red peppers and a few green ones and the spices and salt. Mix all together and add enough good vinegar to make moist, sweeten to suit your taste and cook until tender. Fill your whole peppers and fasten the tops on with toothpicks. Then put in a granite pan or kettle—I like a large dishpan best—set in closely but do not pile up, then put enough weak vinegar on them to cook the peppers. Cook until they are tender but not too tender so that they will break or mash in handling. Pack them in jar. Take some good vinegar—to every quart use one cup of sugar and some whole spices (the mixed ones are good)—bring to the boiling point and pour over the peppers. Then put a plate or something on them to weigh them under the vinegar. Be sure there is enough to cover them, then cover tightly and keep in a cool place. These keep all winter and are fine with meat.

I use the term "measure," so you can make any amount you like. I am a subscriber to your paper and will say that we all enjoy reading it and find many helpful suggestions.—Mrs. F. A. Rieman, Fresno.

Add Sugar, Salt and Vinegar to Canned Green Beans

In looking over the California Cultivator, August 14, I see where a subscriber asks for recipe for canning green beans, so I am sending mine, which I have used for three years and have found a simple, quick and easy way. I have never lost a jar of beans canned by this recipe, and others who have tried it like it very much.

To 1/2 gallon fresh string beans add 1/2 cup vinegar, 2 level tablespoons salt, 2 level tablespoons sugar. Add water to cover beans and boil 20 min-

utes after they come to a boil. Seal while hot. In winter I pour off all the water and cook as fresh string beans.

We all enjoy reading the Cultivator each week, and I have received many useful articles from it.—S. G. B.

Good Cake—Graham Bread

I am sending you a cake recipe that I have used for 20 years. It is a "never fail me" sort and makes a good sized loaf.

1 1/2 cups flour, 1/2 cup butter, 1 1/2 cups sugar, 1 cup eggs, 1/2 teaspoon baking powder. Work butter in flour, beat sugar and eggs together with light. Add gradually to flour and butter. Flavor with one teaspoon of lemon and add baking powder. Bake nearly one hour slowly.—A. B. S.

Good graham bread: 2 cups graham flour, 1 1/2 cups white flour, 1/2 cup corn meal, 2 cups sour milk, 1/2 cup sugar, 1 level teaspoon soda, 1 good teaspoon baking powder, 1 teaspoon salt. Prepare by mixing ingredients together and bake in slow oven for about three-fourths of an hour.—A. B. S., Turlock.

Raisin Pie

Beat together one cup sugar and the yolks of three eggs until very light and creamy, add one cup sour cream, one cup seeded raisins, one cup chopped walnuts and a little salt. Mix together. Then fold in the well beaten whites of the three eggs, add one-half teaspoon vanilla and one-half teaspoon lemon extract. Bake with one crust.—Mrs. Erick Johnson, Kingsburg.

Lemon Pie and Eggless Cake

Lemon Pie.—I am sending a lemon pie recipe. We think it the best ever: Three eggs (saving white of one for meringue), one cup sugar, juice of large lemon, one heaping tablespoon flour in large teacup, add just enough cold water to rub smooth, and finish filling cup with boiling water, stirring all the time. Add this to egg, etc., and put in unbaked crust and bake until filling is firm, then cover with meringue made of beaten white of third egg with one tablespoon sugar added. Put in oven and brown.

An eggless cake: One cup sugar, one heaping tablespoon any kind of shortening. Cream with the hands. Add one cup sour milk, six tablespoons cocoa, two cups flour, pinch salt, teaspoon vanilla. Beat hard and bake in loaf.

Frosting: One cup powdered sugar, one tablespoon cold coffee, teaspoon vanilla and just enough milk or cream to work smooth. Beat well and spread on cake. I leave cake in tin and cut as we use it.—Mrs. W. E. Brown, Calipatria.

Candied Figs

Soak four pounds ripe figs in water to cover one-half hour with one tablespoon baking soda, then wash and dry. Make syrup of one cup water, two cups sugar. Put figs carefully in hot syrup and boil slowly for one hour. Let stand over night and boil one hour more, then take figs out with fork and press flat on platter to dry in sun. These are fine.—R. R. Baxter, Los Angeles.

Stewed Okra

Many people use okra only with tomatoes or in chicken "gumbo," but we are very fond of it cooked by itself. Wash pods, cut off stem ends, slice and drop in kettle in a little sizzling fat—butter's best—put cover on kettle and steam on moderate fire as long as you dare, then add a little boiling water, salt to taste and cook till tender, which will take only 10 to 15 minutes if the okra pods are freshly picked.—Subscriber, Los Angeles.

TIMES HAD IMPROVED

William, aged five, had asked his mother for a second piece of pie at dinner.

"When I was your size," said his father reprovingly, "my mother allowed me to have only one piece of pie."

"Say, papa," rejoined the little fellow, "aren't you glad you board with us now?"



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Los Angeles Markets

Los Angeles, September 8, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 69 cents.

Dairy Exchange price last week on extras:

Sept.	1	2	3	4	6	7
'20	69	69	..	..	..	69

CHEESE

Brokers' prices:

California flats, 30@32 per lb.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 63 per dozen; case count Prod. Exch. closing price 62 per dozen; pullets, Produce Exchange closing price 55 per dozen; pewee pullets, 41

Dairy Exchange prices last week on extras:

Sept.	1	2	3	4	6	7
'20	61	61	..	..	..	63

POULTRY

Price to consumers: Hens, lt., 25; heavy, 28; colored, 32; broilers, 31@34; roasters, 38; old roosters, 14; fryers, 32; ducks, old, 17; ducklings, Pekin, 3½ up, 20; others, 17; geese, 25; turkeys, live, young tom, 44; dr., 50; old live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47. Belgian hares, live, 15@19; old, 9.

LIVESTOCK

Los Angeles, Sept. 7.—Weighed and delivered off cars without food or water: Hogs (hard-grain): 125 to 175 lbs., 16.50; 175 to 225 lbs., 17.50.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

HIDES

Milwaukee, Sept. 7.—Hides: Green, No. 1, according to weight, 12@15; No. 2, 11@14; green No. 1 bull hides, 9@11; No. 2, 8@10; part cured hides, No. 1, other grades in proportion, 14@16; cured No. 1 hides, 25 pounds and up, according to weight, 15@18; No. 2, 14@17; cured No. 1 bull hides, 13@15; No. 2, 12@14; dry salted hides, 19@24; No. 2, 17@21; dry flint hides, 25@30; No. 2, 23@27.

Horse hides, No. 1, according to size, 5.00@7.00.

Calf skins, G. S. No. 1 veals, 8 to 15 pounds, 20@22; No. 2, 5 to 15 pounds, 18½@20½. Deacons, G. S. No. 1, 8 pounds and down, per piece, 1.25@1.50; No. 2, 1.00@1.25; kips, G. S. No. 1 veals, 18-20; No. 2 16½@18½; G. S. No. 1 grasser or fall, 16@18; No. 2, 14½@16½; G. S. No. 1 runner, 14@16; No. 2, 14½@16; dry flint skins, 30@40.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, Sept. 7, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, market steady. Local: Early and White Rose, fancy No. 1's, mostly 1.00 and 1.25 per lug; 100 lbs. sacked No. 1's, 2.25@2.50. Stocktons: Burbanks, quality, generally poor, 3.00@3.25 sacked. Sweet potatoes, lug, 1.50@1.85.

Onions: Local White and Yellow, lug, 75@1.00; 1.50@2.00 per 100 lbs. sacked. Stocktons: Whites, 2.35@2.50; Yellows, 1.60@1.75 per 100 lbs. sacked. Garlic: Supplies liberal, market steady, wide range in quality and condition. Local: Best, mostly 12@15 per lb. Mexican: 17@18 per lb.

Garlic, lb., 12@15.

VEGETABLES

These are the actual prices obtained Sept. 1 by the Los Angeles wholesalers

In their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 14@16; Limas, 9@10.

Beets: Doz., 35@45.

Cabbage: Supplies moderate, market steady, movement good, wide range in quality. Best mostly 3½ per lb.; per field crate, best, 2.75@3.25.

Carrots: Doz., 35@45.

Celery: Doz. bunches, 1.00@1.35.

Corn: Local, best 1.35@1.50 per box.

Cucumbers: Market steady; local, best, lug, 60@85.

Egg Plant: Lb., 5@7.

Lettuce: Field crs., 1.25@1.50.

Peppers: Bells and Chilis, lb., 4@5.

Squash: Local summer, large lugs, 75@1.00.

Tomatoes: Local lugs, best mostly, 60@75; shipping stock, 75@1.00.

Turnips: Per dozen, 40@60.

DECIDUOUS FRUITS

These are the actual prices obtained Sept. 7 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Apples: Supplies liberal. Bushel boxes: Bellefleurs, 1.85@2.00. Local: Various varieties, 85@1.25 per lug; crabapples, lug, 1.00@1.25; few, 1.00@1.50.

Bananas: Lb., 11@12.

Cantaloupes and Melons: Cantaloupes—Market steady, supplies heavy, quality and condition wide range. Local: Tiptop and Paul Rose, pink meats, standard crates, best 1.00@1.25. Watermelons, lb., ¾@1¼.

Grapes: Muscats, Malagas and Hamburg, 6@7; Tokays, 10.

Nectarines: Lb., 7@8.

Peaches: Local, best, lug, 1.75@2.25.

Plums: Lb., 7@9.

Pears: Bartletts, best, lb., local, 5@6; Northern, 8.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 3.00@3.25; special packed brands, 3.75@4.25.

Lemons: Market dull, wide range in prices. Local stock: Packed, 2.00@3.50; loose, 1.25@1.75; lug, mostly 75.

Oranges: Supplies moderate, market strong. Valencia: Packed special brands, 126's, 150's and 176's, 7.75@8.50. Local packed, second grade, 4.00@4.75.

HONEY

U. S. bureau of markets: Movement limited, market unsettled, prices slightly lower account slump sugar market and financial stringency. Carloads f.o.b. usual terms: White Sage Orange, 18½@20. Extra light amber sage, 17½. Light amber sage, 16; light amber alfalfa, 15@17½; Beeswax: 38@44.

BEANS

California Lima Bean Growers, September 3:

The situation has not changed materially during the past few weeks, except that somewhat lower quotations have prevailed apparently due to attempted pressure of selling against depression caused by heavy decline in sugar and coffee. The generally current immediate shipment quotations on regular Limas range around \$10.50 coast, with the market very quiet. Harvesting is now getting nicely under way and the first threshing machines are commencing to move out into the early districts. The yields cannot be determined with any accuracy until threshing has been in progress for a few days so that some averages can be secured.

GRAIN AND FEEDS

Grain Exch. prices bid Sept. 7:

Barley: Carlots, on track, 2.21¼@2.27½.

Bran: Kansas, 51.50.

Milo: 2.75.

Corn: bulk, Yellow, 3.17½.

San Francisco Markets

San Francisco, Sept. 7, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:

Extras 69½

Dairy Exchange prices extras this week and year ago:

Aug. 31	Sept. 1	2	3	4	6
'20	69	67	68½	69	69½

CHEESE

Dairy Exchange quotations:

Jack, full cream 23@26

Cal. Y. A. 38

Ore Trips 36½

Cal. Flats 33½

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 68½

Extra Pullets 63

Undersized 45½

Dairy Exchange prices, extras this week and year ago:

Aug. 31	Sept. 1	2	3	4	6
'20	69	67½	68½	69	69½

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1000 to 1200 lbs., 9@9½; do, 1200 to 1400 lbs., 8½@9; do, second quality, 7@7½; thin, 5½@6½.

Cows and heifers: No. 1, 7½@8; second quality, 6@7; common to thin, 3@4.

Calves: Light weight, 10@10½; medium, 8@9; heavy, 7@8.

Lambs: Milk, 9@10; yearlings, 7½@8.

Sheep: Wethers, 7@7½; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 15; 150 to 225 lbs., 16½; 225 to 300 lbs., 16; 300 to 400 lbs., 15.

POULTRY

Wholesale prices are:

Broilers, 42@45. Colored fryers, 2 lbs. to 3 lbs., 38@45, market firm. Colored young roosters (smooth), 3 lbs. to 4 lbs., 45@48; staggy, 27@30. Old roosters (colored), 22@25, market firm. Leghorn hens, 3 lbs. and over, 28@30. Large colored hens, 35@40, market firm. Young Pekin ducks, 28@30; old ducks, 20; young geese, 28@30, market easy. Dressed turkeys: Young, large, 60@70, market firm, old, 40@45; live turkeys, young, 50@60; old, 43@50, market firm. Live Belgian hare, 18@22; dressed, 25@30. Squabs, large, 55@60 lb., market firm. Pigeons, 3.50@3.75 dozen, market firm.

POTATOES AND ONIONS

Potatoes, per cental: Delta, 2.25@2.50; choice, 2.75@3.00; sweets, 7½@8 lb. for No. 1.

Onions: New reds, 50@60; yellows, 1.75@2.00 cr.; green onions, 1.25@1.50. Garlic, new, 10@12½.

VEGETABLES

Wholesale selling prices:

Artichokes: Doz., 25@1.00.

Beans: Lb., String, 3@5; Lima, 10@11.

Carrots: Lb., 2.

Cucumbers: 75@1.00.

Cabbage, 2.00@2.50 per cwt.

Celery: Doz., 1.25.

Corn, 2.50@3.50.

Eggplant: Livingston, lug, 75@1.25.

Lettuce: Doz., 30@35.

Okra: bx., 1.00@1.25.

Peppers: Bells, bx., 50@75.

Peas: Lb., green, 8@12½.

Rhubarb: Lug, 1.75.

Spinach: Lb., 4@7.

Squash, Summer: Sacramento, lug, 50@65.

Tomatoes: 1.25@1.50 lug.

FRESH FRUITS

Apples: Gravensteins, fancy, 2.25@3.00; B grade, 1.75@2.25, crabapples, nominal.

Bellflowers, 1.75@1.90; Rhode Island Greenings, 1.60@2.00.

Avocados: Doz., 5.00@7.00; Cal. Blacks, doz., 1.50@2.00.

Bananas: Lb., 9@11.

Berries: Strawberries: 8-oz. baskets, 60@75 per drawer; 12-oz., basket, 75@

FAIRBANKS SCALES



The Standard of Weight in Your Neighborhood

WHEN YOU INSTALL a Fairbanks Scale for Wagon and Stock use, you establish the standard of accuracy for your neighborhood.

Why? Because for ninety years Fairbanks Scales have been the world's standard, by which the accuracy of all others is judged.

An enviable record, which is the logical result of painstaking, unswerving accuracy in manufacture. This year's farm profits will come from a close scrutiny of the wastes and "guesses" of the past. The first step in learning your exact profits is to know your weights, and to base your transactions on the knowledge which only a Fairbanks Scale reveals.

Fairbanks, Morse & Co.
INCORPORATED CHICAGO

Western Branches:
Los Angeles Portland San Francisco
Seattle Salt Lake City



00; raspberries, 85¢@1.00 per drawer; blackberries, per chest, 7.00@8.00. Cantaloupes and Melons: Turlock cantaloupes, Standards, 1.00@1.25; do, Mosto Pink, 1.25@1.75; ponies, 75¢@1.00; do, 50¢@60; Sacramento, 50¢@60 per lug; isabas, 75¢@1.00 per crate; watermelons, per lb., Honeydew, 75¢@1.00 per crate; muskmelons, 2.50@3.00 per large crate; orsian, 1.00@1.50 per crate. Figs: Double, 1.00@1.35; single, 60¢@85¢; white, 75¢@1.00. Grapes: Black, 1.75@2.25 per crate. Seedless, 1.75@2.00; do, 2.00@2.25 per small lug, 3.00@3.25 per big lug; Tokay, 2.50@2.50 per crate, 2.50@2.75 per lug. Malaga, 2.00@2.50 per crate, 2.50@2.75 per lug; Muscat, 2.00 per crate. Nectarines: 1.25@1.75 cr. or lug. Peaches: Per small box, 1.00@1.50; strawberry, free, 1.50@1.75; L. A. lugs, 1.00@2.50; large lugs, 2.50@3; some fancy 1.30. Pears: Bartlett, 3.00@4.00 for wrapped per box; 2.00@2.25 for No. 2. Pineapples: Dozen, 4.00@5.00. Plums: 1.25@1.50 per crate or box; do, fancy varieties, 1.75@2.00. Pomegranates: box, 2.25@2.50. Quinces: box, 1.50@2.00.

CITRUS

Box: Lemons, standards, 2.00@4.25; seedless, 4.00@4.50.

DRIED FRUIT

Peaches—1920. California Peach Growers, Inc., prices: Yellow Muirs standard 15% 15% fancy 17% 18% extra fancy 18% 19% lugs 15% For "Practically Peeled," add 2½¢ per lb. (any grade). Above prices are bulk basis. F. o. b. California common shipping points. Shipment: September, October, November—Seller's Option. The above prices are guaranteed against our own decline until January 1, 1921. Apricots—1920. California Prune and Apricot Growers, Inc., prices: "Growers" "Sunsweet" choice @22½ @24 extra choice @24½ @26 fancy @26½ @28 extra fancy @ @30 fancy, Moorpark @ @30 extra fancy, Moorpark @ @33 standards @18 lugs @20 Figs—1920. Roeding Fig. & Olive Co. prices to growers: White Adriatic 7 cents net. Mission figs at a basis of 6 cents. Schedule announced White Adriatic, bulk in 50 pound boxes: Standards, 9; choice, 11; fancy, 13; extra fancy, 15. Black Mission figs in 50-pound boxes: standards, 7; choice, 10; fancy, 12; extra fancy, 14. Prunes—1920. California Prune and Apricot Growers, Inc., prices: Sunsweet Quality—20-30's, 25c per lb. at; 30-40's, 17c bulk basis; 40-50's, 15½¢; 60-60's, 13c; 60-70's, 11½¢; 70-80's, 10½¢; 90-90's, 9½¢; 90-100's, 9½¢. Growers quality one-half cent less per pound than Sunsweet on sizes 30-40's to 90-100's inclusive. Raisins: California Associated Raisin Co. 1920 base price 15 cents.

BEANS

California Bean Growers Association, August 30: The market on all varieties of California beans remains exceptionally quiet, and prices have declined slightly owing to the lack of demand, and the inability of some dealers to hold their stocks any longer on account of the financial situation. Reports from all the Eastern buying sections are to the effect that their trade will be in the market some time during September, and it is our opinion that we will see higher prices during the months of September and October. Beans are being offered, for shipment, at the following prices: Small Whites, 5.75; Large Whites, 5.75; Pinks, 6.30; Mexican Red, 7.50; Blackeye, 7.25; Red Kidney, 12.50; Bayo, 8.00; Cranberry, 6.75.

GRAIN

Wheat: 3.75@3.90. Oats: Red feed, new crop, 2.50@2.70. Barley: New feed, 2.30@2.60; shipping, 50¢@2.60.

HAY

Alfalfa Growers of California under date of August 25: There were 1,670 tons received in San Francisco the week ending August 21. We are selling hay for approximately as follows: No. 1 Dairy Alfalfa 29.00 Standard Dairy 26.00 Stock Hay 24.00 A. W. Scott quotes: Per Ton Wheat Hay, fancy 26.00@28.00 Wheat Hay (light 5-wire bales) 23.00@25.00 Tame Oat Hay 23.00@25.00 Wild Oat Hay 17.00@19.00 Barley Hay 17.00@20.00 Alfalfa Hay, first cutting 17.00@23.00 Alfalfa Hay, second cutting 21.00@25.00 Under date of Sept. 4, A. W. Scott, Co. says:

Receipts past week, 2256 tons. The prices stand unchanged since last week. The fields are being rapidly cleared and most warehouses through the country are filled with hay stored for farmers' accounts. Storage and carrying charges must soon be reckoned with when these stocks are called upon. Good wheat or tame oat hay will sell at a premium and is in light supply compared with cheaper grades. Alfalfa has been slightly stronger and in better demand with light receipts. A few shipments of alfalfa milled and alfalfa meal have come in from Nevada but the alfalfa weevil has been discovered in several places in Nevada and an embargo is reported to have been placed on both Washoe and White Pine Counties and the possibility of its spreading has caused buyers to shy at all Nevada shipments and concessions in price have been necessary to move them. This has been especially the case in export and coast shipping where there is fear of quarantine. This same thing happened in Idaho last year, and several adjoining states, although they were short of feed, placed an embargo on all shipments out of Idaho. Choice river alfalfa has sold readily at slightly better figures than last week. We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions).

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Per Ton Wheat Hay, fancy 26.00@28.00 Wheat Hay (light 5-wire bales) 23.00@25.00 Tame Oat Hay 23.00@25.00 Wild Oat Hay 17.00@19.00 Barley Hay 17.00@20.00 Alfalfa Hay (latter cuttings) 21.00@25.00

Citrus Markets

Los Angeles, September 8, 1920.

There has been a slackening in the Eastern market on Valencia due to large receipts of local fruits, to the high prices of Valencia and to the increased freight rate which went into effect August 26. Many buyers had put in heavy orders previous to the advance and it will be some few weeks before the f.o.b. trading comes back to its usual form. Reports on new crop Navels are cutting down earlier estimates somewhat and there is some doubt as to whether the yield will come up to the bumper yield of 1916-17. Central California expects about a 20 per cent increase over last year's output. Survey made on September 1 showed about 2,000 cars of Valencia to be shipped.

The lemon market continues slow. F. o. b. quotations are around 2.75-3.25. A sale of 47,000 boxes of foreign was made in New Orleans last week at an average

of \$2.85. There are on hand 15,000 boxes of foreign.

Shipments

Shipments to date from Southern California since Nov. 1, 1919: Oranges, 28,171 cars; lemons, 7,513; total, 35,684. To same date last season: Oranges, 31,343; lemons, 8,890; total, 40,233. From Central California to date this season: Oranges, 5,375; lemons, 288; total, 5,663. To same date last season: Oranges, 3,714; lemons, 251; total, 3,965. Northern California this season: Oranges, 261; lemons, 23; total, 284. To same date last season: Oranges, 244; lemons, 2; total, 246.

AT THE AUCTIONS

September 7:

New York: 25 or., 1 grapefruit, 3 lem. Val. 4.25-10.75, grapefruit 75-1.05, lem. 75-4.25. Philadelphia: 7 or., 3 lem. Val. 5.10-9.50, lem. 2.25-3.20. St. Louis: 2 or., 2 lem. Val. 6.65-7.90, lem. 2.00-3.35. Pittsburg: 4 or., 3 lem. Val. 3.95-7.20, lem. 1.55-4.70. Boston: 12 or., 1 grapefruit, 5 lem. Val. 3.80-8.45, grapefruit 2.35-2.40, lem. 70-3.30.

THE POULTRY MARKET

Weekly letter to the poultry producers of Southern California, Inc.:

Last week, after our weekly letter had been printed, Mr. Stanley said to the writer: "I wish you had said a word about the undue importance which many of our shippers, and all outsiders, lay upon the premium over the market which they think they should receive for their eggs, and entirely lose sight of what the 'market' is."

This feature of the situation has been so frequently explained in the past that it seemed self evident that a fair market price was of infinitely greater importance than a few cents premium over a market price below cost of production. In past years, when every individual was seeking to market his own product to the

best advantage, it was a case of the "egg chasing the purchaser," and naturally the purchaser fixed his own figure, which became the so-called "market price," and it was always fixed regardless of the producers' cost of production.

In that case the producer who obtained a premium over the market price seemed to be making good, but very frequently the market price, plus the premium, was below cost of production, and it was just this condition which forced the thoughtful poultryman to seek a means of bettering his position in this respect and has resulted in the cooperative organizations now operating.

In all cooperative marketing efforts the good accomplished by those who join and are loyal to their organization must benefit all in the industry and our own organization cannot expect to be able to monopolize all the improved conditions which we have secured for the poultrymen of Southern California. Every fair minded poultryman must admit that (with the production of eggs in California increasing by leaps and bounds, and far outstripping the increase in consumption) it has only been through the efforts of our cooperative poultry organizations that this year's surplus has been disposed of without demoralization of the local market. Only through the ability of the cooperative organizations to make carload shipments to foreign markets have we been able to move this surplus as we have. The New York City market, which has practically absorbed all of this increase in our production, is a discriminating one and would not have accepted a pack of eggs such as individual poultrymen could supply.

WEATHER REPORT

San Francisco, California, September 4, 1920.

Stations	Rainfall			Temp.	
	Wk.	Season.	Norm.	Max.	Min.
Eureka	.00	.60	.25	86	54
Red Bluff	.00	.31	.05	100	72
Sacramento	.00	.00	.01	102	66
San Francisco	.00	.00	.01	78	53
San Jose	.00	.00	.06	92	58
Fresno	.00	.14	.00	100	69
San Luis Obispo	.00	.00	.05	88	60
Los Angeles	.00	.00	.00	86	64
San Diego	.00	.00	.00	76	67

Soil Profits Lie Deep

Deep Plowing Doubles Crop Profits by Reclaiming the Fertility That Has Leached Years into the Sub-soil

McKay Power Lift Disc Plow and Sub-Soiler

America's foremost power lift disc plow makes finely pulverized, extra fertile, moisture-holding, quick seed bed 10 to 15 inches deep. Earlier crops—Heavier yields.

Only power disc plow made with sub-soiler attachment. Sub-soiler is detachable when not wanted.

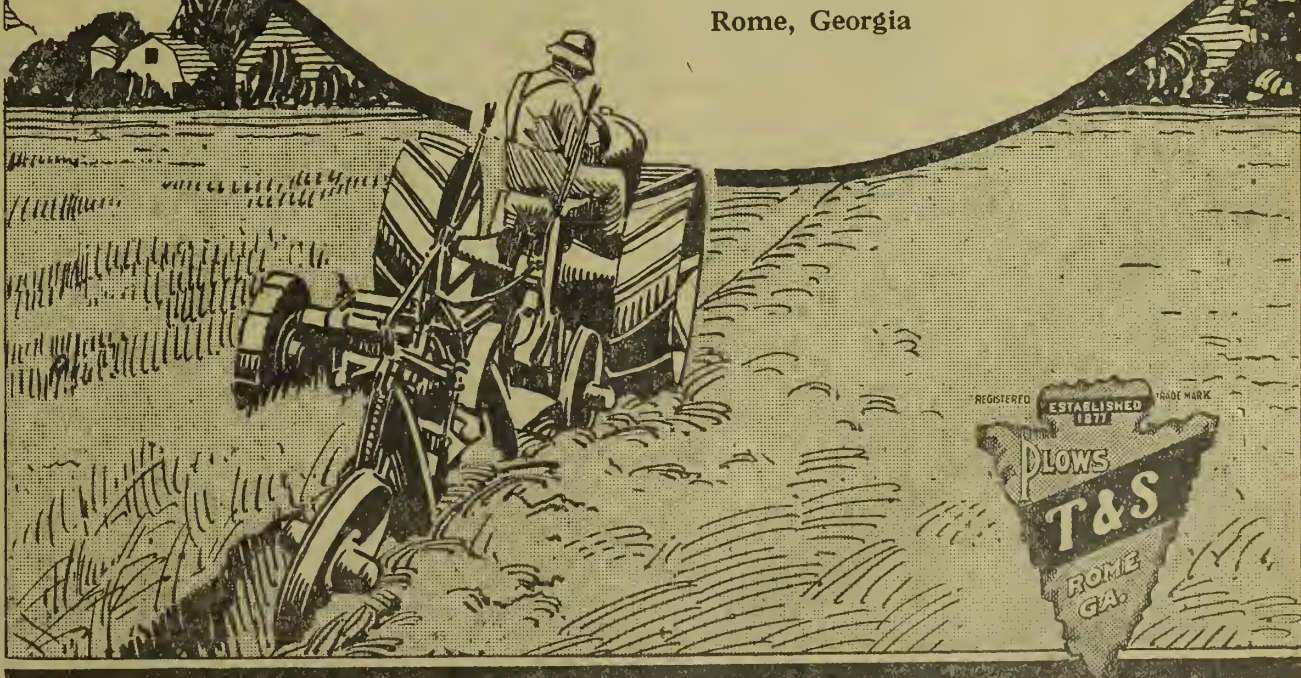
The McKay pulls easy—to center. Tremendous power and capacity. Easy to handle. Extra high beam clearance. Discs slice without strain. Highest grade material throughout—lifetime endurance. Adaptable to any tractor.

Ask nearest dealer about the McKay or write to us for illustrated description and full information.

Towers & Sullivan Mfg. Co.

Established 1877

Rome, Georgia



Arnott & Company

McKAY DISC PLOW
— DISTRIBUTORS —

Los Angeles

FISK

**In selecting a tire for your small car
consider these points of the Fisk Red-Top:**

FIRST: There is no "oversize"—but a tire that is actually bigger than others. Take the most common size: The FISK Red-Top 30 x 3 is larger than the so-called standard oversize tires.

SECOND: Construction strength. An extra ply of fabric is built into the FISK Red-Top. Also the tread is much thicker than in the average tire and is made of the toughest kind of rubber.

Result—both side walls and tread are ready to withstand—and do withstand!—the most severe punishment.

THIRD: Looks—good looks. With its "red-top" this tire is as handsome a tire as you've ever seen. It will add a smart touch to the appearance of your car.

It is no accident that the FISK Red-Top gives such remarkable and uniform performance on small cars. The FISK Red-Top was designed for that purpose. It is a specialized product built to give to the small car owner the greatest ease in riding, the greatest possible mileage—and this with the least attention of any tire made.

Since it was placed on the market a little more than two years ago the FISK Red-Top has leaped into popular favor. Despite constantly increased equipment it is only recently that we have been able to catch up with the demand.

But now you can go to your dealer and get FISK Red-Tops promptly—and after getting them you'll realize what utmost satisfaction in tire value is.

The Fisk ideal guarantees a square deal—"To be the best concern in the world to work for, and the squarest concern in existence to do business with."

***Next time—BUY FISK
from your dealer***



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CALIFORNIA CULTIVATOR

and **LIVESTOCK** and **DAIRY JOURNAL**

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

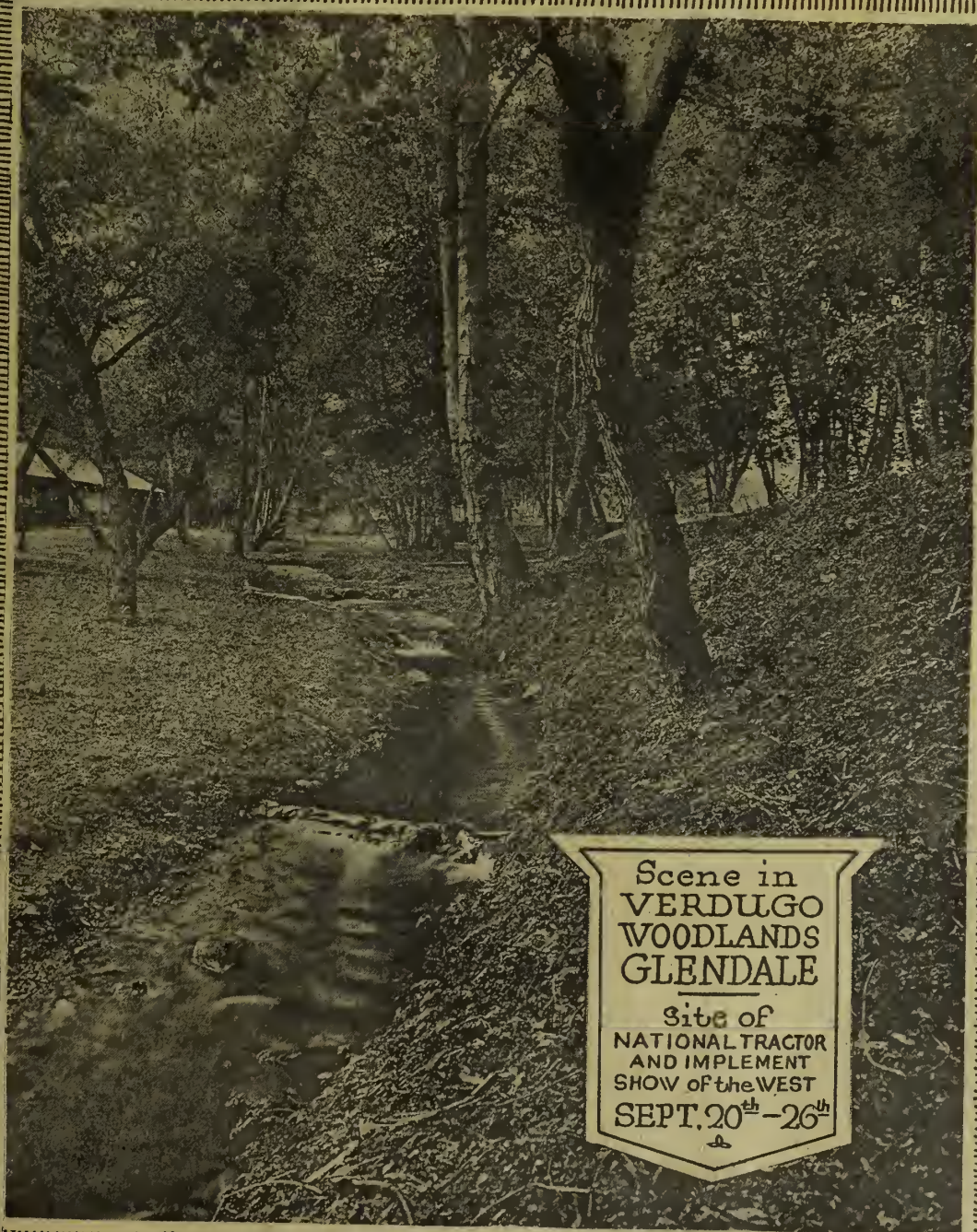
San Francisco

Vol. LV

September 18, 1920

No. 12

NATIONAL TRACTOR AND IMPLEMENT SHOW of the WEST



Scene in
VERDUGO
WOODLANDS
GLENDALE

Site of
NATIONAL TRACTOR
AND IMPLEMENT
SHOW of the WEST
SEPT. 20th - 26th

Economy

Overland

TRADE MARK REG.

Doing More In Less Time at Less Cost
—*That* Is Economy!

WHEN 97 Overland Sedans under all weather and road conditions, recently averaged 25.2 miles per gallon, they dramatically illustrated Overland economy.

The same nimble stamina with economy won the 1920 Los Angeles-Yosemite contest. *Average 35.1 miles per gallon!* The 355 mile contest included 100 miles of mountain roads. The winner was a stock Overland touring car with standard *Triplex* Springs.

A stock Overland Sedan also won in its class, averaging 27.6 miles per gallon. Of course experts drove these carefully adjusted cars. But normal experience shows *you* can rightly expect great economy in gasoline, and also in tires and upkeep.

Overland economy and stamina is due to the light weight of fine alloy steel, plus the remarkable riding qualities of *Triplex* Springs.

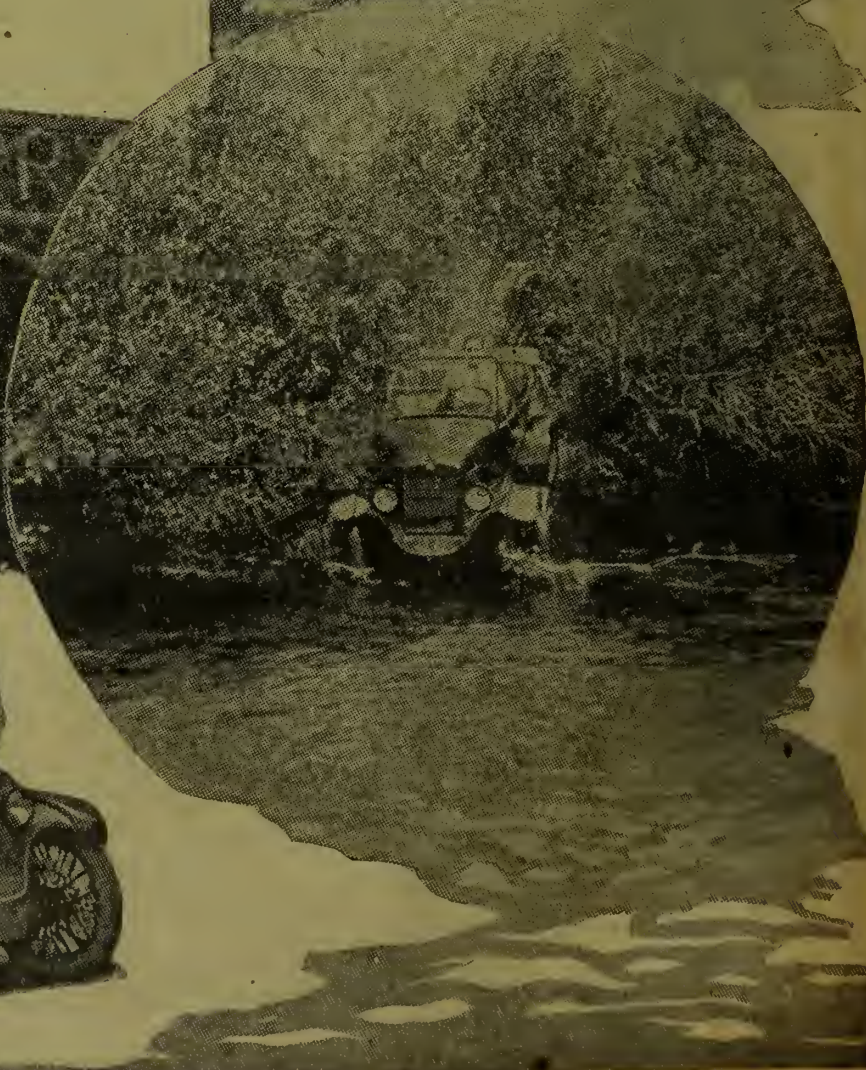
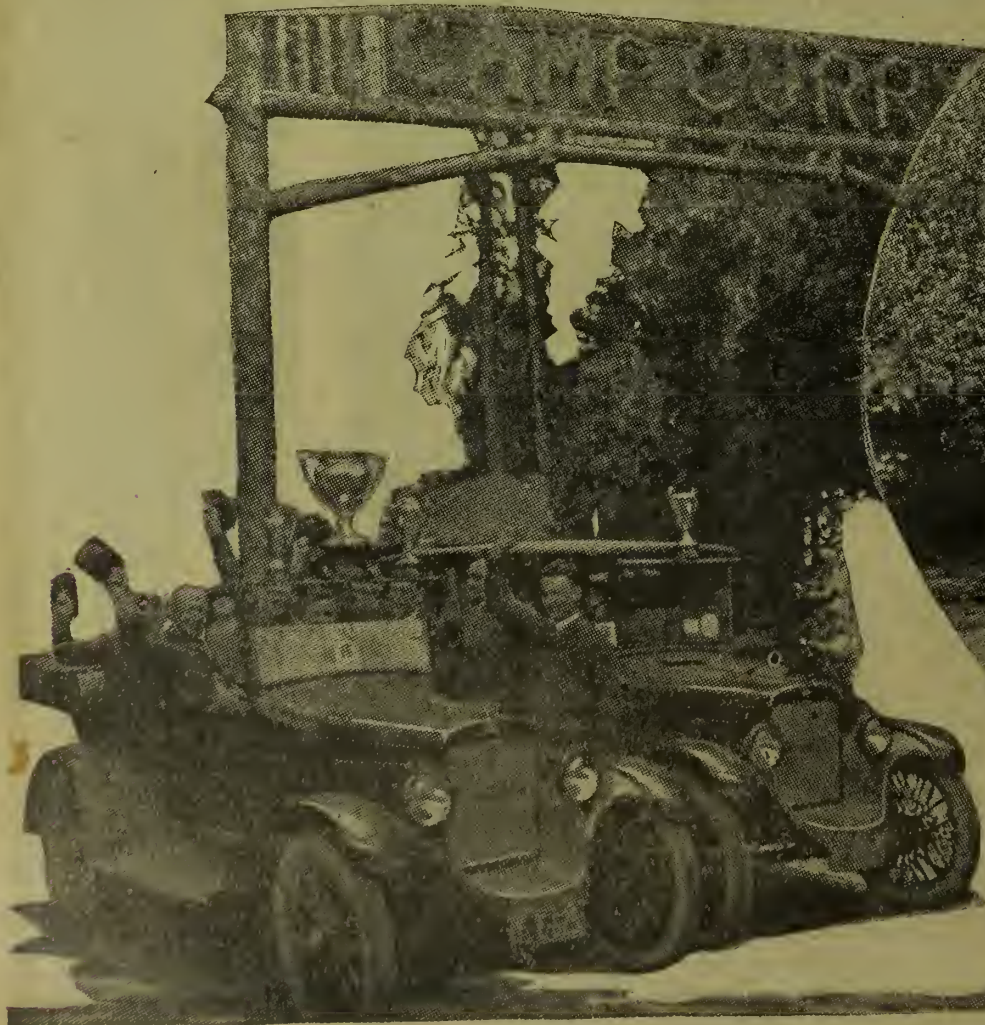
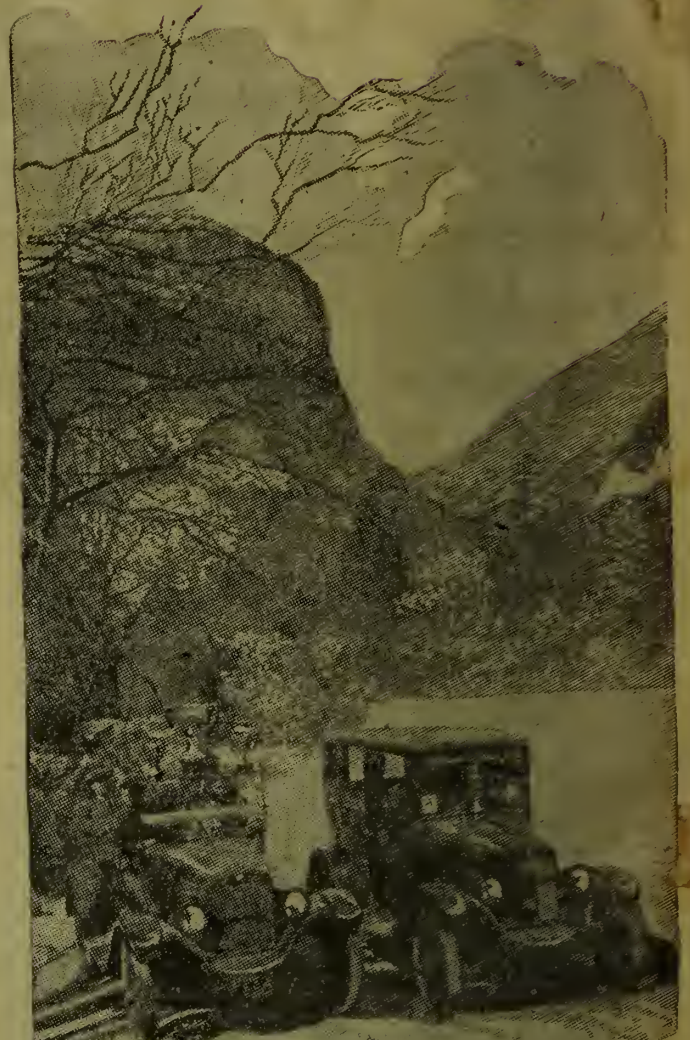
They protect car and passengers from road shocks.

Overland gives you maximum mileage *with comfort*, for every dollar of your investment. You can accomplish more, in less time, at less cost.

WILLYS-OVERLAND, INC., TOLEDO, OHIO

Sedans, Coupes, Touring Cars and Roadsters

Willys-Overland Pacific Company, Main Office, San Francisco.
Willys-Overland, Limited, Toronto, Canada.



California Cultivator

Vol. LV, No. 12

Los Angeles, September 18, 1920

One Dollar Yearly



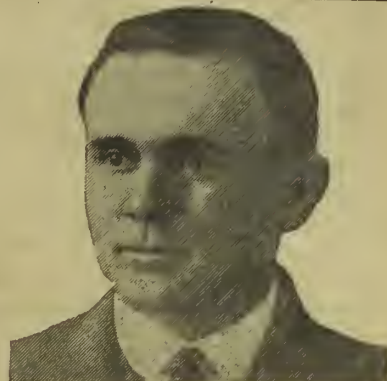
W. W. Rainey, President



Guy H. Hall, Manager



Thomas F. Osborn, Vice-President



A. W. Hudson, Secretary-Treasurer

National Tractor Show at Verdugo Woodlands

NEXT Monday all roads will lead from the farm to Verdugo Woodlands, Glendale. On that day the National Tractor and Implement Show of the West will open its gates to the public after a preparatory period of three months during which every effort was made by the sponsors of the show to insure its being the greatest exhibition of the sort ever held in the West.

A large attendance is assured, due principally to the desire of progressive agriculturists of the Coast region and the entire West to take advantage of the extraordinary opportunity presented for a first hand study of the latest tractors, trucks and implements, all of which will be represented by interesting exhibits.

The exhibition is also eagerly looked forward to by the tractor, truck and implement men as the greatest get-together meeting in the history of the trade. Practically every well known make of farm equipment will be shown and expert representatives of the various lines will be on hand to conduct practical demonstrations and explain thoroughly the meritorious points of the equipment.

Farmers everywhere are welcoming the chance to attend the exhibition in order to make selection of their needs under the most favorable circumstances. It must be remembered that to see all the models which will be exhibited at the show it will be necessary under ordinary conditions to travel far and wide to the scattered cities where they are represented by sales agents and branch houses. In the Verdugo Woodlands all these will be gathered together so that intelligent comparison will be easy.

Throughout the preparatory period the men engineering the exhibition have devoted their efforts strictly to making a business show, an exposition that will be of immense practical benefit to the busy men who will give up their time to attending it. The carnival side attractions prevalent at state, and county fairs will not be prominent at the tractor show. Every morning the gates will be opened at 8:30 and will close at 6 p. m. This will give the visitors ample opportunity to enjoy the entertainment and recreational features in Los Angeles and vicinity.

The Verdugo Woodlands are reached

by a short, pleasant drive from the heart of Los Angeles over some of the finest paved boulevards in the state, while Pacific Electric cars will run on a speedy schedule from downtown Los Angeles to the gates of the park. Main roads leading to the Verdugo Woodlands are: From Los Angeles, North Broadway to Glendale and the Verdugo Road; from Monrovia, Sierra Madre and Pasadena, the Foothill Boulevard and Eagle Rock Road, turning into the Verdugo Road at Glendale, also the north road by way of Devil's Gate to the junction with the Verdugo Road; from San Fernando Valley points via the San Fernando Boulevard to Glendale; the Sunset Boulevard, Vermont Avenue and the Los Feliz Road from Hollywood and Coast points.

For many days active preparations for the show have gone forward. Every exhibitor has selected his space in the beautiful woodlands and rivalry is keen among the dealers, manufacturers and others to have the honor of the best exhibit. The finest examples of every article listed will be there, groomed for their appearance before the thousands of persons who have a vital interest in the progress of modern agriculture.

Many notables in the field of agriculture and the manufacture of agricultural equipment will be present at the show, while consuls, consular agents and exporters stationed in Los Angeles and San Francisco will probably be among the most interested visitors.

Careful selection of the implement to meet his needs is a marked characteristic of the experienced agriculturist. Snap judgment is seldom a fault of these buyers, and here at the National Tractor and Implement Show he will be given fullest opportunity to inspect, compare and weigh the respective merits of equipment of various makes. Visitors will be surprised at the wonderful showing of tractors, today an all important moving force in farming. Horse drawn vehicles retain their immense popularity and undoubted importance in the agricultural scheme of things, but happily for the horse and his owner, the perfected tractors of today are doing the greater part of the heavy, intensive work.

Years ago, when the tractor first loomed on the horizon with just a

faint glimmer of its popularity-to-be and its all around usefulness, its coming was generally regarded as the big step in farming on an immense scale, where broad acres comprise an estate the size of a township, where the work calls for the untiring endurance of engines of steel. With the passing of the years, however, the inventive geniuses who developed the tractor sensed the need for equipment on smaller farms, until today visitors to the show will have an opportunity to inspect at close range the small, almost tiny, tractors intended for use in the little truck garden, the backyard orchard, on any of the gem like estates with which California is dotted. These may be compared with huge tractors almost as large as locomotives.

Tractors, while the largest single group of exhibits at the show, will be run a close race by trucks and implements. These will not only include major exhibits of trucks for farm use, shown in all popular and needed capacities, but also trailers, those smaller supplementary vehicles which have lately become so popular in agriculture and industry. Implements will range from the better known models of horse drawn cultivators, plows, harrows, etc., to the motor driven implements, threshers and separators, with all their most approved attachments, intended to lighten the labor on the farm and speed production.

The large selection devoted to accessories will prove absorbingly interesting to all visitors. There will be motor fittings of all sorts, lubricants, paints and many other items, almost too numerous to mention, but every one of great value to modern agriculture.

NOTES

The spirit of the West is in every plan for the coming tractor and implement show. Greater economy, efficiency and accomplishment are made possible by improved equipment. True, its use calls for large capital, which is unfortunate for the man with limited means, and he is at a certain disadvantage. But the world moves and agriculture has seen such an advance in the past score of years that the real necessity for striking the gasoline or electric gait is not fully appreciated by the slow thinker.

(Continued on Page 363.)



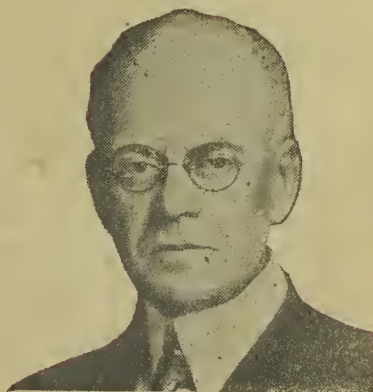
W. S. Gregory



E. G. Judah



Cecil W. George



H. T. Hays

Agricultural News Notes of the Pacific Coast

Northern California

Caretakers who go with stock to the fair are again allowed to travel free.

Petaluma's celebration of Egg Day brought great crowds to the city.

Pear growers of Lake County are receiving as high as \$100 per ton.

A grape grower near Oroville reports receiving \$100 a ton for his entire crop.

The Ukiah Valley pear crop is estimated at 900 tons as against 1,500 last season.

Placer County fruit growers have been investigating dehydration and evaporation.

Tomato fields along the Russian River are now yielding exceptionally heavy crops.

Red spider has caused serious injury to the prune orchards of the Sacramento Valley.

President Stephens of the Pacific Rice Growers has advised against growers contracting futures.

The Sutter Basin Land Company gave away about 50 carloads of watermelons because of poor market.

The Mendocino Apple Show will be held October 27 to 30. A stock exhibit will be one of the main features this year.

Meridian, Sutter County, has requested supervisors to pave three miles of highway south of Long Bridge.

The board of supervisors of San Francisco is considering the question of allowing goats to be kept within the city limits.

Electric advertising signs in the entire Bay district will be extinguished until further orders to conserve power for growing crops.

Fruit shipments for Northern California are 2,000 cars in excess of last year's at this date. So far pears are the heaviest shipper.

Butte County's rice crop will be harvested three weeks in advance of the 1919 crop. Contrary to earlier estimates, the crop will be heavy.

Tehama County farm bureau held picnic on Labor Day at Courtland Park. President Walker of the state farm bureau was one of the speakers.

Those who favored the building of a bridge over the Feather River at Oroville have drafted a new set of plans calling for smaller expenditure than the original plan.

Only one Japanese, a servant, is found in Lake County as yet. The farmers are having no trouble in getting their crops harvested. Some one ought to tell Colonel Irish about that.

The Colusa office of the Pacific Rice Growers Association has increased its staff by the addition of four members, and this will now be headquarters of the membership department for the state.

Under order of the court in an injunction suit brought by the Moulton Irrigated Lands Company, rice growers are restricted in amount of water which they may drain from their fields into Butte Creek.

The first annual Durham Community Fair the last week in August was a big success. Many visitors came from all parts of the state because of their interest in this first land colony established in California.

Central California

The former winery at Lodi will crush 250 tons of grapes daily this season.

Fresno County finds it necessary to increase the size of its fair grounds.

Potato growers of the valley declare this an exceptionally bad year for spuds.

Fig growers of the Terra Bella district of Tulare County report big crops.

Ninety dollars a ton is reported for Bellflowers grown on the Kaweah River.

Buckeye poisoning of bees is reported by a beekeeper at Woodlake, Tulare County.

Half the population of Kings County is in the township in which Hanford is located.

Fresno district fair, to be held September 27 to October 2, offers a \$20,000 premium list.

Some damage was done to White Adriatic figs in Madera County by rain-fall in August.

September 7 was San Joaquin Day at the state fair. Thousands of valley people attended.

The Stanislaus County board of supervisors places in its budget \$10,000 for fair grounds.

Fresno County poultrymen are planning a big exhibit at the Fresno County fair, September 27 to October 2.

Survey is being made of the Kern River irrigation project. Report will be made by the first of the year.

Fred W. Hansen has tendered his resignation as general manager of the San Joaquin Valley Milk Producers.

Young almond orchards now coming into bearing in the Terra Bella district of Tulare County show heavy yield.

The first week in September serious forest fires raged in the Tule River Indian Reservation east of Porterville.

Work has begun on the new citrus packing house of the Grand View Heights Association near Terra Bella.

Many thefts of bee hives are reported in Monterey County with incident destruction of hives which are not taken.

Fresno County supervisors have called for bids for construction of 31 miles of highway to connect present units with state and main highways.

Hog auctions held by the Stanislaus County farm bureau since March, 1919, have disposed of 116 carloads of hogs and brought to their owners \$262,064.

The grain raising districts between Hickman and Farmington, Stanislaus County, report harvest of more than 250,000 sacks, 180,000 of which is barley.

A melon shipper at Turlock has a new method for preserving shipments of melons to Eastern points. He sprays them with sulphuric acid solution.

The Monterey Cannery Association has agreed on a new maximum wage schedule: 40 cents an hour for women; 50 cents for general unskilled labor.

The Valley Fruit Growers Association has launched a drive for funds. This association has been for four years supplying labor to its members in Madera, Fresno, Tulare and Kings Counties.

Southern California

A cotton gin at Calexico was destroyed by fire last week.

Arlington, Riverside County, canneries have opened on tomatoes.

Los Angeles County has purchased \$500,000 worth of highway bonds.

Los Angeles County's coming orange crop is estimated at 6,650,000 boxes.

Almond growers at Banning are busy with their soft shell varieties.

Hemet canneries are having extra heavy run on Muir and Lovell peaches.

J. R. Waters has been appointed assistant farm adviser for Orange County.

Prune growers in the Banning district of Riverside County have begun harvesting.

Several boys and girls pig and vegetable clubs will be started in Orange County this fall.

The price of ginning cotton at Calexico has taken a drop from 50 cents per 100 pounds to 35.

Orange County fair, Huntington Beach, October 7-9. \$50 is offered for best community display.

A fee of \$2 will be charged for each correspondence course taken under the direction of the state university.

Banning almond growers have received their first payment from the association for I. X. L. and Nonpareil.

Good alfalfa is in keen demand; grain hay rather lighter crop than anticipated because of great production of grain.

Lemon prices are looking up a bit, but the past 12 months have been about the bluest the lemon growers ever faced.

There is a movement to organize a Lima bean pool among independent growers on the San Joaquin Ranch in Orange County.

There are something like 1,500 cars of Valencias yet to be shipped; last year there were nearly 6,000 cars to go after this date.

Cotton gins of Imperial Valley are having exceedingly heavy run. The weather is exceptionally good for developing the cotton.

Orange County farm bureau members recently made cover crop excursion. Whippoorwill cow peas are the favorite for summer cover.

The Fullerton farm center of Orange County held its first fall meeting September 10. Standardization of barnyard fertilizers was discussed.

The Mesquite Lake, Imperial County, farm home department will meet September 22. Another meeting will be held west of Calipatria, September 23.

The increase in freight rates means an additional cost to citrus growers of California of \$8,600,000. This will amount to about 50 cents for each 100 pounds, practically 40 cents per box.

Warning against invasion of Japanese in sugar beet growing districts of California is contained in report to Secretary of Labor Wilson by two agents appointed to make survey of contract labor.

Anaheim packing house is starting on the canning of chili peppers. There are about 300 employees and the plant will run for about four months. The output this season will be about 25 per cent greater than any preceding.

The Coast and General

The last day of the Arizona state fair, November 13, will be Auto Day.

It is rumored that the new administration in Lower California will remove export taxes from cotton.

Pear growers of the Wenatchee district of Washington estimate shipments will be between 600 and 800 carloads.

Cotton growers feel determined to hold on to their crop until "manipulators get tired of trying to hold down the prices."

Arizona state fair will be held at Phoenix, November 8 to 13. Horse racing will be featured. A purse of \$20,000 will be distributed.

The Washington State Good Roads Association held convention at Everett the last week in August. Tacoma was chosen for the 1921 convention.

President Wilson has urged governors of all the states to set aside Saturday, October 9, as fire prevention day and request general observance by the public.

The army transport corps is expected to reach Phoenix, Arizona, September 20. This convoy of trucks and cars left Washington on June 14 and will end its trip in Los Angeles.

The Yuma Water Users Association has appealed from the decision of the U. S. district court that it must pay the reclamation service \$5,000,000. The association claims its share is \$2,000,000.

In spite of a rather low rainfall over a considerable area of Arizona range feed is reported to be fairly good. In several parts of the state cattle are reported to be "rolling fat." In spite of the dry summer cattle have come through in excellent shape.

The Yuma Cotton Growers Association is conducting a membership campaign. The principal business of the association at present is securing and handling cotton pickers from Mexico. Growers secure their pickers from concentration camps in the valley.

It is reported that a bunch of 3,500 Mexican soldiers being brought to Mexicali from Central Mexico will arrive in uniform of blue denim overalls, all clothing and bedding having been burnt to insure against any possibility of introducing the boll weevil into the Imperial Valley.

Figures recently given show that the mineral products of Arizona for last year were valued at \$108,707,000. This is only about twice the value of the farm products. If the area irrigated land in Arizona should be doubled agriculture might soon become the leading industry.

At a meeting of the Chandler, Arizona, farm bureau, held recently, resolution was adopted asking the merchants and others not to buy cotton from individuals unless the buyer is sure that the seller is a grower of cotton. This step was taken to prevent cotton stealing, which was prevalent last season.

Cotton growers throughout the San River Valley of Arizona are very much concerned about the opening price for cotton. While a few bales have been sold at 85 cents there is considerable doubt as to whether this price will establish a market. The low price of cotton seed is also somewhat discouraging to the cotton growers.

California Agriculture Represented at State Fair

By C. B. Messenger

UT in front of the grandstand in the aviation field, as the center of the race track was called, was the big sign: "See the Fair from the Air." The literal seeing the fair from the air cost ten bones, and that meant that ten perfectly good dollars was burned up in as many minutes, which was the time allotted for seeing the fair from the air. I didn't see it that way; I prefer walking. A person ordinarily walks considerably less than 100 miles a day when he is attending the state fair but—take it as a reasonably conservative statement—one is dead tired at night. And that is my text for a sermon, or a bit of moralizing, or, if you prefer, advice, to those who are going to other fairs this year. Don't tramp so far and see so much that the whole impression secured becomes a confused mass of, well, junk, for the want of a better word, and of little value.

Almost every exhibit had from one to possibly a dozen attendants ready to explain and give real information to the inquirer. For instance, the exhibit of the state department of agriculture. There were 100 or possibly 1,000 different educational exhibits in this one. There was a bulged and partially decayed cheese; there were portions of the anatomy of cows and hogs; there were appliances used in dairy or creamery; there was a display of chemicals, retorts, flasks and other equipment of the laboratory; there was a model of a monster ship; there were commercial packages of fruit of such quality as to be almost repulsive; there were others magnificently packed of highest quality; there was even a place to sit down and rest. I sat there a few minutes and observed the casual passer by. As a rule he asked no questions, simply gazed and perhaps within five minutes had passed the entire exhibit.

There were others who spent perhaps an hour and became almost a bore to the attendants, always patient, however, and giving a fund of information regarding that one exhibit.

That faulty cheese I spoke of was simply a horrible example. It had been made in the regular way; it should have been a perfect product, but because of carelessness in the dairy an inferior quality of milk resulted in inferior cheese. This particular exhibit, which was under the direction of C. F. Hoyt, contained, if not a complete, a most extended, exhibit of milk and milk products. In cheeses there were cheddars, limburger, pineapple, Edam, Camembert, Neufchatel, and still more.

Other products of milk, all California made, were albumen, milk sugar, dried milk, condensed milk, evaporated milk and a large number of medicinal and other products made directly from the albumen and milk sugar.

But, like the bore referred to, we are staying too long in Mr. Hoyt's booth.

Prof. Gray amused and instructed the kiddies as they came along with his flasks of crimson and golden liquid. Several ounces of the crimson or bright pink liquid was deprived of its brilliant color and became as clear as water on the addition of two or possibly three drops of an acid. This made the kiddies' eyes stick out, and then Prof. Gray would add a few drops of alkali and the brilliant color returned. This led on to the explanation

as to how the chemistry bureau of the state department of agriculture may determine the quality of fertilizers, also the scope of the work conducted by this division.

The work of the office of cattle protection, the use and recording of brands, was explained by J. B. Newsom and other investigators and specialists.

The model of the big ocean liner in the great glass case was merely to visualize the work of the quarantine service. Frederick Maskew is chief deputy quarantine officer, but L. A. Strong was at hand to give information of the intricacies of the work and to explain a vast number of the ins and outs of the work of quarantine officers and inspectors.

Harry Smith's bugs filled a large glass case. They were mostly of the Hippodamia, or aphid eaters.

Potato Inspector W. V. Shear showed potato seed, good, bad and indifferent.

F. W. Read, in charge of standardization service, with assistants, explained the methods followed by some shippers who would injure California's reputation for high grade fruits by dishonest pack.

R. L. Nougaret's viticultural service attracted much interest, notwithstanding today viticulture is on a different basis than formerly.

We are, however, spending more time than we should in this one most interesting department. Going down the great building from this southern end where the department was located to the northern end, where the fish commission maintained its exhibit, one passed some two or three score of exhibits made by counties, the federal government, or large cooperative organizations. A like number of exhibits was also made in the wide balconies. There is hardly room for even a list of these exhibits, but they contained displays of California fruits in almost every form. That is hardly correct, however, for there was one form of exhibit, common in former years, which we believe did not exist in this year's state fair. This, so necessary in a permanent exhibit, is the monster globe or glass jar containing fruit and formaldehyde or other preservative of form and color. The fruits at the fair were all in their natural state or preserved by evaporation, canning or otherwise, and for human food.

This great fireproof building is a credit to the state. It is only three years since its predecessor and its contents, of great value, went up in smoke. On Sunday evening of that year the throngs were admiring the varied and rich exhibits, similar to those displayed this year. The building was of such a nature that there was barely time to move the crowds from it before it was a roaring furnace. The loss seemed irreparable, and was, as to some of the most valuable exhibits. The new building, however, answers the purpose admirably and fits into the general plan which architects have outlined for all the buildings yet to be erected for a permanent exposition of the state's resources.

Tractors and Implements

To give a complete list of the tractors, harvesters, trucks, implements and machines would require a good full page of small type, hence we refrain and will take a look in at the



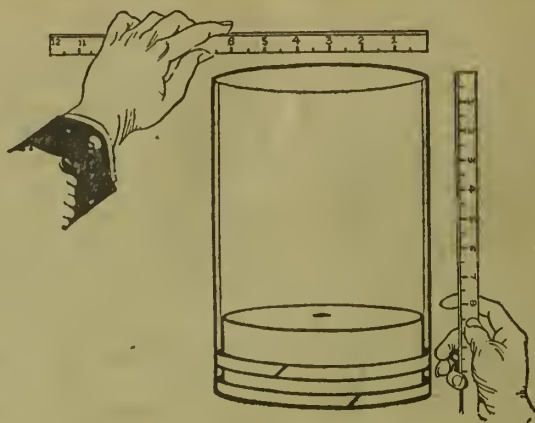
Things Were Moving at the State Fair.

Upper picture shows entrance to Tractor and Farm Power section. It was taken early in the morning before the crowds gathered.

The second is of the interior of the Tractor and Implement tent. It is a snapshot taken by the Cultivator camera and indicates something of the magnitude of the exhibit. There were too many individual exhibits to make possible showing them in separate photographs.

Second from the bottom, electric light plants for the farm, methods of generating, storage batteries and electric equipment generally; likewise many small motors and labor saving appliances.

Bottom picture shows exterior of the three buildings occupied by the University of California.



Stroke, $8\frac{1}{2}$ Inches

Bore, $6\frac{1}{2}$ Inches

Compare these with stroke and bore of the most powerful truck engines

Gas engine power is indicated by bore and stroke. In the Best Tracklayer engine, bore and stroke are fully 50 per cent greater than those of the most powerful motor truck engine.

The Best is built for power. The engine is manufactured in our own plant to exactly suit Best Tracklayer design. Power galore for the toughest job of plowing, harvesting or hauling with ample reserve for the unexpected, the Best has proved itself a marvel for heavy-duty work. This tireless, unfailing "pull" starts with the engine. But Best Tracklayer design gets the power to the drawbar with least loss. Best Tracklayer turns 60 per cent of its engine power into pull. This is the result of long years of tractor-building experience.

Best Tracklayer reputation for dependability, long life and low operating cost is due not only to its remarkable engine, but to other famous features, such as manganese steel track, with greaseless, non-friction "rocker-joints"—three-point suspension—working parts housed—no belts or chains—36 Hyatt and Timken bearings—full oscillation and independently operated tracks—correct design worked out through years of experience—scientific selection of materials—high grade workmanship. If interested in tractors, send for our complete catalog.

C. L. Best Gas Traction Co.

SAN LEANDRO

CALIFORNIA

BEST TRACKLAYER SIXTY

60 H. P. at Pulley

35 H. P. at Drawbar



half dozen great tents and exhibit booths much as did many of the visitors. The real value came to the visitor who lingered, that is, providing he lingered at the particular station which would give him information. This might be had at every one of the exhibits in its particular line.

For instance, the demonstration tent, located between the tent with farm trucks and the one filled with pumping plants and other power appliances. This little demonstration tent had, when in full operation, perhaps a dozen instructors in farm mechanics. Prof. Fletcher was in charge, and the inquirer who had a problem or wished information along any mechanical line, presenting his case to Prof. Fletcher, would be assigned to the station which was equipped to solve the problem. Did one wish to know how to handle difficulties with the magneto, one thoroughly qualified stood ready to explain the workings of the various parts and their relationship to each other, to tear down and build up and show methods of repair.

I wished to know regarding the differential. One was there already on the work bench, and it was taken entirely apart, every cog wheel separated from every other. As it was torn down and built up again it was made perfectly plain how the two rear wheels of an auto or of a tractor may run at different speeds in making a turn and still both wheels receive the same amount of power from the engine.

Another booth showed how to lace belt, not the waist kind, but the kind which conveys power. Metal connections, or laces, were shown and also faulty method of using and how to avoid it; also how to avoid the fuzzy end of the ordinary soft rawhide links. This fuzzy end was trimmed slightly, held over a match until charred to just the right consistency, allowed to cool, thus hardening, in three or four minutes, and so hardened as to become almost a perfect needle which could be sent through a much smaller hole than is possible with the soft oily rawhide.

But we must be careful or we will spend too much time in this wonderfully attractive tent, attractive because of its wonderful educational value.

Pumps

Just back of this were the pumps, and by pumps we mean irrigation pumps, hand pumps, spray pumps, oil pumps and even air pumps. Concrete canal filled with water gave opportunity for big irrigation pumps which supplied water for miniature irrigation system, waterfalls and measuring devices.

Threshers

Back of all the tents in the open field were the threshers, also combined harvesters and threshers. Many of these were in operation, and when they were all going and began to speak for themselves the hum of industry was thrilling. This all became pandemonium turned loose, however, when one of the threshers proceeded to devour a pile of brick. This was a rather startling exhibition of endurance run. This particular thresher was connected with the engines of a monster tractor and was going at full speed. The attendant would carelessly toss into the carrier or into the cylinder two or three or half a dozen full sized brick. The logical result should have been a mixture of brickbats and broken cylinder teeth. However, the thresher seemed to enjoy the diet, and with a roar which drowned all other noises the bricks, or rather the dust of what once were bricks, was carried through and ultimately enveloped the entire outfit in a mass of red dust.

Trucks

The truck tent was a monster one but not so filled as was the tractor tent, in fact, some of the trucks were exhibited in the bigger tent which housed the tractors and implements. But there were trucks and trailers for almost every conceivable use, whether it be hauling rocks or gravel, grain or hay, cattle or pigs.

Dairy Supplies

There wasn't a milking machine on the fair grounds. This was quite a distinct shock, because there always have been a number, and in the past year there has been wonderful advancement in the milking machine industry. These machines have always been exhibited near the dairy building in the Holstein dairy barn. That particular space was given this year to milk goats, so the management asked the dairy supply people, including the manufacturers of milking machines, to exhibit near the farm implement and power tents. This they declined to do, hence dairy equipment had less liberal display than at many of the preceding fairs.

This is one of the very few instances where there was any shrinkage or even anything other than wonderful advancement over former years' exhibits. So far as space was concerned, the location intended for dairy supplies was taken up by electrical lighting appliances, especially for manufacturing and using electricity on the farm. Equipment was shown which might be installed on any farm to generate the electricity, store it, distribute it and use it in running the washing machine, the sewing machine, the churn, the electric fan in the kitchen, the electric toaster on the table, the dish washer, to lift the water and make it run through the house; in fact, create in the farm home and its outbuildings all the conditions which make for modern conveniences.

Of course these hardly reached the magnitude of the monster war department searchlight which was exhibited in front of the main building. This great searchlight, mounted on its four wheels, was run on a track up into the army transport where was located the monster dynamo which supplied the current to the searchlight, which gave forth a light of 84,000,000 candlepower (that is 84 million—there is no surplus of ciphers for good measure).

But while not of such magnitude this electrical showing convinced me that there is a world of help in such exhibits in suggesting relief from at least a portion of the labor troubles on the farm. Other fairs are coming yet this fall and we hope that every producer who would be efficiently equipped will look up these exhibits and ask the men who know what they can do, how they do it and how much they will cost and save.

The Big Tent

But there is the big tent. I haven't taken you in that yet, although it is the most prominent place and filled as I have never seen it at any other exposition or fair. The casual visitor could perhaps walk its length and back in 30 or 40 minutes, but the inquirer would want at least as many days. The question which brought a world of information was: "What have you new, that is, invented or manufactured for the first time during the past 12 months?" This aroused much interest among the attendants or salesmen who were with the exhibits. One would say, "Here it is, a power lift of such economy of construction and efficiency in service that it should be in the hands of every user of plow, cultivator, scraper or other implement on which a power lift can be used."

At the next booth, perhaps, was a cutter bar, or a whole mowing machine for attaching directly to the front of a tractor. This appliance was so wonderfully simple that one couldn't refrain from saying, "Why didn't I think of that before?"

Then there were new tractors, in fact, entirely new types of tractors, which was a bit surprising, for it had been felt that in the main there were now only two or three different general forms or principles on which tractors are to be built. In fact, the effort has been toward standardization rather than toward developing diverse types.

Subsoilers are also supposed to be standardized, but there were new attachments, the like of which have not been shown before.

In this tent, besides the tractors, trucks—for garden and all the way up to the great 75's, trailers, there were mowers for lawn and field, binders, ensilage cutters, scrapers, graders, potato diggers, drills, cultivators—everything used on the farm.

THE POSSESSION OF A YUBA
IS ASSURANCE OF A CROP

A NEW YUBA

Inventors created the first Yuba—our engineers developed the second—but YUBA OWNERS have perfected the third. This Model 15-25 is the first new Yuba in four years. It is the same sturdy BALL TREAD, with an hereditary eagerness for difficult work, fashioned to the whims of the man who sits at the throttle for long dusty hours.

“Think of the man at the crank on a cold morning!” cautioned one Yuba farmer.

An impulse magneto insures easy starting.

“Have to get off the seat to open and close the petcocks on the track oiler,” complained another. “Why do n’t you put your oil reservoir in the transmission case with a handy master control cock?”

We have simplified the track oiling to the last degree.

“No track bolts to tighten? That’s my idea of heaven!” declared a five-year Yuba customer.

No, the link, track angles, and track plate form an integral manganese link. The tread shoes or grouzers are riveted on.

“Does n’t mark even hot asphalt,” declared another Yuba owner. “But just on account of these tread bolts the road supervisors look at it suspiciously.”

There are no track bolts in the Model 15-25.

“Some day you fellows will put a double clutch transmission in the smaller rig!” prophesied one operator.

We have! Independent track control, one tread reverses while the other drives ahead! The same as in the transmission of the 20-35 Oversize Yuba!

“And put a glass container on the dust catcher so I can see when it needs emptying,” said the same man.

A glance shows when the new Donaldson Air Cleaner needs attention.

“House-in that track drive,” said another.
The drive gear is protected from dust and dirt.

“If you want to please ME,” grinned one friend, “you’ll make it possible to change gears without getting out of the seat.”

The new gear shift control will suit even a lazy man.

“Your engineer never sat in THAT seat for a 10-hour shift!” declared one Yuba owner.

The new seat has a back and a safety support.

Unhampered by false standards of economy, our engineers have been free to use the finest materials and plenty of them. They have sought and weighed suggestions from Yuba owners, salesmen, and service men.

And it rather pleases us that there were no radical changes to be made—that most improvements were for “driving comfort.”

A postcard brings word of price, delivery and full specifications of this new Model 15-25.

Yuba Manufacturing Company

433 California Street, San Francisco, Cal.

Factories at Benicia and Marysville, Cal.

This machine will be on display at the National Tractor and Implement Show of the West

NOTES

Hundreds were carrying around dolls with "real hair" and in a state of more or less undress. These dolls could be bought "for only a dime," according to the spielers who were running the gambling joints. Thousands of kiddies got a good start in the gambling game.

The biggest market basket in the world was shown in the Sonoma County exhibit. It was some eight or ten feet long, perhaps six feet wide and the handle standing perhaps that high from the bottom of the basket. It was filled with Sonoma County eggs. That basket, by the way, represents some \$15,000,000 worth of eggs annually.

There were some slight deficiencies in the exhibits. For instance, as one of the greatest apple growing states of the Union there should have been a far more extensive and better quality apple exhibit. We were reminded of the time when one little community, Watsonville, held an apple show which contained a dozen or more carloads of apples displayed in all imaginable ways. We think one husky six foot man could have carried all the apples exhibited at the state fair if they had been placed in two large baskets.

Another deficiency was in cotton. Kern made an attractive exhibit in which cotton was one of the principal features, but with the vast quantity of the finest cotton on earth raised in California, why not more at the state fair?

Yolo and Sacramento Counties made fine exhibits, but were not competing for any of the money. Yolo has heretofore competed, but this year she determined to join her sister county, Sacramento, in acting as hostess.

When the citrus industry is considered in the light of the fact that it brought to the state last year in excess of \$80,000,000, there should have been a greater quantity of citrus fruit. A remarkably fine display was made by Los Angeles County. That county had even kept in cold storage Washington Navels nearly four months past their season. Her display of Valencias and of lemons showed high quality fruit.

The 6,500 members of the California Peach Growers, Inc., made fine display of package goods.

"Practically Peeled" made remarkably fine appearing 25 pound surfaced goods.

The greatest number of people represented in any one exhibit was perhaps in that of the California Associated Raisin Company. 10,500 members were represented in its exceptionally fine exhibit.

The Del Monte people made fine exhibit of California canned fruits, displaying liberally the slogan, "A California Contribution to the National Market Basket."

Northern California Milk Products Association made friends for itself and for the dairy industry by serving various milk products, especially buttermilk.

One Japanese silk culturist made large display of cocoons and manufactured silks and explained possibilities of California in sericulture.

The weather was cool during the entire fair week, in fact, there was in the great new agricultural building Drifted Snow—Sperry's.

One little girl remarked, as she looked in the big glass aquarium of the state fish commission: "Daddy, did they paint those beautiful red spots on those golden fish?"

That fish commission exhibit, by the way, was a wonder. There was a large pool with the wonderfully attractive background of the Sierra Nevada, snow clad peaks, waterfalls, pine trees, both real and painted, and the pool filled with hundreds of golden, speckled and rainbow trout. The crush to see was evident nowhere else to the extent that it was along the rail in front of this exhibit.

San Luis Obispo County made one of the best exhibits of evaporated or dehydrated fruits on the ground.

Mendocino's exhibit of cheese showed that her resources are not confined to redwoods and apples. She also had a fine exhibit of wool.

Santa Cruz County featured the egg laying contest.

Lassen, Modoc, Siskiyou, Shasta and Trinity united in keeping open house in a quaint shake covered structure. Minerals were exhibited freely, but the greater portion of the house was filled with agricultural products. One feature of this exhibit was a silver cup surrounded by canned fruits, the work of a 12 year old Shasta County canning club girl.

Not so with Calaveras County. Her greater exhibit was of minerals and it was wonderfully attractive.

Tehama County with its wistaria trimmings devoted much space to the Iron Canyon project.

A striking feature of Monterey's exhibit was the display of grains.

Earle Mills presided over Butte County's peaches. Some peaches! He was assisted by Mr. Burkett, who insisted that Paradise Valley pears and apples were the equal of any in the world.

Alameda County's exhibit was diverse, and yet the greater portion of the display space was taken up by the great California Nursery exhibit.

The forestry division of the U. S. department of agriculture taught method of handling camp fires in the mountains and fire protection through a wonderfully life like camping scene.

Fresno's peaches and raisins, figs and olives, orchard and field products were gathered together with remarkable taste in their display.

Next was San Joaquin with its almonds and grapes, seeds and general agricultural products.

Barley was the motif in the Placer County exhibit, but underneath the booth, which was largely made of barley sheaves, was a display of fruits showing wonderfully diverse production.

One of the most expensive and attractive feature displays was that of the California Almond Growers. The Blue Diamond brand of almonds was featured in every conceivable form. The attractiveness and magnitude of this exhibit gave quick vision of the worth of this industry to California. The exhibit contained some of the finest quality of almonds, we believe, ever brought together.

Adjoining the almonds was the Kings County exhibit. Its hangings of tiny ribbon gave an effect as dainty as a girl in a new pink dress. However, its exhibit was not all in dainty (Continued on Page 370.)

HEADLIGHT OVERALLS

UNION MADE

OUTWEAR TWO ORDINARY PAIR



Guaranteed to Wear Twice as Long

as ordinary overalls. Remember, when you price overalls, that the guaranteed double service of Headlights really cuts their selling price in two. Also, they are unusually comfortable, due to the extra yardage of denim that goes into their manufacture.

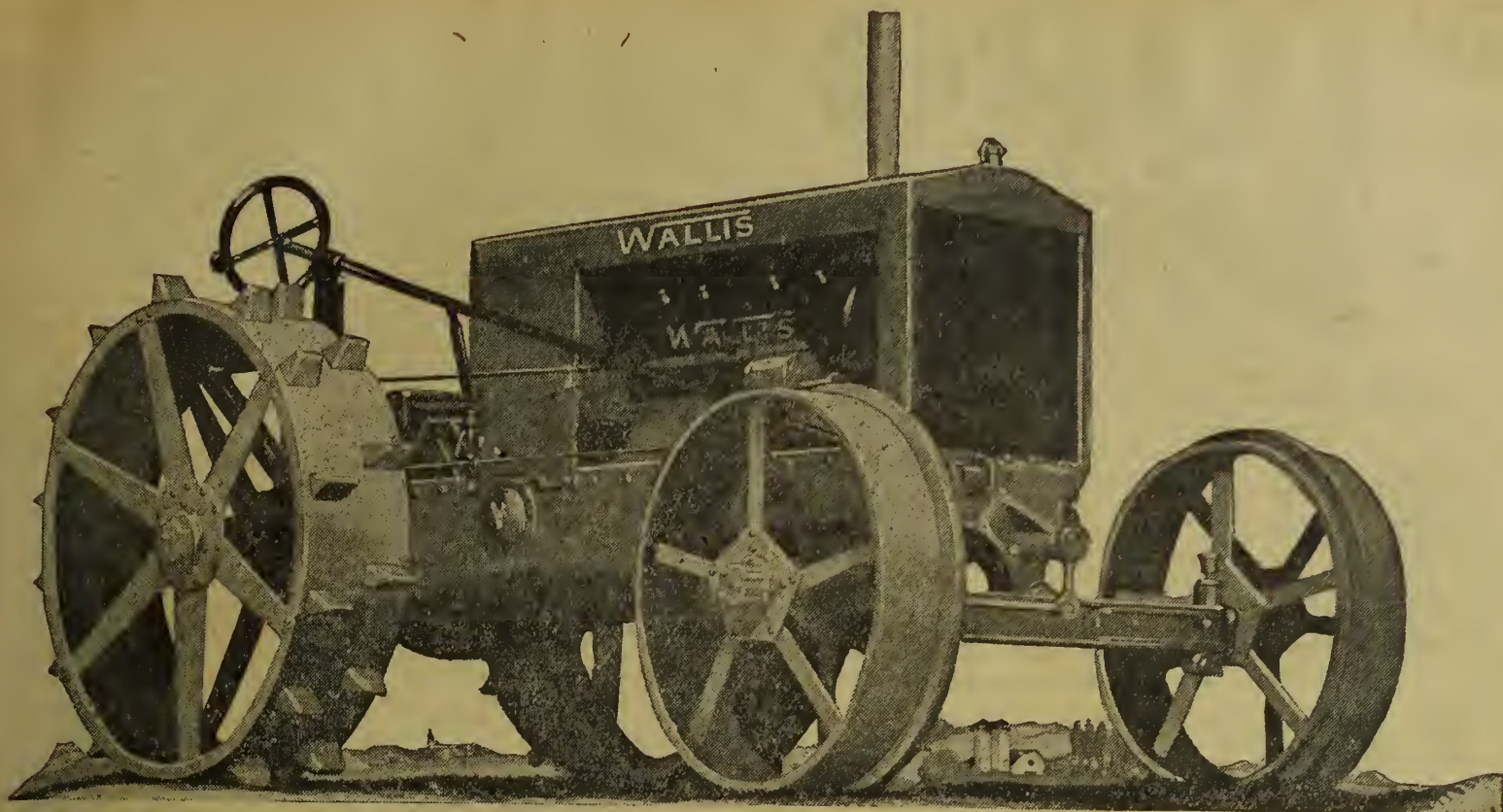
If Headlights don't last you twice as long as ordinary overalls, and afford greater comfort in the wearing, you get your money back.

LARNED, CARTER & CO., DETROIT
World's Greatest Overall Makers

Factories: Detroit St. Louis San Francisco Port Huron, Mich.
Perth Amboy, N. J.

Canadian Factory: Toronto, Ontario

(43)



“There’s the Wallis”

A center of great interest at the show will be the Wallis, AMERICA'S FOREMOST TRACTOR. Fresh from another year of splendid performance on the farms of the West and Middle West, the Wallis comes to the California Show with a convincing record of performance.

The Wallis has proved itself the tractor of the future as well as of the present. It has more drawbar horsepower per hundred pounds of weight than any other tractor on the market! It is the only tractor with the famous U-shaped frame that has revolutionized tractor

design. The U-shaped frame, together with the cut and hardened steel gears, enclosed construction, sturdy, heavy duty engine, and many other features, have made it AMERICA'S FOREMOST TRACTOR.

The Wallis has come to California to stay. The California branch is organized to serve the special need of California farmers. We invite you to ask members of this branch to show you why Wallis power means more acres per hour, whatever the field operation.

See the Wallis — talk with Wallis owners — and visit our branch.

J. I. Case Plow Works Company
Racine, Wisconsin

California Branch: 240 East Sixth Street, Los Angeles

WALLIS

—more acres per hour

NOTICE: We want the public to know that the WALLIS TRACTOR is made by the J. I. CASE PLOW WORKS COMPANY of Racine, Wisconsin, and is NOT the product of any other company with "J. I. CASE" as part of its corporate name.



The TORO

Way of Motorizing the Farm



TO-RO Cultivator

The TORO is the final achievement in useful, adaptable farm power equipment that makes the motorization of the farm complete. It is two standard machines in one—an efficient two-row cultivator and a dependable tractor. Each operates independently of the other and the dual equipment does the work of from two to four horses.

Readily Changed

—from Cultivator to Tractor
—from Tractor to Cultivator

Use as a tractor to pull two 10 or 12 inch plows and to prepare ground for seeding and plant seed. Then use as a cultivator until harvest season and change back into a tractor for fall plowing, hauling, belt work, etc. The conversion is as simple as changing a tire on your car.

Call and See It

We will gladly explain its operation in every particular.

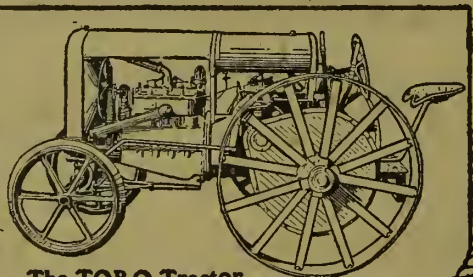
Motors Equipment & Tractor Co., Inc.

1310 So. Grand Ave., Los Angeles, Cal.

With these Parts the Cultivator is Changed into the Tractor.

Sold as a Cultivator with Tractor parts as accessories, or as a Tractor with Cultivator parts as accessories.

Manufactured by
Toro Motor
Company
Minneapolis



The TORO Tractor

Sandstrom Tractor Scraper

An Ideal Scraper to Do Your Leveling

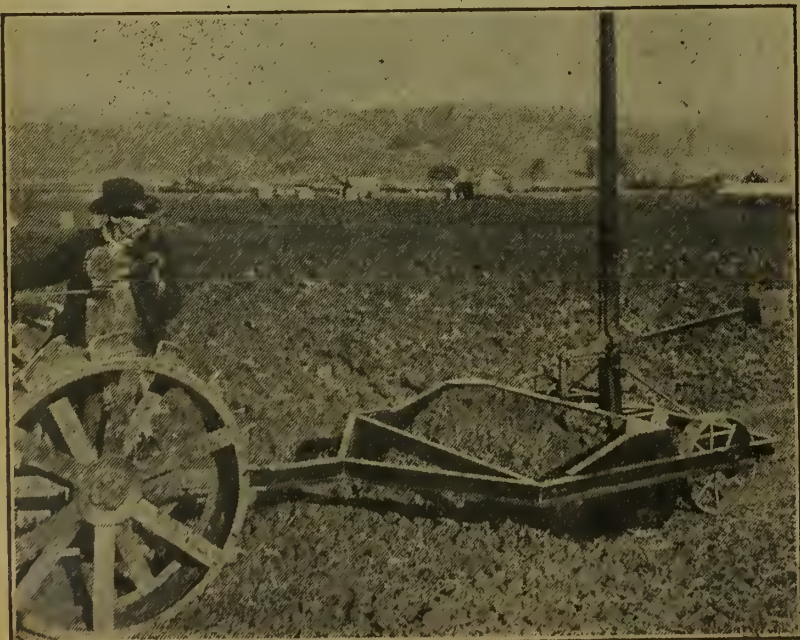
It is light draft and operated by driver from the tractor seat

Made in 3 Sizes for Small or Medium-Sized Tractors

Manufactured and Distributed by

B. SANDSTROM 1822 Nason Street, Alameda, Cal.

Dealers wanted everywhere



Fighting Argentine Ants in San Bernardino

The meeting at the Grand Terrace school house on September 9 to inaugurate a drive to exterminate the Argentine ant was well attended and we hope will result in good to the community.

About 100 people took supper and nearly twice that number attended the speaking later in the evening. Mr. Borden of the U. S. department of agriculture gave us his experience in the Upland district and emphasized the need of thorough work in the handling of the pest and the slight expense of getting rid of the ants as compared with fumigation to get rid of the soft brown scale and mealybug. Mr. Cummings of the Highgrove Fruit Exchange gave facts and figures to show the difference in returns from groves lying adjacent, one being well taken care of and the other lousy with scale; also the difference between property of absentee owners and that whose owners were on the job all the time.

Harry Chase of the National Orange Company gave results accomplished by that company from the use of ant poison in getting rid of the Argentine ants on about 400 acres of citrus fruit and advocated hiring persons to place the cans on the trees to be sure it

was done well. Prof. Vaile of the Riverside citrus experiment station spoke of the necessity of cooperation in the work, as it was discouraging for a farmer to clean up while his neighbor kept a hatchery to raise a new batch. County Horticultural Commissioner Coy spoke of the law and promised that if a large per cent of the farmers cleaned up he would see to it that the rest followed their lead.

The committee had secured very favorable figures on the prepared poison and subscriptions were taken for the material to do the work.

The next morning at a meeting of the executive committee it was decided to thoroughly inspect the groves in the community, regardless of county lines, and arrange to have the work of putting up the poison begun early in October, as that seemed to be the favorable time for best results.

W. J. Van Petten of Grand Terrace was given charge of the work and he has districted the territory to be covered and will appoint an assistant for each district, who will thoroughly inspect the land in his territory and report per cent of infestation, number of cans required and secure the cooperation of the owner in the work.—An Interested Owner.

Notes From the Tractor Show

Manager Guy Hall reports the number of exhibitors will materially exceed a hundred. The number of exhibits it is impossible to predict, but one exhibitor will have six different lines of manufactures and the number of his exhibits will exceed 75.

B. Hayman, with a long line of exhibits will give to inquirers unusual opportunity to gather a fund of information. In the first place the company will have implements from several large manufacturers, and each of these manufacturers will be represented by at least one from the factory. The Roderick Lean Manufacturing Company's representatives will be P. A. Eikers and Mr. Jensen. The S. L. Allen Company will be represented by W. D. Collins; Emerson-Brantingham Company by J. R. Card; Light Draft Harrow Company by P. F. Arney; Smith & Son by either Ed Smith or Mr. Hutchinson.

The A. F. George Company will make a showing of that old standby, Yuba tractor, and the Rex concrete mixer.

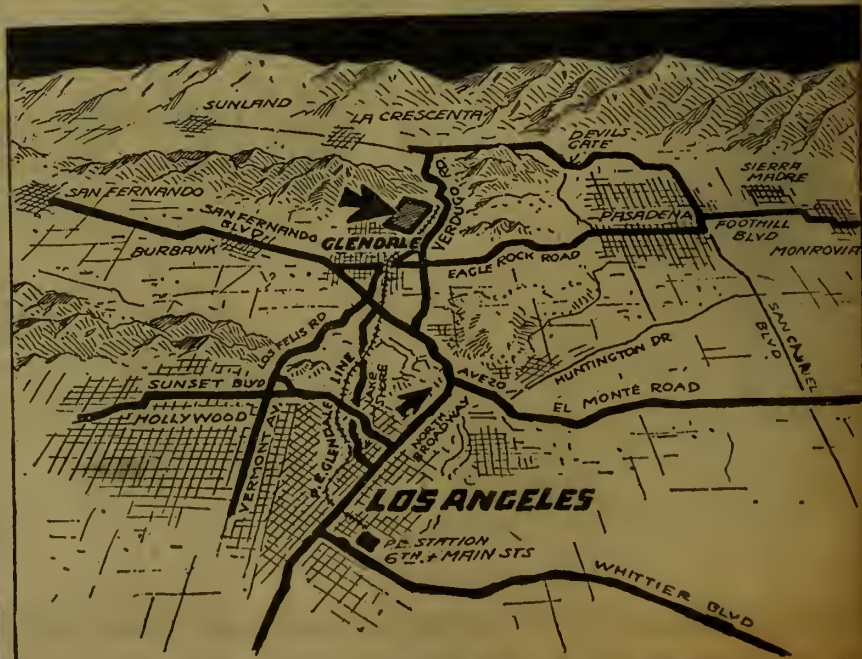
The C. S. Anthony Company and Robert H. Green, coast distributor of Monarch tractors, will have on exhibit a new model of the Monarch tractor. This new model has all of the working parts made of manganese steel, in fact, it is an all steel machine, built to wear forever and a day.

The W. L. Cleveland Company will exhibit the new Kardell 10-20 and 12-25. The Kardell is equipped with a

new Midwest motor. Roy Cleveland says it is in the 100 per cent efficient class. The Cleveland folks will also exhibit the U. S. truck, concrete mixers and Faultless gas engines. H. W. Kardell, inventor of the tractor, will be there and give personal attention to inquirers. There will be some action, even real movies, in the Kardell exhibit.

H. G. Knapp, manufacturer of the Knapp tractor plow, will attend the demonstration and will have the special Fordson plow on exhibit at the William L. Hughson space.

The Ford Motor Co. and Wm. L. Hughson Co. exhibit Fordsons, Oliver and Roderick Lean lines, American Seeding Machines, cutaway cross section Fordson. For the first time Ford, Oliver and Hughson Cos. will assemble complete line. Chief Designer Altgelt, James Oliver and Sales Manager Collins represent the Oliver Co.; Wm. L. Hughson, Manager S. W. Nerney, Harry Lamster and O. R. Peterson of S. F., Manager H. W. Nerney, L. A., will represent Hughson Co. The Ford Motor Co. will be represented by Western Manager B. L. Graves, Assistant Manager I. B. Groves, and B. F. Davis of S. F. Other Eastern representatives will be Howard Seeley, manager of the tractor implement department of the Oliver factory, and Marshall Collins, sales manager from South Bend, Indiana. Mr. Ackley of the Woods Bros. Threshing Machine Co., Mr. Eikert of the Roderick Lean Co. of Mansfield, Ohio and Fred Serviss of the American Seeding Machine Co.



Roads that lead to the National Tractor Show of the West

THE great popularity of the Gray Tractor throughout the Middle West, Canada and European countries is the result of satisfactory service to the men who own them.

Dealers who sell the Gray Tractor are seldom called upon for repairs or to give mechanical attention. Owners who have had Gray Tractors for five, six and even nine years say that their tractors are still giving very satisfactory service.

The Gray gives such universal satisfaction because it is built right from start to finish.

On Display at the Sacramento Fair And Los Angeles Tractor Show

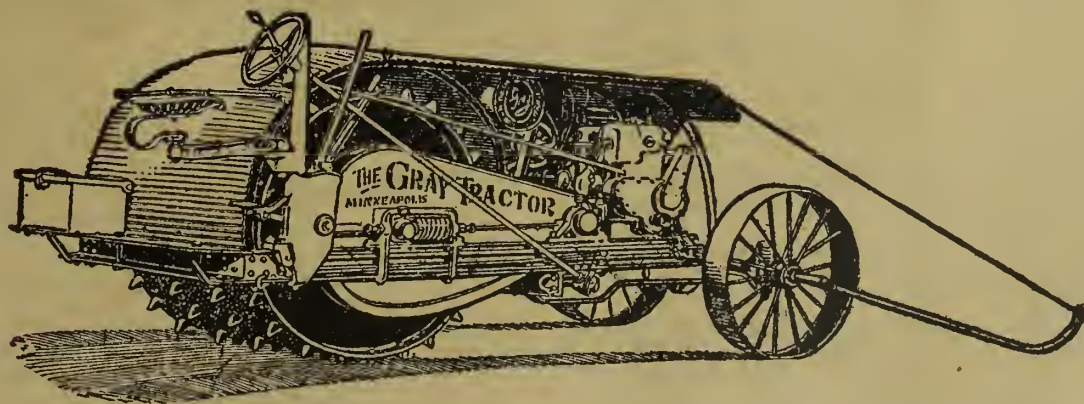
Mr. John Hughes and other representatives of the Gray Tractor will be glad to meet those who are interested in buying a Gray or in securing the agency for its sale.

Catalog on Request

Gray Tractor Company, Inc.

30th Avenue, S. E.

Minneapolis, Minnesota



TEAGUE TREES

Stand Supreme For Growth and Productiveness

You can't afford to buy anything but the best if you expect remunerative returns from your grove.

CITRUS TREES

Ours are the best that can be produced and always give satisfaction. Why take chances on inferior stock?

AVOCADOS

We still have a few extra fine field grown trees of the recommended varieties ready for immediate delivery.

FEIJOAS

Every garden should contain at least two plants of this delicious fruit. Will grow any place in California. Send for our new descriptive price list.

The R. M. Teague Nurseries

Box A San Dimas, California

Founded in 1889 by R. M. Teague



At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

The Mutual Tractor Unit



THE adjective "mutual" describes the fundamental principles of the Mutual Tractor Unit in one word.

It is a cooperative organization. Each rancher has a direct interest in the work carried on by the company. When first organized the rate per acre was fixed at \$25. This was enough to secure the necessary equipment to start the work. Later additional equipment was purchased with the proceeds of the earnings of the outfit. A fixed rate per hour is set for the cost of operation. This covers the cost of operation and allows sufficient surplus to cover depreciation on the equipment.

At the present time the equipment consists of three tractors, two cultivators, two harrows, two disk harrows, one furrower, a spray rig and team, with wagon and use of small harrow. This outfit handles about 200 acres of five and ten acre groves, grouped fairly close to each other.

All branches of orchard work are handled; furrowing, irrigating, spring tooth harrowing, cultivating, as well as spraying for spider and scale, pruning, etc. Disk harrowing, especially in the spring, is one of the most important features of the tractor work.

As practiced in this organization, this work begins late in January or early in February to prepare the ground for successfully holding the moisture uniformly during the blooming period. Disk work is immediately followed by harrowing to clear the ground of any trash that may be left from unfinished disking. This is followed by deep cultivation. This work, of course, is carried on as the weather and condition of the ground permit. So far all groves have been prepared for irrigation early and are in excellent moisture condition of the soil. Early spring schedule of the work was arranged in accordance with priority of order from each rancher. The summer schedule is determined by the irrigation schedules. This gives a definite method of procedure for the organization to follow.

As the equipment is sufficient to handle 250 acres the service given is both prompt and of a high grade. Soil handling under proper conditions is one of the special aims of the management. This is carried on with the purpose of both handling the soil at the proper moisture content and of sufficient depth to hold the moisture for the maximum length of time possible.

Each employee is a carefully chosen man and from the start is taught the best and quickest way to obtain the best results. He is given every consideration and any suggestion on his part is taken up by his employer and, if practical, put into operation. This gives the individual employee an active interest in the working of the organization.

Operation records are kept and are of such character that loss of time and inefficient methods are reduced to a minimum. This keeps the employee interested and the employer satisfied that operation costs are within reason.

Spraying is carried on at irregular periods, depending on the necessity of control for spider and scale. Spray guns are used, operating under pressure of 300 pounds. The guns are used in preference to the sticks, as the under sides of the leaves are thoroughly wet when spraying for spider, and the interior foliage and limbs are more easily wet and there is less chance of an inferior job being done in the case of scale.

In actual operation of the unit the work is carried on under varying conditions of weather and of varied type, as desired by the individual rancher. It may be of interest to note, however, that the general soil handling and ordinary orchard methods are closely similar, regardless of varying type of soil. The same type of machinery is used on all types of soil. Time allowances and the amount of weights carried, however, vary with the type of soil and moisture conditions of similar soils.

MACKIE TO INSTALL VACUUM FUMIGATOR AT PORTLAND

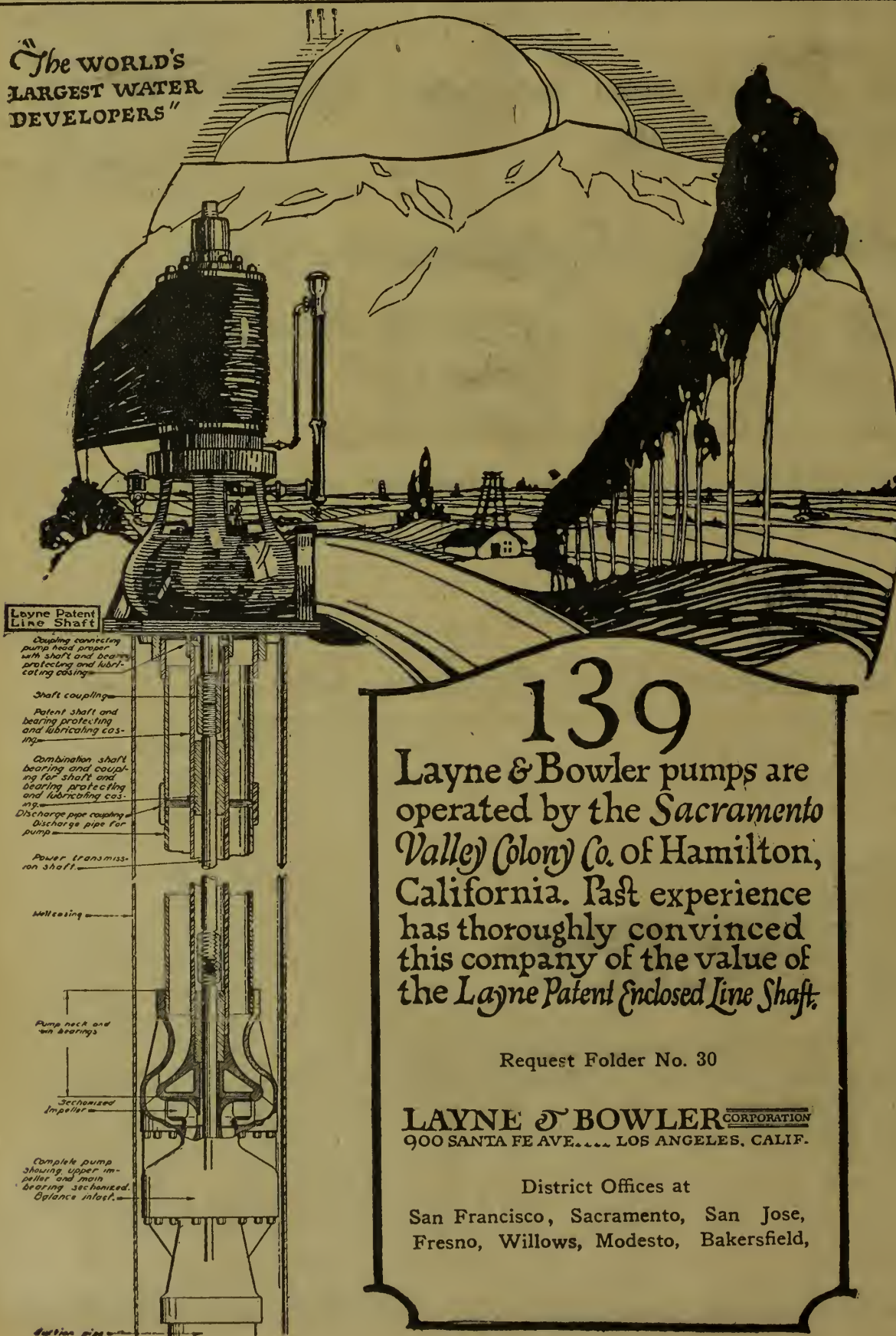
D. B. Mackie, field entomologist in the office of pest control, California department of agriculture, left his headquarters at Los Angeles for Portland, Oregon, to supervise the installation of a large vacuum fumigator for the Kings Food Products Company.

The installation of this vacuum fumigator will mark the commencement of a series of similar fumigators to be established on the Pacific Coast for the purpose of fumigating food products. The successful experiments in vacuum fumigation conducted by the office of pest control of this department in California, especially with regard to the fumigation of food products in the ultimate container before reaching the consumer, will undoubtedly lend impetus to the coming adoption of this method of safeguarding food products generally.

PINEAPPLES IN HAWAII

Through the Honolulu Star Bulletin it is learned that pineapple packers in Hawaii consider this year to be the biggest the industry has ever known. It is anticipated that 6,000,000 cases of pineapples will be packed during the year, daily deliveries already averaging about 65 carloads.

"The WORLD'S
LARGEST WATER
DEVELOPERS"



139

Layne & Bowler pumps are operated by the Sacramento Valley Colony Co. of Hamilton, California. Past experience has thoroughly convinced this company of the value of the Layne Patent Enclosed Line Shaft.

Request Folder No. 30

LAYNE & BOWLER CORPORATION
900 SANTA FE AVE., LOS ANGELES, CALIF.

District Offices at

San Francisco, Sacramento, San Jose,
Fresno, Willows, Modesto, Bakersfield,



PAIGE

THE MOST BEAUTIFUL CAR IN AMERICA

IT is a matter of common knowledge that our sturdy Paige Glenbrook model marks a distinct advance in the building of light sixes. Scientifically considered, it stands as the embodiment of an entirely new conception of mechanical excellence in a car of five-passenger size.

The Paige Glenbrook, it must be remembered, is distinctively a product of the war period. Three years of constant research and ceaseless experiment were devoted to it by Paige engineers before it was ultimately perfected.

Its six-cylinder motor is a product of unusually high refinement, reflecting in every particular

the standards of precision and accuracy developed by the war. And, in body and chassis also, it is a striking example of twentieth century progress in both design and construction.

The Paige Glenbrook is, therefore, in every sense of the word, a strictly modern achievement representing the best that automotive engineering has ever produced in the building of light sixes.

We ask that you give this due consideration before deciding upon your next motor car purchase. If you value true efficiency and dependability in a motor car, your choice will undoubtedly be a Light Six Paige.

PAIGE-DETROIT MOTOR CAR COMPANY, DETROIT, Michigan

Manufacturers of Paige Motor Cars and Motor Trucks

Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877
Combined with California Cultivator 1914
Livestock and Dairy Journal, Established 1901,
Combined with California Cultivator 1916

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The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.



Member Eastern Offices:
Ned Costello, Steger Building, Chicago, Ill.
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Saturday, Sept. 18, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

EDITORIALETTES

Tough luck! Enormous amount of most interesting stuff ("stuff" is a perfectly respectful term used by printers for copy) regarding the state fair must be held over.

* * *

It was a great fair in every department. We had some long editorials. They were to be colored in violet and purple and red, white and blue, but we will let the first five words of this paragraph express them all.

* * *

But, forgetting the things which are past, there is another great event coming, the National Tractor Show, beginning next Monday morning at Verdugo Woodlands. The brownies, the kewpies and all other fairy folk have been making more beautiful one of nature's beauty spots.

* * *

Tractors, trucks and other forms of farm power are being installed. Tools and implements which make men's labor lighter are being arranged for inspection. It is going to be a great show.

* * *

Then there is another show coming. It is of livestock and will be held in Los Angeles, October 2. More of that later when we have more room and more knowledge of its various features.

Tulare County fair is closing as we write. Earth's bounties, as bestowed by Central San Joaquin Valley, are being shown.

* * *

Likewise San Fernando Valley fair, not far from Los Angeles, is exhibiting this week its pure breds and its soil products.

* * *

Next week there will be Kings County, San Diego County, Ventura County all dressed up and a place to go—their own county fairs.

* * *

The following week Glenn County, Fresno County, Shasta County, with other counties scheduled for the next.

* * *

It's a great educational season. We hope some of the scenes of things seen at the state fair and some of the pure breds there exhibited and illustrated in this issue will induce liberal attendance.

* * *

California cooperation has succeeded all too well. It must be discouraged. The wheels are grinding, set in motion by the federal government. We believe it is an unjust attack; we are positive it is a most unwise one. If the attorney general wins a great industry will be discouraged and growers will be ruined.

* * *

Last Saturday we rode in a long, long procession. More than a mile the autos stretched out. It was not a funeral though it was made up largely of lemon growers. We rode from orchard to orchard—in Ventura County; we asked questions of the soil, of the trees, of the house where bugs and insects are propagated, of packing houses and of each other. We ate a most delightful meal and talked of discouragements now confronting the grower. A number of really interesting things will be told about it and some interesting photographs shown next week.

* * *

Again, harmony and success. Arizona cotton growers and quarantine officials and California cotton growers and quarantine officials have not fully understood each other. They met; they talked; they agreed. Old quarantine regulations aimed to control cotton seed movements only. New regulations ask for similar control over lint, waste, sweepings, seed hulls, bags and bagging and second hand cotton machinery, also disinfection of cars at state line. This was all at a meeting held in Los Angeles this week. More details later.

FARM BUSINESS

The department of agriculture has issued Farmer's Bulletin No. 1139, "Method of Analyzing Farm Business," to induce more successful business methods of farm management. We have seen no reference in it to the fact that these directions might enable the farmer to get by with less of confusion when the time comes to make out the income tax return, but that time will soon be here, in fact, within a very few weeks. It is exasperating to the best of bookkeepers; it certainly is perplexing for one whose whole effort is given to the production end, but a bit of bookkeeping is necessary for us all and we believe this bulletin, which may be had for the asking by writing U. S. Department of Agriculture, Washington, D. C., will aid the farmer materially in definitely stating the exact financial condition of the farm account.

Raisin Growers Attacked



THIS government of ours is a peculiar and complex thing. It is a government of the people and for the people, yet individuals, or at least divisions of the government, must be given great power and the possibility of doing great injury to many of the people. A case in point at this moment is the suit against the cooperative association of raisin growers.

A more truly beneficial cooperative association never existed. Years ago the present members of this association were 10,000 individual vineyardists, discouraged, almost ruined, by a raisin market under control of united buying and shipping interests. In their desperation these raisin growers united; they secured justice and that without unjust tax on the consumer.

Naturally, during the past two years raisins, as well as all food products, have advanced. The success of the growers has called for most intense opposition on the part of interests which were injured commercially. In addition the office of the attorney general has been making investigation as to any possible violation of the anti-trust laws. This has resulted in recommendation being made to the company. These recommendations were received and are being acted upon by officers of the cooperative concern, but for some reason at the beginning of the marketing season of 1920 the attorney general's office has gone still farther and petitions

"That the court upon such application and hearing issue its preliminary injunction against the defendants and all other persons whose names are unknown to the plaintiff, unlawfully acting, combining and conspiring with them as aforesaid, and all other persons whomsoever, commanding and enjoining them, pending the final hearing of this cause, not to enforce, or threaten to enforce, or suggest the enforcement of, any of the contracts heretofore made between the defendant corporation and growers of raisin grapes requiring the later to sell and deliver their crops of such grapes to the defendant corporation, on any terms, liens or conditions purporting to be provided for by the terms of such contracts or any of the contracts heretofore made with jobbers or wholesale dealers requiring them to purchase raisins from the defendant corporation at prices fixed by the defendant corporation; and not to employ any of the other above described means or methods of monopolizing trade and commerce in raisins and raisin grapes."

Naturally the Associated must fight this attack; its existence and the existence of raisin growers depends upon this cooperative movement. The directors are considering methods of procedure. We note the following in the Fresno Republican of September 11:

"The first tilt of the big battle is set for Monday, September 20, when the Associated's representatives must appear before Judge Bledsoe in Los Angeles to show cause why an injunction should not be issued restraining further operations by the organization. In the opinion of Judge Lindsay no such injunction will be granted as the loss to the defendants in such procedure would be tremendous, with no chance of indemnity even in case of subsequent vindication in the trial of the suit.

"The attorneys for the defendant corporation will present to the court numerous affidavits to establish that there was neither coercion nor intimidation nor other improper means employed in procuring signatures to contracts from growers.

"It is admitted that in the remote possibility of the court's granting the injunction, the Associated will be seriously affected. The law will be obeyed, it is said, and no subterfuge or evasion will be resorted to. No such development is anticipated, however, and it will be many months thereafter before the suit itself will come to trial.

"That we have been singled out for prosecution from among all the cooperative farmers' organizations of the country is of course a tribute to the activities of our friends and well-wishers, the independent packers," said President Wylie M. Giffen yesterday. "We have always prided our-

selves that the company observed the law, dealt fairly with its members and its customers and kept the raisin business from degenerating into what it was before the days of organization, a football to be kicked about at the whim of the packers. In these days the grower took what the packer was willing to pay him, and there is none of us who drudged in the vineyards in those days who has not partaken of the benevolence of these same outside packers, usually represented by red ink. It would be somewhat amusing, were it not a serious matter and somewhat amazing if we had not had past experience, to find these packers now protesting with much shocked patriotism against the operations of an organization which has developed a great industry, brought prosperity and progress to a big territory, and conferred blessings upon thousands of people. Where we have erred apparently has been in banding together to sell our product without the assistance of the very man who made our cooperation necessary.

"The very principle of cooperative farming is concerned in these proceedings, for unless farmers can be permitted to cooperate under a system that gives their organization real solidity, they can accomplish little. We cannot go back to the old conditions when we were at the mercy of the packers. Our cause is just and because it is just we look for vindication that will end for all time the vexatious shafts of legal attack aimed at us by competitors."

In the meantime the Associated Raisin Company has taken its case direct to the growers, and is appealing to satisfied raisin growers to rally to the support of the company. Those who signed their contracts willingly, and who wish to help in protecting the interests of the association are asked to sign affidavits to that effect and rush them to the raisin company offices.

"If you were 'coerced' your contract will not be enforced," is the declaration which the Associated is sending broadcast to its members, replying to the charges that growers were forced into the association."

Senator Phelan makes an especially strong appeal for the growers in the following telegram to the attorney-general's office:

San Francisco, Cal Sept 10, 1920
Honorable A. Mitchell Palmer
Attorney-General of the United States.

I believe the suit brought by your department of the government against the Raisin Growers Association threatens great injury to a large number of worthy people who have developed this great California industry along cooperative lines. This is one of the worthiest cooperative associations in the United States and one of the most successful and beneficial. It represents the true principle of cooperative association. It has reached a result in practice that is being sought by farming and labor associations throughout the United States. I am informed that the basis of the accusation against this most productive people is that there are some technical objections to the procedure under which they operate. I am also informed that these technical points can be readily removed. It would seem, therefore, that when a great principle like that of cooperation is involved that there must be some method of adjusting technical points of organization other than that of dragging a great industry and its enterprising representatives before the court. In presenting these views I very respectfully call your attention to the obvious fact that this is the harvest season when the banks of this state are co-operating with the individual growers to enable the harvesting and transportation of the raisins. No time could have been selected for the bringing of this suit which would have done greater injury to the many people concerned than the present time. There are more than ten thousand growers concerned. The association under attack has the only facilities in existence for the handling of this crop. The organization has been in existence for many years. The harvest time would seem certainly a most inopportune occasion for the government to bring an action to determine legal questions that have been in existence

(Continued on Page 366.)



Now

Northern California Will Have Railsback Service On Allwork Kerosene Tractors

To the hundreds of farmers in Northern California who have felt the need of thoroughly efficient service to help them get the utmost earnings from their Allwork Kerosene Tractors, we take pleasure in announcing that we have been appointed distributors for the Allwork Kerosene Tractor for Northern California and Nevada, in addition to Southern California, which we have heretofore represented for Allwork Kerosene Tractors.

Allwork Kerosene Tractor

L. M. Railsback Company

REPRESENTING Allwork Tractors

Northern and Southern California, Nevada, Arizona, Hawaiian Islands and Philippines.

Killefer Farm Implements

Service—parts and the complete Killefer line in Los Angeles County.

Oliver Plows

Los Angeles County

Oliver Sulky Plows
Oliver Gang Plows
Oliver Disc Harrows
Oliver Listers
Oliver Spike Tooth Harrows
Oliver Spring Tooth Harrows
Oliver Cultivators
Oliver Culti-Packers
Thomas Rakes
Thomas Crown Mowers
Black Hawk Spreaders
Black Hawk Planters
Steel Wheel Trucks
Hardie Sprayers
Superior Drills
Winona Wagons
Aspinwall Potato Machinery
Knapp Orchard Plows

Now Northern California and Nevada farmers will have the same high grade Allwork Kerosene Tractor Service that Southern California farmers have enjoyed. Our Service to owners of Allwork Kerosene Tractors is complete in every detail. A full stock of parts is carried—and we have engaged a staff of skilled mechanics who are experts on Allwork Kerosene Tractors.

Before you buy a tractor—be sure you will be able to secure prompt and intelligent service. Compare other service offers with Railsback Service. Note the thoroughness of Railsback Service in every detail—and how we help you get the most earning power from your money-making Allwork Kerosene Tractor—the tractor which has proved to be the ideal for every California requirement.

Burns Kerosene—More Power Less Expense

No special kerosene carburetor required with an Allwork Kerosene Tractor—because the Allwork engine is designed and made to burn kerosene. And experience in California under varying soil and climatic conditions has proved that the Allwork is the one successful kerosene-burning tractor.

MADE RIGHT

The Allwork Tractor will require very little service. Many owners have never had to call for service. This is largely due to its scientific design and construction. It has Timken bearings—turns in a 9 foot radius (ideal for orchard use)—differential with short twin brakes—weighs 4,500 pounds—height 55 inches—width 50 inches—five bearing crankshaft—oil enclosed governor—has swinging drawbar and three speeds forward and reverse.

KILLEFER Farm Implements

We now have the agency for Los Angeles County for the famous Killefer line of farm implements. These implements will give unusual service—because they are designed and made to meet California soil conditions. Our efficient Service Department insures you the utmost usage and service from your Killefer Implements.

If you are not using Killefer Farm Implements—it will pay you to let us tell you about them, and explain their vast superiority over implements that are not adapted to Southern California requirements.

A partial list of the Killefer line includes Clean-Cut Weeder and Mulcher, Combination Sub-Soil Plow, Gopher and Drainage Plow, Adjustable Extra Heavy Orchard Cultivator, Automatic Double Tractor Disc, Cross-Kill Clod Crusher and Tractor Chisel.

We earnestly urge that you call at our salesrooms and inspect these Killefer Farm Implements.

Visit our showrooms or write for further particulars.

L. M. Railsback & Co.

Los Angeles, California

Implement Division:
115-119 S. Los Angeles St. Phone 67466

Tractor Division:
234 N. Los Angeles St. Phone 12569

MARTIN J. KOPPEL Manager for Northern California and Nevada
Temporary Address, Travelers Hotel, Sacramento, Cal.

Concerning Our College of Agriculture

By Russell T. Robinson, U. C. 1915

ARTICLES appearing in your paper relative to the University of California college of agriculture have attracted my attention. The contention of the writer of these articles seems to be that men coming out of this college of agriculture do not measure up to the standard of those sent out by other such colleges throughout the United States, and that the method of instruction practiced at the institution is at fault. Discussion of the matter is invited and evidently solicited from those holding a certain viewpoint, but I trust that if criticism is to be offered care be taken that it is genuinely constructive, broad minded and free from the desire to air a petty grievance.

As to how the graduates from this

college compare with those from other similar institutions, I will admit I have met very few of the latter class, too few to make a fair comparison. Of those I have met some impressed me as knowing their business well and others as being very deficient. Regarding the men coming from California's college of agriculture, those who have the direction of the college in their hands should be better informed than anyone else.

The last article in the Cultivator emphasizes the point that 130 California men attended Oregon agricultural college last year. Was any attempt made to learn how many young men and women from Oregon have attended California's agricultural college and why they came to California instead of going to O. A. C.? To me it seems like a very serious lack of judgment on the part of anyone who elicits criticism of the greatest weakness of an

institution from one who has never attended that institution.

Last year a questionnaire was sent by the college of agriculture to all its available graduates and the questions asked indicated that improvements in the method of instruction were being given consideration. In fact, one of these questions was whether it was believed that more time should be spent at Davis farm. I will elaborate somewhat on my ideas as expressed at that time.

I believe that the first two years should be spent at Berkeley for the following reasons:

First—There are certain subjects necessarily preliminary to launching upon one's major subject, and these can most advantageously be taken at Berkeley. I believe that work in chemistry, botany, bacteriology, zoology, geology, certain work in soils, etc., can best be given at Berkeley because the most advanced facilities for such work are available there, and properly so, because other students besides those in agriculture require this work. To duplicate would throw an unnecessary burden upon the taxpayers. It would be unthinkable to duplicate certain of the library and laboratory facilities,

not that they are so wonderfully fine but the money can be used to so much greater advantage.

Secondly, I contend it is much better for a young man just entering college to find himself only one of several thousand. If he is made of the right stuff it will spur him on to the determination to make good, because he knows if he doesn't make the effort he will fall by the wayside. In the smaller college, where he is one of only a few hundred, it is easy for him to get an inflated idea of his own importance. It may even be possible for him to become indolent and still get by because he gets enough individual attention to pull him through. Perhaps this can be used as an argument for the smaller college, but I am doubtful of the sort of man which would result. In the college, where all are pursuing the same general line of endeavor, does the student not have a restricted perspective? Can he possibly have the broadening influence of a university where he is not in contact with others who are following some entirely different line of activity?

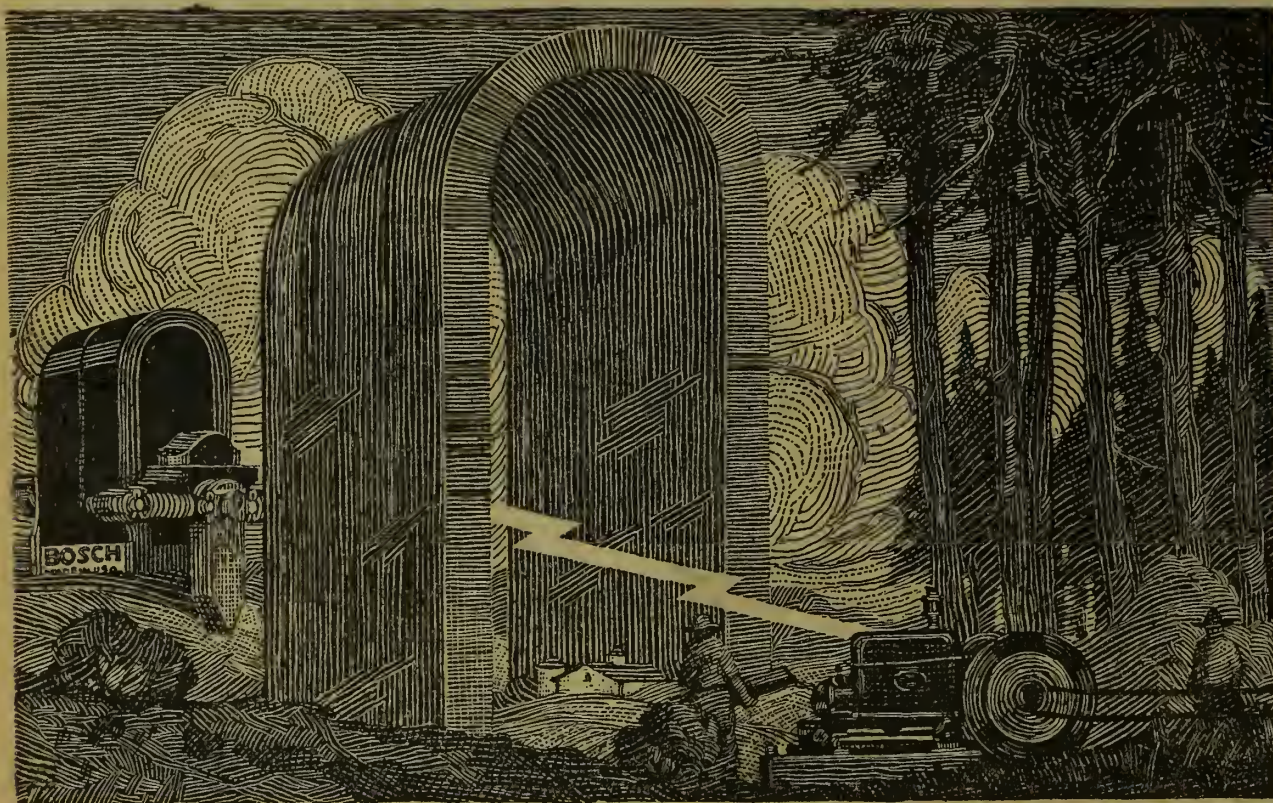
Certain of the letters quoted in the Cultivator speak of the cost of living in Berkeley, and say that men who earn their way are looked down upon by others. City living is always more expensive than rural. If the agricultural college were to be bodily transferred to Davis, city conditions would exist there too. It is also true that Berkeley affords more opportunity for one to earn fairly good money and still continue his college work. I worked all through my four years and never felt that I was looked down upon. I did not join a fraternity, but was the guest of various houses many times during my four years. I think it would surprise the general public to know how many are entirely or partially self supporting while pursuing their college work.

I strongly advocate that the last two years of the university course be spent in residence on the farm at Davis. When the student reaches the point where he is ready to study "types and breeds of farm animals," "farm machinery and mechanics," "irrigation practice," etc., the place for the classroom is in the stock pavilion, around a mowing machine, or beside a weir. There can be no denying that the impressions gained under such conditions are far more apt to be accurate and lasting. I do not believe anyone realizes this truth any better than those who have the direction of the college of agriculture in their keeping. But whether the time which should be spent on the farm is decided as two, three or four years, are the facilities for housing and instructing the increased number of students available at Davis? Decidedly not. Where is the money coming from with which to make such provision?

Along with advocating an improvement, had we not better get behind a movement to provide the means with which to make the improvement? We would not expect an artisan to turn out a fine piece of work when he is not provided with the tools necessary to do such work. How much do we know of the problems before those managing the affairs of the college of agriculture? To offer constructive criticism means that we must first acquaint ourselves with the various phases of the problem and then suggest a workable plan for improvement. I will frankly admit that what I have offered above is only an idea; it is not accompanied by a plan of execution. This letter is, however, an expression of a sincere desire to be of assistance if I can.

"TRACTOR DON'TS"

DON'T
forget to oil and turn grease cups at night, before knocking off, rather than in the morning.
forget that your clutch will wear longer and will give you less trouble if it is not thrown in with a slam.
attempt a short turn where the ground is plowed or soft, no matter whether the tractor is pulling a load or is empty.
do any hammering near the magneto if you can help it.
try to speed up the engine over the mark on the number plate.
run the engine slowly with the spark advanced when you are starting a



BOSCH

HIGH TENSION MAGNETO

SERVICE STATIONS:

Bakersfield: Bakersfield Garage & Auto Supply Co., 20th and G Streets.
Chico: Vaughan & Fordyce, 7th Street and Broadway.
El Centro: C. E. Coggins, 409 Main Street.
Eureka: Blair's Garage, 6th and D Streets.
Fresno: Electric Laboratories, Inc., 1347 Van Ness Ave.
Hanford: Cousins Tractor Company, 110-18 East 7th St.
Lindsay: Central California Electric Co., 182-86 North Sweet Briar Ave.
Long Beach: A. C. Walker, 342 American Avenue.
Los Angeles: Bosch-Rayfield Service & Supply Co., 922-4 South Los Angeles Street.
Los Angeles: E. A. Featherstone, 958 South Los Angeles Street.
Marysville: Geo. W. Roberts Electric Works, 324 D. St.
Merced: Launsbury & Shaffer, 625 M Street.
Modesto: Frank Andrews, 714 Ninth Street.
Oakland: The Motor Car Electrical Co., 2324-2330 Broadway.
Oxnard: Herbert Hedges, Inc., 427 A Street.
Pasadena: Guarantee Auto Electric Works, 97 West Colorado Street.
Red Bluff: Hartman's Electrical Machine Works, 600 Main Street.
Redlands: Ray Ignition Works, 338 Orange Street.
Riverside: Mission Auto Electric Company, 450 Main St.
Sacramento: Kimball-Upson Company, 609-11 K Street.
Salinas: Salinas Auto Electric Company, Allsall Street.
San Diego: Young & Chamberlain, 1130 Front Street.
San Francisco: American Bosch Magneto Corporation, 1262-72 Post St.
San Jose: Auto Electric Service Co., 439 South First Street.
San Luis Obispo: California Garage, 879 Higuera Street.
Santa Ana: Orange County Ignition Works, 302 East Fifth Street.
Santa Barbara: Western Machinery & Foundry Co., Cota & Anacapa Sts.
Santa Rosa: L. & T. Company, 300 Fourth Street.
Stockton: W. S. Maxwell Company, 207-9 North El Dorado Street.
Taft: Maxwell & Thompson, Center Street.
Tulare: Central California Electric Co.
Visalia: Central California Electric Co.
Willows: Automotor Service Station, 253 North Tehama Street.

Farm Hands and Engines

When hiring a farm hand, you try to secure one you can trust—one that works hard and is steady and regular in his habits. You have little patience with men who loaf, waste time and take days off.

Use the same judgment in buying an engine. Select one which is powerful, efficient, and economical—one which will do its work when called upon, without trouble or delay. Buy an engine equipped with a Bosch High Tension Magneto and you're sure to be satisfied, for ignition is the most important factor in engine performance. With the extra big, hot sparks of a Bosch Magneto, every bit of gas in the cylinders is fired instantly even though low grade fuel be used. That insures maximum power, economy and dependability.

Insist on Bosch Magneto Ignition when buying an engine whether used on car, tractor, truck or power plant. Three million Bosch Users agree that it's your best guarantee of faithful, dependable service.

Be Satisfied

Specify Bosch

300 Service Stations in 300 Centers

AMERICAN BOSCH MAGNETO CORPORATION

Main Office and Works: Springfield, Mass.

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AMERICA'S SUPREME IGNITION SYSTEM

MOTOR TRUCKS - TRACTORS - AIRPLANES - MOTOR CARS - MOTOR BOATS - MOTORCYCLES - GAS ENGINES - ETC.



load. Remember to get up motion first.

neglect to watch that gap between the rocker arm and valve stem to see that it never widens to more than 1-16 inch.

get into the habit of running your throttle and spark lever back and forth violently.

think that your motor will shoot on all four cylinders if the spark plugs are not in good order.

blame the stopping of the engine on ignition trouble when it may be lack of fuel.

put off tightening wires and fixing poor connections.

work the tractor when there are any loose bolts.

try everything your friends suggest.

start off without the oil strainer in the bottom of the crank case.

leave tractor ailments to cure themselves. They need careful attention.

do anything you are not sure is right.

be stingy with oil. It is easier to keep the machine greased than to be making repairs.

be too hard on the tractor. Slow down over ditches and rough places.

keep on going when there is a pound in the bearings.

run any risks by filling the supply tank with gasoline when there is a fire burning near by.

attempt mending a leak in a gasoline tank with solder before you have made it safe by filling it with water and allowing it to stand for some time.

do too much filing on contact points in breaker box. It wears them out quickly.

be so anxious to go one more round when there is not much oil in the crankcase.

forget that a little kerosene on your valve stems will clean off the gum and carbon and make them work freely.

disregard an unusual sound when the tractor is working. It needs attention immediately.

be vague in expressing your wants when you write to the manufacturer for extra parts. Tell him exactly what is needed and where and how you want it shipped.

MILLION NEW CARS ADD TO ROAD WEAR

That the present interest in the construction of new highways should not divert attention from properly maintaining highways already improved is a point which the bureau of public roads has had occasion to emphasize many times in recent months, particularly in view of the enormous increase in motor vehicle traffic which is taking place. The bureau recently completed a compilation of statistics from all the states of the Union showing that there were a total of 7,565,446 registered motor cars (including motorcycles and trucks) in the United States in 1919. This is an increase of 23 per cent, or 1,418,829 motor cars over 1918. Such figures indicate that the country's highways are being used far more than in the past, it is pointed out, and in consequence added attention must be given to the repair problem. The increase in the number of cars for 1919 over 1918 represents about ten per cent more cars than the total number registered in the entire United States for 1913.

Additional use of roads and streets has, of course, been accomplished by additional revenue paid to state and local governments in the form of license fees, which in nearly all states are devoted to highway needs. The registration and license fees for automobiles, trucks and motorcycles in use in 1919 totaled \$64,697,255.58—an increase of 20 per cent over 1918. The total revenues for New York and Pennsylvania the past year were about double the revenues received for all motor vehicle registrations and licenses in the entire United States in 1912.

CHINESE CROPS

Manchuria is primarily an agricultural country. The crop most extensively grown is kaoliang, known botanically as sorghum vulgare, the seed of which is the staple food of the natives and is also used as fodder and for the manufacture of a strong alcoholic drink known as samshu. The stalks of this grain are used for fuel

as well as for light construction purposes. Millet, barley, buckwheat, cotton, maize, wheat and rice are grown in moderate quantities. The production of rice, however, is rapidly increasing, and last year's production exceeded 1,000,000 bushels.

The root crops are not so important, although sugar beets are being cultivated in large quantities and, under favorable conditions, can be made to yield from 14 to 18 per cent of sugar. Hemp and tobacco are grown both for local consumption and for export. The tobacco is of good quality and, if foreign seeds are used and the leaves properly cured, can be used to advantage with other tobacco in making high grade cigarettes. The soya bean is the most valuable crop and is of greatest importance commercially. The phenomenal rise in the price of bean oil abroad during the last few years has given a great stimulus to the industry.

Before the war thousands of tons of both shelled and unshelled peanuts were shipped from North China, principally from Tsingtau, by German firms to Marseilles, in pre-war days practically the source of all peanut oil in international commerce. Since the war peanut oil in large quantities has been shipped from this district direct to the United States. Also, as a result of the war, castor bean oil was for the first time exported direct to the United States in 1917, in which year initial shipments of walnut oil were also made.

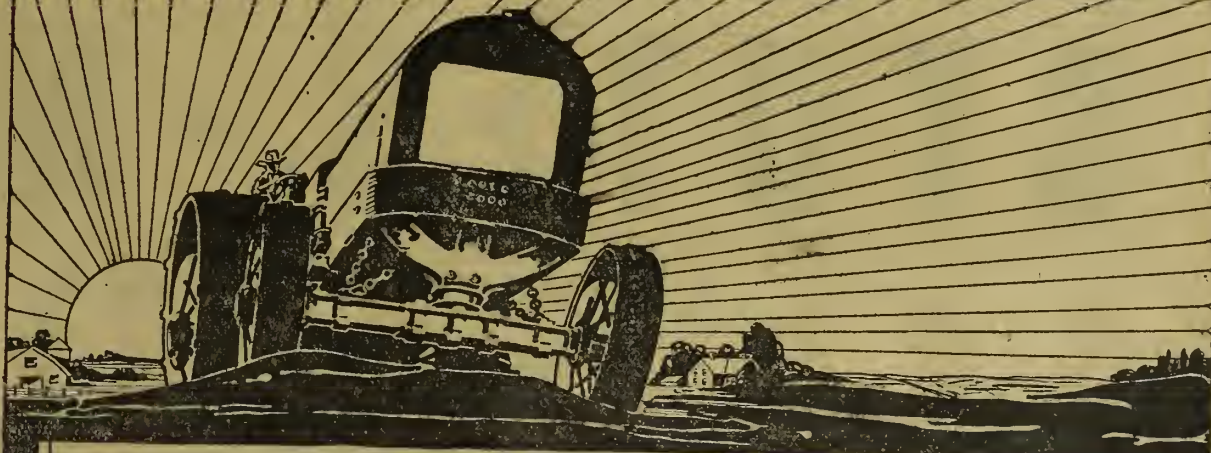


BEEMAN
ONE-HORSE TRACTOR
The Original—Hundreds in Use
The MOST PRACTICAL tractor yet devised for plowing, cultivating and furrowing FIVE and TEN acre groves.

Motors, Equipment & Tractor Co., Inc.
1310 SO. GRAND AVE., LOS ANGELES, CAL.

When Writing Advertisers Mention California Cultivator

NATIONAL TRACTOR & IMPLEMENT SHOW OF THE WEST



ALL NEXT WEEK

Verdugo Woodlands (Glendale)

September 20 to 26

LOS ANGELES

September 20 to 26

A Great Business Show You Cannot Afford to Miss

Displays of the latest, most improved tractors, trucks, implements and power farming machinery of all kinds. Many interesting and valuable accessories. Entertaining features for visitors.

More than 300,000 square feet of exhibits, including 30 or more improved tractors never before exhibited. It will be the first show of national scope ever held on the Pacific Coast. Thousands of visitors are expected.

DON'T MISS IT!

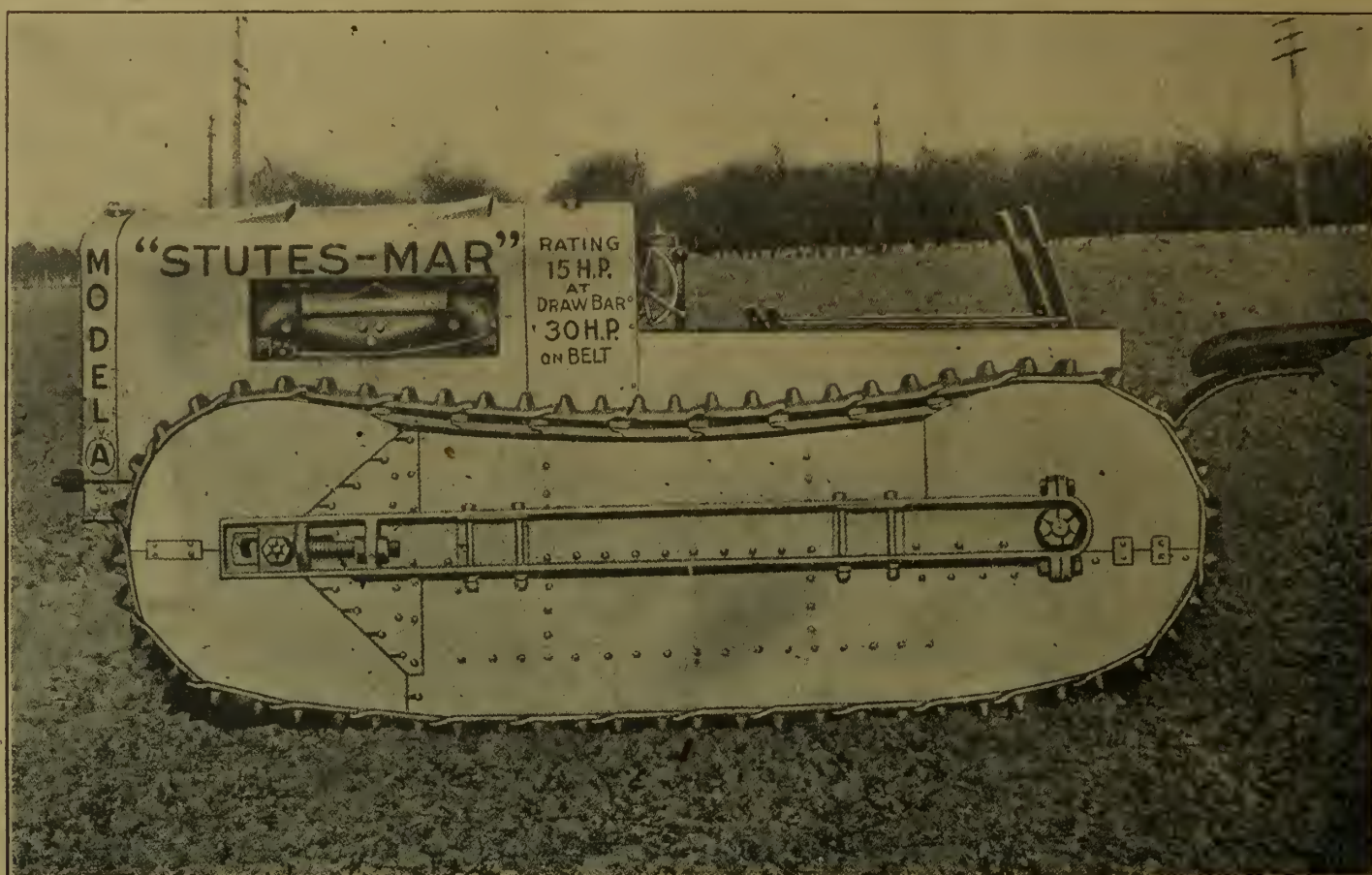
Make your plans now to be there. Enjoy the big show and the unequalled recreational advantages of Los Angeles

and vicinity—combine pleasure with business.

Free camping grounds at Verdugo Woodlands.

Under Direction of
Tractor & Implement Dealers Association of Southern California
GUY H. HALL, Manager

THE WORLD'S BEST BUILT TRACTOR



THE STUTES - MAR ROLLER TREAD

GIANT
For Strength

MIDGET
For Size

May Be Seen at the
NATIONAL TRACTOR & IMPLEMENT SHOW
Los Angeles---September 20-26

Stutes-Mar Tractor Co.

Gen. Office San Jose, Cal.

San Francisco Office
75 Fremont St.

Factory
Sunnyvale, Cal.

NOTES

(Continued from Page 347.)

The National Tractor and Implement Show of the West opens next Monday, September 20, at Verdugo Woodlands, and continues till the night of September 26.

* * *

Wm. Gregory & Sons will have exhibits of Trundaa 25-40. This is their regular Model 10. There will be little featuring of the spectacular, but a straight exhibit of a tractor from regular stock, and then, for the inquisitive who may want to see how the wheels go round, there will be a torn down transmission. Just a little showing of the method of construction and, more, how power is transmitted to each driver independently.

* * *

The H. J. Ruddle Co. will feature as a part of its exhibit a miniature orange grove, likewise a bean field. In the orange grove will be 9-18 Fageol tractor showing ability to make short turning radius; likewise Fageol in the bean field connected with cultivator, ready for working up the soil. These on either side of the exhibit, while the center will be occupied by the dependable even speed Fageol truck.

* * *

The Bates Steel Mule 18-25 will be exhibited by F. T. Briles. Mr. Briles will also exhibit a J. T. 20-40 crawler type. Another line shown by Mr. Briles is the Schmeiser levelers and hay derricks, in fact, a full line of Schmeiser products. The home factory will be represented by Harry Bates and Edward V. Arkny. Another assistant in this exhibit will be Sam Hunter of the Sam Hunter Co., which controls the districts of Oregon and Washington for the Bates tractor.

* * *

The Hart-Parr 30 will be shown by the Southern Border Motor Co. This is a real kerosene tractor. One side line exhibit in this booth will be the tractor tender which has proved a wonderful labor saver for many a farmer. This is a two wheeled device for carrying fuels and oils. Oliver plows of various types are also educational features.

* * *

The John Deere Plow Co. will hardly exhibit its full line of implements. That would take a large portion of Verdugo Woodlands. But two or three of the up-to-date propositions, like the No. 40 Two Bottom Plow and the No. 5 and other plows especially adapted to tractor use, will be shown. Then they will show the Waterloo Boy 12-25. Eastern visitors who will assist in this exhibit are Theo. Brown, chief of the experiment department of the John Deere Plow Co.; Ben Kough, general manager of the Deere works; George T. Wheeler, manager of the San Francisco house; and W. L. Paul, Coast manager. These exhibits are made by the L. A. Implement Co. and are in charge of T. J. Ross.

* * *

The J. I. Case Threshing Machine Co. will feature regular stock models to be shown exactly as in regular stock and sold to the farmer. Three models, the J. I. Case 10-18, 15-27 and 22-40 will be exhibited. There will also be small size grain separator and bean thresher. Disks, water tanks and rock crushers will be side lines, but there will be no side shows. Visitors who will assist in this exhibit are A. J. Olson of San Francisco, Manager Ramsey of the sales department, and Plow Expert Kenneth from the factory. This exhibit will be under the general management and in charge of Richard Stockton.

* * *

The J. I. Case Plow Works Co. will exhibit the Wallis. It will be in charge and under the management of J. R. Adair with O. F. Braecklein as assistant. There will be wheels going round "Get on the seat and try it" will be the invitation. But one of the most interesting features of this exhibit will be a cut out model of the Wallis. The frame of the Wallis is of U-shaped armor steel. It is supplied with occasional handholes which permit access to various working parts, which permits adjustment, and at the same time made air, or at least dust, tight. In this cut out model these are all removed and additional portions cut away to show all the interior mechanism. J. I. Case plows, a cotton lister, eight foot harrow and four bottom disk attached to tractors will be features.

One of the outstanding features of the National Tractor Show will be the exhibits of California made tractors. Our own home products built to fit the conditions which tractors and implements must meet, under the various soil compositions of California, are examples of engineering and manufacturing ability equal to anything shown from Eastern factories.

* * *

This show is what they call a "still exhibit," but a little bird tells us that there will be some action in the Avery Company's "still exhibit." We have heard of movie horse races, and we understand the Avery exhibit may remind us of the methods followed by the movies. Anyway, something will be moving, at least that is the intention of Manager Rainey.

* * *

The exhibit of the Motors Equipment and Tractor Company will be comprehensive, consisting of one Toro 6-12 tractor painted white, a Toro motor cultivator specially equipped for bean cultivation, and one of wider tread for cotton cultivation. There

will also be three Beeman garden tractors, each equipped with tools showing their adaptability to various farm operations. H. T. Hayes and a corps of men will be in charge of the exhibit. C. Peters, factory representative of the Beeman Tractor Company, and M. R. McLaren, special representative of the Toro Motor Company, also will attend the show. These men will be ready to explain all the features of their various lines.

* * *

The L. M. Railsback Company will display some new special tools and some new implement labor savers. We believe labor saving will be the one greatest lesson of this great show. This company has been recently made agent for California for the Allwork tractor, and will also exhibit Killefer and Oliver implements.

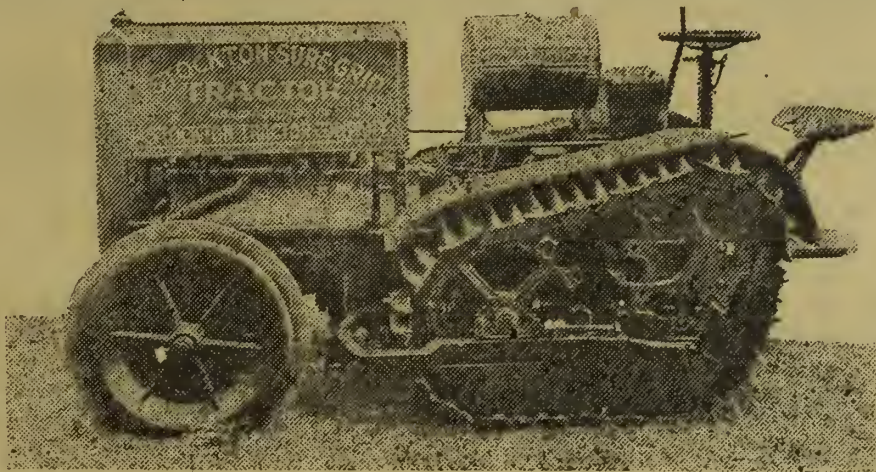
* * *

The Union Tool Company of Torrance, a two and a half million dollar organization engaged in the manufacture of gas engines, pumps, oil well machinery and the Union Sure Grip 12-25 tractor, and who were engaged

during the war in government work for the Shipping Board, will show the Union Sure Grip tractor at the show. This tractor is a finished product reflecting the highest type of Western manufacturing and engineering ability. Careful study of the specifications, materials used and general appearance will convince one of its ability to perform all the tasks of modern farming in a thoroughly satisfactory manner.

* * *

The Farwest Sales Company will make a showing of Utilitor garden tractors with full line of attachments, including field mowers, lawn mowers, cultivators, plows, seeders, etc. It will also have power cider presses warranted to produce an article with less than half of one per cent. There will also be two models of one of the newer types of tractors, the Stockton, both the wheel tractor and sure grip. The Stockton people, by the way, have recently greatly enlarged their factory and moved to Sacramento. H. L. Marsh, president of the Farwest Sales Company, will have the Southern California district.



Introducing the New Stockton Sure Grip Tractor

The new Stockton Sure Grip Tractor will readily appeal to all who need a small, compact tracklayer for Orchard or Field work. Designed by experienced tractor engineers to meet the exacting conditions due to California soils and crops. Rigorous tests and months of hard, steady work during the past year proved the value of the manganese steel track which is sold under a remarkable guarantee.

From front to rear, the Sure Grip is carefully built and will easily maintain the reputation established by the old reliable Stockton Open Wheel Tractor. Both types of the Stockton Tractor contain high grade material and workmanship, and in design and construction are modern, assuring power, economy, endurance and ease of handling.

You can now select your Stockton in either Track or Wheel Type, as required for your work, and know you are getting the best machine of its size on the market. You will be pleased and proud of your selection.

Investigate. Write today for particulars and Circular C.

—Mailed Free on Request—

STOCKTON TRACTORS

are now built in
Two Models
Tracklaying and
Wheel Type



See the
STOCKTON
SURE GRIP
at the
National
Tractor Show

BUY A TRACTOR BUILT TO A STANDARD NOT TO A PRICE

The popular demand for Stockton Tractors, due to established ability in the field, has already outgrown the resources of the original factory at Stockton. To meet the necessity of larger production, an eight acre factory site has been secured at Sacramento. Contracts are out for modern factory buildings to be completed within ninety days. In the meantime, as far as possible, orders will be filled from the Stockton Factory.

A. B. JOHNSON COMPANY
General Factory Distributors
213 California Fruit Exchange Bld.
Sacramento, California

FARWEST SALES CO.
Distributors Southern California
231 North Los Angeles Street
Los Angeles, California

Farms to Compete

The state land settlement board supplements the college of agriculture in promoting better farming and better business in rural California. In 1919 the board offered a series of valuable prizes to be competed for by the settlers at Durham in 1920. E. S. Wangerheim gave a pure bred Holstein for the best kept dairy farm. Mortimer Fleishhacker gave a pure bred

sheep for the best planned and best cultivated farm. S. T. Mason, Durham merchant, gave a pure bred Duroc gilt for the best cultivated ditch bank. T. S. Mitchell, president of the Commercial Bank of Durham, gave enough garden seed to plant a half acre, as a prize for the best cultivated farm laborer's allotment. Elwood Mead, chairman of the board, gave a trio



New Grammar School at Delhi



Water is King at Delhi

It is also an expensive ruler and it is to be saved to the last drop by the construction of an underground distributing system. The concrete pipe is being made on the settlement by returned soldiers who at the time this picture was taken were working and waiting for the allotment which will be made October 15. Applications for lands on the second allotment of this settlement have been received since September 10 and may yet be filed.



Why Are Hudson Owners Indifferent to Other Cars?

Isn't It Because Contentment In Hudson Ended Inquiry Into Others?

Thousands of Hudson owners know no other make of car. Their satisfaction in the Super-Six leaves nothing to tempt them to experiment elsewhere.

Our experience gives confidence to count every Hudson purchaser as a permanent owner.

Naturally we expect men of wide motor knowledge to select Hudson. But isn't it a revelation of the convincing way Super-Six performance overshadows the field, that thousands who profess little mechanical knowledge are just as unerring in their choice?

Can Any Endorsement Rival This?

For nearly five years Hudson has outsold all the world's fine cars. And today its distinction is so wanted that we see no curb to sales except the production limitations that fine, accurate building imposes.

More than 100,000 Super-Sixes are in service. That exceeds the output of any car in its price range by many thousands.

It is a verdict—100,000 strong—for qualities and abilities no

other car can share. It fixes the specific reason for dominance of a type, unlike any other car.

This chief issue is Hudson endurance. And it is exclusive, because it results from a patented principle. Others cannot use this invention, which by reducing vibration to within 10% of vanishing, made Hudson's unequalled reliability marks possible.

Its Endurance Limits Still Undiscovered

Years must elapse before we know the final limit of Super-Six endurance. We tried to establish those limits by test. Speedway trials, a double transcontinental run that no other car ever endured to finish, and the abuse of high-speed racing, failed to reveal the point at which Hudson endurance would yield. But they did establish that the Super-Six possessed greater durability than any other car ever proved.

The earliest Super-Sixes, built nearly five years ago, and still serving with undiminished satisfaction, testify how car life is practically doubled through this invention.

Hudson Motor Car Company, Detroit, Michigan

of pure bred fowls as a second prize for the best garden. The farms and gardens are to be judged by a committee of R. L. Beagles, superintendent of the plant introduction gardens near Chico; L. C. Shirley, farmer, and C. C. Brown, farmer. There has been keen competition among the settlers for these prizes.

Similar encouragement is to be given to the settlers at Delhi for the year 1921. Already Edgar M. Wilson has offered a valuable prize for the best winter garden grown on a farm laborer's allotment at Delhi, and the First National Bank of Turlock has offered a similar prize for the second best winter garden. For the season of 1921 the board intends offering prizes that will be worth the best efforts of the Delhi farmers. The prizes given by the board include one for the best planned and cultivated farm, given by Mortimer Fleishhacker; one for the best cultivated farm laborer's allotment, by Senator Frank Flint; one for the best dairy herd, by E. S. Wangerheim, and one for the best poultry farm, by Elwood Mead.

TRUCK FARMERS SHOULD CO-OPERATE

I am a truck farmer and have often wondered how to eliminate the middlemen and profiteers. I am going to submit my theory to your good judgment.

Say, for instance, the farmers form an association at a cost of \$2 per month each, rent a stall in the Los Angeles city market where their goods may be delivered and receipted for. The handler at the market in turn sells the produce direct to the retailer. With a wide-awake person in charge at the market the farmer would more than save the \$2 paid into the association in one load of produce, as well as realizing more for his products that he raises. This would also be a step in the direction of eliminating the profiteer middleman.

You realize the farmer works long hours and toils hard to produce a crop and probably hauls it 20 to 30 miles to the market and in many cases he does not receive enough for his load to pay for the time it takes to haul it to market, let alone the cost of producing it.

Why not wake the farmers up through your paper to this effect?—Subscriber, Redondo Beach.

An excellent suggestion and one which should appeal to the truck farmers. The Japanese have at least one such organization in Los Angeles County, and we believe it is succeeding remarkably well. In fact, all the Japanese truck farmers succeed in this respect better than Americans in this one line of farming. One trouble has been that the farmers have not taken into account the fact that this man who shall receive and dispose of the goods and make accounting to the grower must have considerable ability, know the marketing game and be of absolute integrity. Such a man can command a salary with private interests which has been larger than growers have usually considered they can pay. Hence they have been content with indifferent or possibly volun-

teer service. Volunteer service is the best on earth for a time, but from necessity it cannot be maintained over a long period. Hence the one man or, in case of a large number of growers combining, one organization, under a business head becomes necessary. This calls for funds. More, it calls for persistence. The latter factor is the more important for such organization, while new, is reasonably sure to make some mistakes, and some growers have not the persistence or the patience to stand for these mistakes while a permanent and successful organization is built up. It is not our intention to give a pessimistic tone to the suggestion of our subscriber, simply to call attention to some of the obstacles. On the other hand, there is every possibility for success and if the growers will go into it with correct understanding of the possibilities and the needs there is no reason why truck farming should not be put back on a paying basis and California's richest truck farming section saved to make attractive American homes.

THE WORLD'S PRODUCTION OF GOLD

The United States geological survey has given out some preliminary figures showing the production of gold throughout the world in 1919. The production in the United States was \$58,285,196; Canada is reported to have produced \$14,687,000; India, \$10,28,000; Australia (not including New Zealand or the islands), \$29,268,000; the Transvaal, \$171,640,123; Rhodesia and West Africa, \$18,631,070. There was probably a large decrease in the production of gold in Russia and Siberia in 1919. Some increase was probably made in the output of Central America and South America, which, however, was doubtless offset by decreases in the output of other countries. The incomplete returns now available indicate that the world's production of gold in 1919 was between \$345,000,000 and \$350,000,000. The world's production in 1918 amounted to \$380,924,500.

The survey further states that information received during the first six months of 1920 indicates a still further decrease in the production of gold in the United States and that the output for the year will probably be less than \$50,000,000. The production in Alaska, Colorado, California, Oregon and Montana will be much less in 1920 than it was in 1919, because water is very short for placer mining and many stamp mills are closed. Canada as a whole may increase its output, although the production of the Yukon districts will be smaller than last year. The output of Russia cannot be estimated. That of Australia will show a decrease. That of South Africa and South America will probably show no radical decrease. According to the geological survey the indications are that the decrease in the world's production of gold in 1920 will not be so great as it was in 1919.

MOST INTENSE RAINFALL ON RECORD

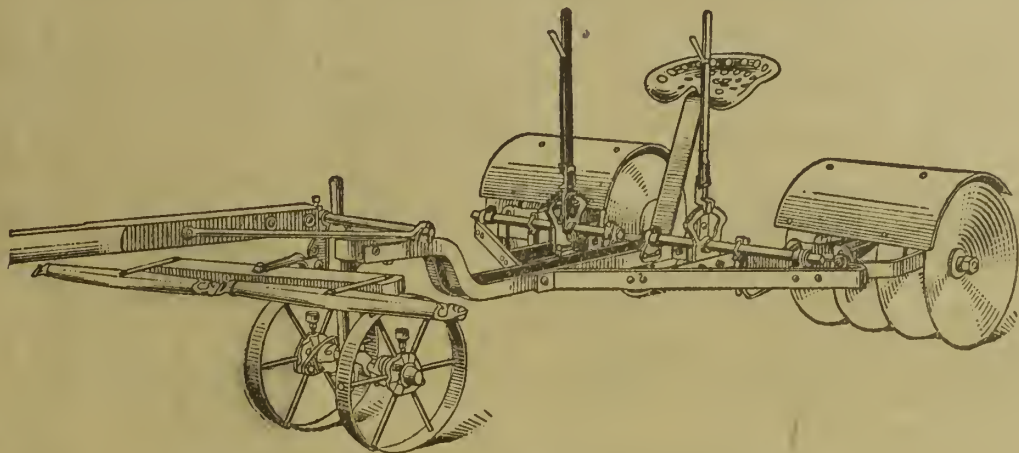
Two and one-half inches of rainfall in three minutes!

A reproduction of the rain gauge register showing that downpour—a record made in 1911 and still recognized by the weather bureau, as the most intense rainfall of which it has data—appears in the current number of the Monthly Weather Review, published by the weather bureau. The illustration accompanies a technical discussion of rain and sunshine in the Canal Zone. This heavy fall of rain occurred at Porto Bello in the Canal Zone.

Not alone in the Canal Zone but at 200 points in the United States the weather bureau maintains observation stations at which accurate records are kept of rainfall, snowfall, temperature, etc., so that any person interested can ascertain accurately the weather history of practically any section of the country by applying to the weather bureau.

The apricot crop this year was difficult to estimate because of exceedingly spotted conditions in nearly all growing districts. It is now estimated by the state department of agriculture about 55 per cent of normal, or 120,000 tons of fresh fruit.

For Orchard Cultivation



International Orchard Disk Harrow

This is the most popular and efficient of all tillage implements for general orchard cultivation. The gangs can be set to throw the soil toward or away from the trees or for hilling-up crops planted in rows, and can be adjusted to cut deep or shallow next to the trees. All adjustments can be made quickly. Broad sheet-steel shields cover the disk gangs protecting low-hanging branches against injury. An extension frame can be supplied that gives gangs a maximum spread of 11½ feet. Extra-long shields can be provided for use with this extension frame.

International Orchard Disk Harrows are made in two sizes—8 and 10 disks—and are furnished regularly with 2-horse hitch and a substantial forecarriage that keeps the harrow in line with the draft and makes turning corners easy.

See your nearby full-line International dealer in regard to one of these harrows or for tillage implements for general farm service. International closed-end peg-tooth harrows and spring-tooth harrows equipped with orchard guards are also especially adapted to orchard cultivation.

INTERNATIONAL HARVESTER COMPANY

CHICAGO

OF AMERICA
(INCORPORATED)

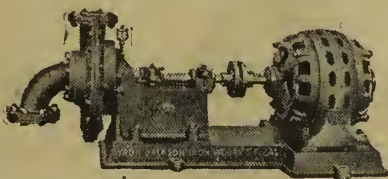
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Branch Houses:

LOS ANGELES SAN FRANCISCO
and 90 other cities in the United States

Centrifugal and Deep Well Turbine PUMPS

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Byron Jackson Iron Works, Inc.
San Francisco, Cal.

OFFICES AND SERVICE STATIONS:

Los Angeles
Willows
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Stockton
Salt Lake City, Utah

Harvest 20 to 45 Bushel to Acre Wheat in Western Canada

Think what that means to you in good hard dollars with the great demand for wheat at high prices. Many farmers in Western Canada have paid for their land from a single crop. The same success may still be yours, for you can buy on easy terms.

Farm Land at \$15 to \$30 an Acre

located near thriving towns, good markets, railways—land of a kind which grows 20 to 45 bushels of wheat to the acre. Good grazing lands at low prices convenient to your grain farm enable you to reap the profits from stock raising and dairying.

Learn the Facts About Western Canada

—low taxation (none on improvements), healthful climate, good schools, churches, pleasant social relationships, a prosperous and industrious people.

For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan and Alberta, reduced railroad rates, etc., write Department of Immigration, Ottawa, Canada, or

Gilbert Roche,
3-5 First St., Sheldon Block,
San Francisco, Cal.

Canadian Government Agent

When Writing to Advertisers Say Where You Saw Their Advertisement



We've picked out a Water System for You

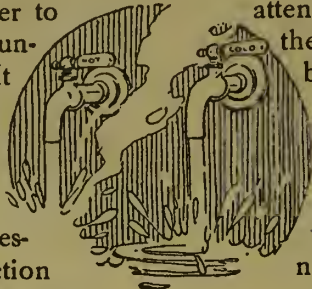


Drop in and take a look at the Dayton Automatic Water Supply System. You will see a well-built attractive looking water pumping plant—just the thing for your home.

The Dayton System will furnish you with every convenience of running water. It will do away with the ever-lasting drudgery of the pump and the water pail.

It will pump water to your bathroom, laundry and kitchen. It will give running water for stock troughs, garden, dairy and yard. It furnishes water pressure for the protection of your property from fire.

The Dayton Automatic Water Supply System operates by electric current—either farm lighting plant or central station. It needs little care or



attention. Just turn on the switch—give it a bit of oil now and then—and forget it. You will always have plenty of fresh, running water for every need.

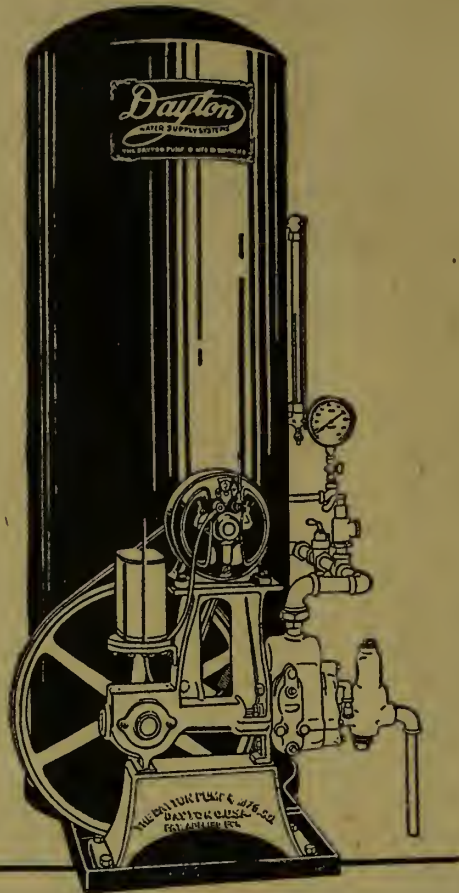
Come and see for yourself how well it is made—how simple to take care of—and how thorough in operation. And you'll be surprised at its low cost.

Dayton Pump & Mfg. Co.

Factory Branch
Office and Ware Rooms
401 to 405 Fourth St., San Francisco

Notice: Local Dealers, write for special terms as our

Agents for Dayton Automatic Water Supply System.



RAISIN ASSOCIATION ATTACKED (Continued from Page 358.)

in their present form for a great many years. Obviously these legal questions could be settled as well at some other time when their consideration would not disturb and threaten ruin to a large industry affecting a great number of our population which is in progress of harvest and preparation for market of \$60,000,000 of raisins. Every fruit industry in the state is most seriously affected. Cannot the government, in the light of these facts, dismiss this suit and take up subsequently with the association amendments to meet any legitimate objections. I am informed by the Association's representatives that there are no steps that will not be taken to meet legitimate criticism. They have not consciously violated any law, and do not believe that they have done so unconsciously, but they are ready and willing to meet the government through your department in a frank and open effort to adjust any differences of opinion whatever. Under these circumstances it would appear to me that the interest of this state and the interest of the people at large would be best served by the dismissal of this suit.

(Sgd.) James D. Phelan.

Commenting on the suit and the injustice of it, Chester H. Rowell of the Republican says editorially:

"The suit to determine the legality of the Associated Raisin Company was evidently inevitable, so it might as well be met now as ever. By all accounts, the complaint is directed not so much to extraneous details as it is to the very right of the association itself, or of any association so constituted, to exist. With both political parties declaring in favor of that right, with a department of the government of California devoted to promoting it, and with many other states following California's example, the question of public policy may be taken as settled.

"The complaint that growers were 'coerced' into joining the association is untenable. That mistaken neighborhood sentiment did buldoze a few growers into signing who were unwilling to do so was notorious, but the Associated Company promptly repudiated that action and has never sought to take any advantage of it. An advertising agency did also prepare some 'rough stuff' copy for the Association. The Republican, as we recollect it, refused to publish that copy, and on its being called to the attention of the directors they ordered it discontinued and no more in that spirit prepared. There may have been some insertions elsewhere before this order got out. As to these minor incidents, affecting at most a few people and having no relation to the general situation, there is no dispute. We doubt if there was ever a Liberty Loan drive in which there were so few incidents of this sort. Certainly there is no labor union in existence that has not some members brought in by 'persuasion' equally inconsiderate. We are sure there are members of every political committee serving with like unwillingness. And there was never an early closing or other movement requiring unanimous action by merchants into which one or two were not persuaded urgently. Such things are always regrettable, but they always happen, and they are serious only when they are the center of the system instead of a mere accidental incident. In the case of the Associated Raisin Company they happened only in the rarest of instances, never with the directors' sanction, and no advantage was ever taken of them. We doubt if there was ever a Y. M. C. A. drive or church subscription so nearly free from coercion or undue persuasion.

"And when the complaint, in this instance, alleges that these growers were driven against their will into an association to increase the price of their goods and make money for them, it convicts itself of its own absurdity. Actually, the few who wanted to stay out did so because they thought they could get even more money outside. And the high prices complained of for Associated raisins this year are less than those same raisins bring under free competition when they reach the open market. The price is higher than the directors would like to charge and higher than they think it permanently good for the growers. But it is less than the public, this year, insists on paying.

Get a WADE Bean Thresher

Buy the thresher built especially for the man who wants a machine for his own crops. You do not have to thresh with the Wade "by the day" to make it pay for itself and a good profit besides.

Built for Western Conditions

The Wade thresher is manufactured by R. M. Wade & Company, Portland, the oldest agricultural implement house in the West. It is especially designed to meet Western conditions.

Plenty of Separation Surface

The Wade has plenty of separation surface and strong, well controlled air current. Doesn't crack the kernels. Built of best materials throughout. Threshes beans, peas, china peas, lentils, soy beans, vetch or other legumes. Capacity 20 to 35 bushels an hour.

Write for Descriptive Folder

If your dealer hasn't the Wade, write us for literature and full information on this wonderful machine.



Use the coupon.

B. Hayman Co. Inc.

120 N. Los Angeles
Street,
Los Angeles
Calif.

B. Hayman Company, 120 North Los Angeles St., Los Angeles, California, Gentlemen: Please send me descriptive literature and full information on the Wade Pea and Bean Thresher, without obligation on my part.

Name
Address
Dealer's Name
Address

Since
1902

Pomona DUPLEX-PLUNGER Pumps

One Pump Will
Do Your Work

Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

Send for Catalog 103

Pomona "Made Right"
Irrigation Gates and Valves

PRICES RIGHT—QUALITY RIGHT
SEND FOR BOOK C.

POMONA MFG. CO.
POMONA, CAL.

When Writing to Advertisers Say You Saw Their Ads in the California Cultivator



INTEGRITY, CONSCIENCE AND CAPITAL
ARE BACK OF THE

UNION SURE GRIP TRACTOR

THE UNION SURE GRIP TRACTOR is manufactured and sold under an absolute guarantee, and is backed by the largest manufacturing corporation on the Pacific Coast. Their capital is Two and One-Half Million Dollars, and they have established a world-wide reputation by the quality and success of their Oil, Gas and Steam Engines, and a general line of Machinery which they have been building for the past fifteen years.

The Union Sure Grip Tractor is strictly a **CALIFORNIA PRODUCT**—built to a standard of perfection in design, materials, engineering features, and durability under hardest tests. It was built to satisfy the conscience of its Builders and reflect the Integrity of the Union Tool Company.

More than a Quarter of a Million Dollars, and years of careful experimenting and study of California conditions by experts, contributed to the **Ultimate Perfection** of the Union Sure Grip Tractor.

The Union Tool Company has no fear in placing this **Master Tractor** in the hands of California Farmers. No expense has been spared and the Union Sure Grip Tractor will do honor to the **Integrity and Conscience** of its Builders—and will perform the service of a **Thoroughbred** for its owner.

Your confidence will not be misplaced when you buy a **UNION SURE GRIP TRACTOR**.



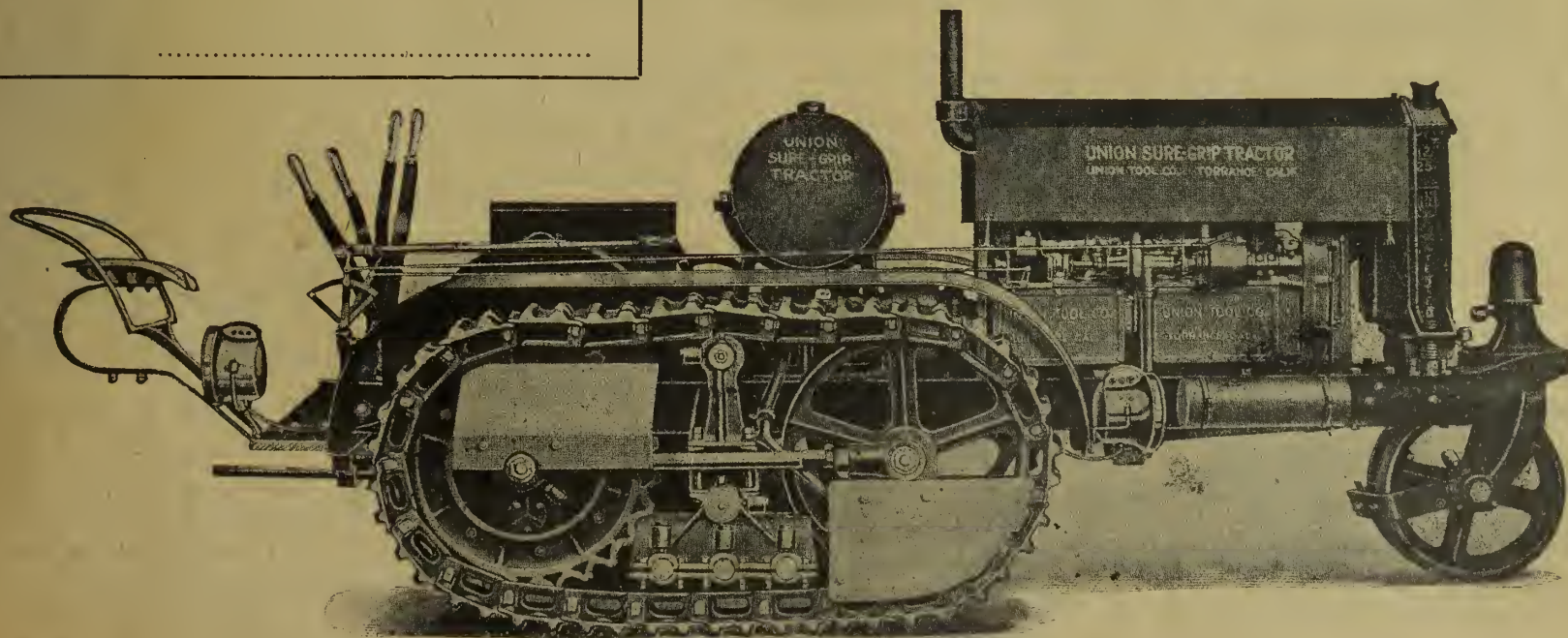
Mail The Coupon
For This
FREE BOOK

UNION TOOL COMPANY,
TORRANCE, CALIFORNIA.

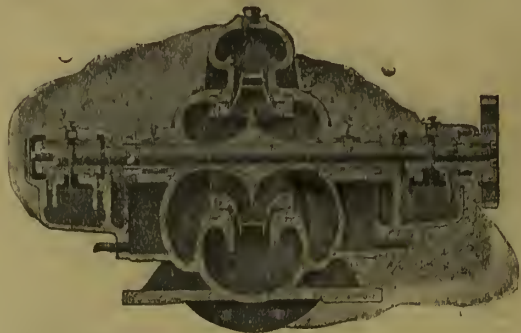
Gentlemen:—

Please send me your Free Book, "As Told by the Men Who Use Them," also illustrated folder with full specifications of the UNION SURE GRIP TRACTOR.

Union Tool Company
Torrance, California



DE LAVAL IRRIGATION PUMPS



High Efficiency Saves Power

Above is pictured a cross section of the DeLaval double suction single stage pump.

Notice the smooth, easy passage for the water. This produces high efficiency and therefore saves power. Note the double suction principle and labyrinth rings.

The pump case of the DeLaval is split horizontally. This feature permits of inspection without destroying pipe connections.

This is one of a series of advertisements explaining the different parts of the DeLaval Irrigation Pump.

Write us and learn what can be saved with High Efficiency Pumps.

Herzog Electric & Engineering Co.
169 Stuart St. San Francisco

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

Over Eighty Millions Worth of Citrus Fruit



J. DREHER retires as president of the California Fruit Growers Exchange; Charles C. Teague becomes the new president; C. F. Whitcomb is first vice-president; H. E. Swan is second vice-president and E. G. Dezell is secretary. From the annual report we note regarding marketing conditions in 1919-20:

In the fruit business each marketing season develops a series of conditions that are unlike those of any other year. This year there has been a continued high buying power throughout the country on account of the general prosperity. This has been especially marked in the industrial centers, where high wages have prevailed. This condition has had a favorable effect on the market for fruits like the orange, that are used primarily for food. The lemon, on the other hand, is instantly affected by weather changes, irrespective of the buying power of the consumer. People use the lemon primarily for making lemonade, and secondarily as a food or for toilet and medicinal purposes. During the summer of 1920, as in the summer of 1915, the temperature throughout the country has been below normal, and the consumption of lemons has thereby been greatly reduced.

In addition to the cool summer, the California lemon has had to meet more than the usual competition as a result of the depreciation from par in Italian exchange rates, the lire equaling about 25 per cent of its former value. Italian lemons have been sold throughout the summer in the United States at an average price which represents

approximately two-thirds the cost of producing lemons in California.

The year has also been characterized by the number of strikes among railroad employees, and among freight handlers and other labor who handle fruit from the cars to the stores in some of the principal cities. The railroad strike in April and May completely demoralized the national distribution of the fruit, and a similar condition has prevailed at times in some of the principal cities where local strikes occurred.

There was also a serious car shortage, which interfered with the distribution of the Valencia crop in the fall of 1919, causing a large part of it to be marketed in competition with the Navels from central and northern California and with the grapefruit and oranges from Florida, and disorganizing the seasonal distribution of varieties. The fruit has at times also been much delayed in transit. In the winter months, in which was a period of extreme low temperatures, this delay resulted in the severe freezing of an unusual number of cars of oranges and lemons.

Many of these conditions, such as the subnormal temperature, the readjustment in the handling of railroads and other matters referred to, are temporary in nature and should not be looked upon as permanent factors with which the industry has to deal.

Shipments and Returns

During the year ending August 31, 1920, the members of the California Fruit Growers Exchange shipped 12,144,964 boxes of oranges, 226,266 boxes of grapefruit, and 3,452,534 boxes of lemons, making an aggregate of 15,823,764 boxes, or 34,461 carloads.

The total shipments of citrus fruits from the state were 38,077 carloads of oranges and grapefruit and 8,680 carloads of lemons, making a total of 46,757 carloads.

The returns f. o. b. cars California for the fruit shipped through the exchange, including the estimated value of the cars yet unsold, will be approximately \$59,221,329. Using the exchange returns as a basis, the returns to California for the total crop of 1919-20, including the portion of the 1919 Valencia crop which was sold after August 31, will approximate \$81,200,000, representing a delivered value in the wholesale markets of \$106,600,000, including \$25,400,000 of freight and refrigeration charges. The retail dealer paid approximately \$121,100,000 for the fruit and the consumer paid \$166,000,000. The gross margin of the wholesale trade in handling California citrus fruits represents an average of about 12 per cent of its selling price, while the average gross margin of the retail dealer represents an average of 27 per cent of the retailer's selling price.

The exchange shipments for the 12 months period represents 73.7 per cent of the total shipment of citrus fruits from California, which is an increase of approximately 1.4 per cent over the preceding year. The exchange membership has increased during the past year from 10,000 to 10,500 growers, and the combined number of shippers, associations and district exchanges belonging to the organization has increased from 216 to 219.

During the past year the losses from bad debts and uncollected bills amounted to \$435.83, representing 3/4000 of 1 per cent of the f. o. b. value of the fruit. There has been returned to California through the exchange \$376,000,000 during the last 17 years. The losses of all kinds during this period have been approximately \$8,775, or 9/4000 of 1 per cent of the f. o. b. returns.

Regarding Navel Oranges

The Navel shipments of the exchange in 1919-20 equal 4,958,411 boxes, as compared with 5,723,794 boxes in 1918-19. The short crop resulted in a low average grade and in unusually large sizes, thereby making a more difficult sales problem for the organization to handle. The crop was marketed in competition with the largest crop of oranges and grapefruit from Florida, the latter crop running to desirable sizes and quality.

Valencias

The shipments of Valencias divide

Just Like Dad's

LEE MADE

UNION-ALLS

TRADE MARK

REGISTERED

Lee Union-Alls

The Most Popular Work Garment in America~

But before you buy
be sure it's a LEE.

They're not Union-Alls Unless they're LEE

Dept. 4617

The H. D. Lee Mercantile Co.

Kansas City, Mo. South Bend, Ind.
Kansas City, Kas. Trenton, N. J.
Minneapolis, Minn.
St. Louis, Mo.
Chicago, Ill.

themselves into two periods: first, the portion of the 1919 crop marketed after September 1, 1919, and, second, the crop of 1920.

In the fall of 1919, 6,262 carloads, or 2,917,582 boxes, were marketed through the exchange, representing the largest quantity of Valencias ever shipped after September 1. The 1919 crop of Valencias was the largest ever produced, the total shipments of 6,978,240 boxes exceeding that of the Washington

Lemons

California shipped 3,826,034 boxes of lemons during the 12 months ending August 31. A year ago the state's shipments totaled 4,224,972 boxes and the average for the last five years has been 2,914,980 boxes a year.

The total supply of foreign and domestic lemons in the country during the last year was 5,379,408 boxes. This is an increase of 10.3 per cent over the year previous and an increase of 26.5 per cent over the average of the last five years.

The marketing of the crop was filled with uncertainties from the beginning of the season on account of the general conditions of marketing already set forth. Prices were considerably above the average in the autumn months of 1919, due to favorable weather, and again in February, when the epidemic of influenza sent the demand to abnormal levels. In April the switchmen's strike prevented a satisfactory distribution and held back about half the fruit that should have gone forward.

The summer lemon market was the most unsatisfactory since 1915. This was due to the following unfavorable factors:

1. Cool weather, which prevented the usual demand for lemonade.

2. The depreciation of Italian exchange, which resulted in heavy importations of foreign lemons at low prices.

3. The high price of sugar, which discouraged the making of lemon drinks, and the increase in the number of soft drinks.

4. The shipment of weak and oversized fruit which had accumulated in California as a result of the above factors.

The year's importations of foreign lemons totaled 1,553,374 boxes, which is an increase of 76 per cent above the previous 12 months and 13.6 per cent above the average of the last five years.

The average price received for foreign lemons sold in New York was \$2.33, which under existing exchange rates, after deducting freight and duty, returned to the foreign shipper 32.5 lire. To appreciate the advantage of the present American exchange rate to Italian exporters, it should be noted that in 1913 the same average selling price, exclusive of duty and the difference in transportation, would have returned only 4.3 lire to the shipper. The duty on foreign lemons is now the equivalent of one-half of one cent, compared with 1½ cents per pound in 1913.

While foreign lemons have been selling at an average of \$2.33 in New York, it has been costing California lemon growers not less than \$3 a box merely to grow their fruit and prepare it for shipment. Average prices on foreigners sold in New York during the summer months were: May, \$2.14; June, \$2.27; July, \$1.74.

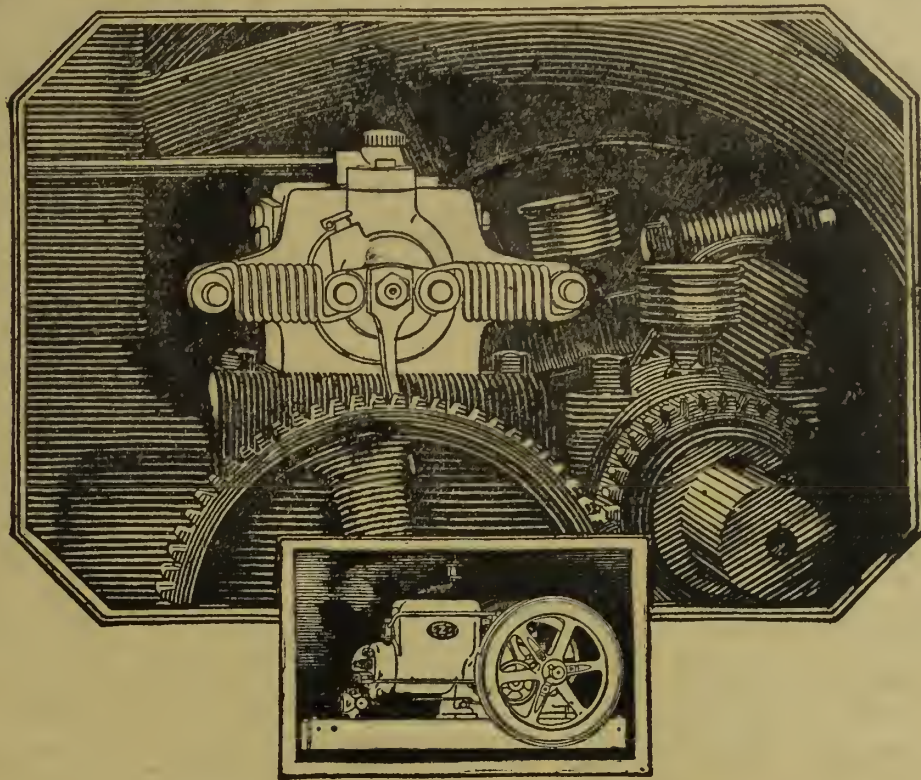
Regarding the new transcontinental freight rates the report calls attention to the fact that the former rate per 100 pounds of oranges was \$1.44, while the new rate is \$1.92, an increase of 38 cents per box from the former \$1.12 per box rate. For lemons the rate is increased from \$1.25 to \$1.666, an increase per box of 35 cents. The report states:

The amount that will be paid by the citrus industry as a result of the increase equals approximately \$8,600,000.

Fruit Growers Supply

The Fruit Growers Supply Company which purchases the orchard and packing house supplies for the members of the exchange has transacted a business during the year in excess of \$8,500,000. The value of the packing house supplies will approximate \$6,930,000. Orchard supplies will total about \$1,555,000, and miscellaneous supplies will add approximately \$80,000. The lumber operations at Hilt will total \$1,676,000.

FAIRBANKS-MORSE "Z" FARM ENGINES



Built-In Bosch Magneto Insures Hot Spark

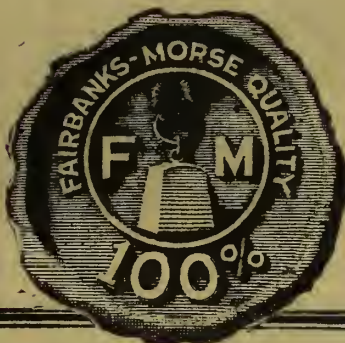
"Z" Engine ignition—positive—from Bosch high tension magneto, built into every "Z" Engine, insures intense hot spark that gives utmost power from fuel.

The high tension system is simple—just a high tension magneto with spark plug—no complications—no moving parts. Magneto is high grade—has interchangeable parts—is as accurately made as a fine watch. It gives the "Z" added power—quick starting—smooth, steady operation.

Other "Z" features are: Runs on kerosene as well as gasoline; more than rated power; parts interchangeable; clean-cut design; long life.

Call on your nearby dealer today and he will show you why you should have a "Z."

PRICES { 1 1/2 H. P. \$ 85.00
3 H. P. 135.00
6 H. P. 220.00 } All F. O. B. Factory



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MANUFACTURERS — CHICAGO

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Order your TREES now

**Make Sure Next Season's Planting
Many Varieties Will Be Scarce**

Orders booked now will
be given preference

We are always pleased to answer questions regarding
best varieties to grow, soil, irrigation, pruning, etc.

FANCHER CREEK NURSERIES

.. FRESNO, CALIFORNIA ..

JOHNSTON TURBINE PUMPS for irrigation

Produce water at a minimum cost. Ask for Folder No. 8 and name of nearest distributor.

AMERICAN WELL &
PROSPECTING CO., MFGS.
407 E. 3rd St., Los Angeles

COW MANURE

COMMERCIAL FERTILIZER

For Fall Application
MELILOTUS INDICA

Hawaiian Fertilizer Co., Ltd.

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Big Money Boring Wells

Have water on your own farm. In spare time make wells for your neighbors. It means \$1000 extra in ordinary years, double that in dry years. No risk—no experience needed.

Outfits for Getting Water Anywhere
Earth augers, rock drills and combined machines. Engine or horse power. Write for easy terms and free catalog.

LIFE MFG. COMPANY
Box 716 Clarinda, Iowa

Better service is assured by the advertiser if when writing you mention the California Cultivator.

STATE FAIR NOTES

(Continued from Page 352.)

tinness, for there was corn and alfalfa, fruits and nuts and all other things necessary in feeding the world.

* * *

Next was Los Angeles. The center of this feature was a vase made up of fruits and flowers of the southland surmounted by the spirit of Los Angeles in glistening white. It was a wonderfully striking exhibit. Citrus fruits predominated, but the diversity of Los Angeles agriculture was shown in display of avocados, olives, pomegranates and other fruits, together with corn, potatoes, pumpkins, alfalfa and all the staples of that great county.

* * *

Stanislaus, land of rich alfalfa fields and dairies, exhibited almonds, peaches, all other fruits and staples. In fact, all of the counties aspired to show their diversity and their ability as producers of general farm crops.



THE sixty-sixth California State Fair proved a record breaker all along the line. In fact, so many former records were smashed that an attempt to draw comparisons with former fairs fails for lack of a place to start. The fair just closed was certainly the most complete and representative exhibit of the agricultural resources of this state ever staged; the attendance figures far exceeded any former year; there were more county exhibits; more machinery was on display; the weather was all that could be asked; there were more fake gambling devices, but the great outstanding feature of the entire show was the remarkable showing made in the livestock department.

The livestock showing was remarkable from the standpoint of total numbers, quality of the exhibits and num-

ber of new breeders exhibiting for their first show. The early entry lists indicated a large showing, but the fair management was hardly prepared to accommodate the final flood. Stalls and pens were at a premium and several hastily built barns and sheds were required to house the overflow. Aside from the number of livestock on the grounds, the very marked quality found in all the judging rings was of such high character as to draw immediate and hearty appreciation from all visitors and furnished a topic for comment all the week.

Without attempting to say that any one particular department outshone the others, it is probably true that the swine department registered the greatest degree of improvement over former years. Nearly 900 head, representing all of the important breeds, were in the pens, and the general quality of the entries was above reproach. The entries were presented in decidedly improved condition, and the type shown followed very closely the most modern standards. Another striking fact noted in the hog show was the uniformity of the classes, there being less margin between the tops and bottoms than ever seen at

Sacramento. Next to the swine department the showing of beef cattle registered the greatest improvement. More Shorthorns and Herefords were on exhibit than in any former year. The dairy cattle division was hardly as well balanced or as representative as we have a right to expect in this state, but, at that, it must be admitted that the dairy cattle classes of the California state fair are easily in the lead of any Western state and the equal of the majority of the larger Eastern fairs. Indeed, this fact is true—it usually requires a higher standard of excellence to win in our dairy classes than in the other departments. A considerable falling off in entries was noted in the horse department, but this lack was largely made up by improved quality. Present conditions are such that exhibitors cannot afford to bring along a lot of cheap misfits as they have done in the past. The sheep department, while above the usual standard, was not as representative as it should be. For some reason that has never been satisfactorily explained, the sheep interests of this state do not come to the state fair in numbers.

Throughout the entire livestock department there was evidenced a degree of finish that at once lifted the California showing from lists of amateur exhibitors.

The fair just closed served to bring out several needs that must be given early attention if our fair is to continue to go ahead. First of all, it was demonstrated that more accommodations must be provided. This matter of improvements will depend largely upon the interest that the livestock men manifest. The directors are more than willing to do what they can but are handicapped by lack of funds. Money is needed; the only way to get it is through the legislature, and there is reason to hope that with sufficient pressure the legislature will make proper provision. Next to more barn room the great need is for a modern judging pavilion.

The Beef Cattle

The showing staged by the Shorthorn and Hereford breeders left little to be desired and indicated that at last, after a long wait, the beef cattle industry of California is about to get under way on a period of expansion full of promise. For a good many years the beef cattle department attracted few of the breeders and while cattle of excellent quality were shown the classes were small. During the last two years a large number of new Shorthorn and Hereford herds have been established and the show this year reflected the growth of the industry. From now forward it can be expected that California Shorthorns and Herefords will take a prominent place. To those who have attended the fair for a number of years the most striking feature was the splendid showing made by the Hereford breeders. From the small shows of a few years ago the Whitefaces had the distinction of leading their rivals in point of numbers for the first time in the history of the fair.

The Dairy Cattle Show

The showing of dairy cattle was probably the best balanced from start to finish that has ever been seen at the state fair. True, there have been times when a few more outstanding animals have been shown, but the general average has never been better. The Holstein classes brought forward an unusually large list of new exhibitors, and had a few more of the veterans been on hand the show would have taken extremely high rank. The Guernsey breeders were out in force and it was declared that the exhibit was probably the best yet seen at the state fair. The Jersey breeders put on their usual high class show but were compelled to take third place in point of numbers. For the most part the judging met with approval and in nearly every ring the judges commented on the real quality and unusual size of the entries.

The Sheep Show

The show of sheep, which was declared to be the best seen at Sacramento for a number of years, was made up from 16 flocks. There is still room for a greater sheep show at the California state fair, not from the standpoint of quality but in point of numbers. This is a great sheep

Home of King Korndyke Pontiac Mead

Bargains in Bull Calves from Tested Dams.
Top Herd in U. S. for Fat Production of 100 cows.
LOS ANGELES COUNTY FARM HOLSTEINS
HONDO, CALIF
3 Miles South of Downey on Downey-Long Beach Blvd.

Mammoth Dispersal Sale

Rosamaines Rancho, Riverside, Cal.

October 19-20-21, 1920



King Pontiac Netherland Segis 3rd



Sir Ormsby Skylark Rauwerd

Tuesday, October 19—We will sell Rosamaines Rancho in two parcels

235 ACRES—On which the buildings are located, with improvements costing over \$200 per acre at normal costs; 100 acres finest pasture in California with abundant water and shade; 60 acres in fine stand of alfalfa; 40 acres in corn; motor equipped pumping plants; buildings all electric lighted and sewerage; a profit making property suitable for either beef or dairy cattle breeding.

TERMS ON THIS PARCEL: One-third cash, balance in six equal annual payments, interest at 7 per cent payable semi-annually, 2 per cent discount for cash on deferred payments.

397½ ACRES—Adjoining the parcel described above, all under cultivation, first class vineyard—land, or good for grain or orchard. This is an exceptional investment proposition taken either in connection with the balance of the Rancho or separately. TERMS ON THIS PARCEL: One-

half cash, balance in four equal annual payments, seven per cent interest payable semi-annually, two per cent discount for cash on deferred payments.

Following the sale of the Rancho we will sell

50 REGISTERED DUROC-JERSEY HOGS
18 REGISTERED PERCHERON MARES & STALLIONS
1800 WHITE LEGHORN HENS AND PULLETS
A SMALL HERD OF GRADE DAIRY HEIFERS

THE IMPLEMENTS AND EQUIPMENT, including an almost new 12 foot McCormick Combined Harvester; a No. 50 Typhoon Ensilage cutter; a 20 h.p. motor; Osborn grain binder; beet drill; 8 farm wagons; plows, discs, rollers, mowing machines, rakes, harness, chains, lead bars, etc., and a complete acetylene lighting plant.

Wednesday and Thursday, October 20-21

We will disperse the entire high class herd of 150 REGISTERED HOLSTEINS

including the two great herd sires pictured above. This is one of the best collections yet offered in California, and just consider these facts: There are only 12 animals in the entire herd over 4 years old; there are only 7 animals in the entire herd over 6 years old; there are 105 descendants of the twice 34 lb. cow Gerben Abbekerk Maid in the sale; Gerben Abbekerk Maid herself, only nine years old, and seven of her two year old sisters by the same sire are in

the sale; it is the largest herd strong in Ormsby breeding ever offered in the west. Every animal is positively guaranteed to be a breeder; every animal, unless otherwise announced at sale, is tuberculin tested and sold subject to retest by the buyer.

Catalog Free on Request. Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, California.



Part of Barns at Rosamaines Rancho. (Inset) The Bottom Land Pasture.

state and many of the leading flocks of the West are owned here. It remains for the breeders to stage a more representative exhibit.

Bullard Bros., Woodland, took both championships in the Rambouillet classes. Butte City Ranch, Butte City, had the champion Shropshire ram, and Bishop Bros., San Ramon, had the champion ewe. C. Harold Hopkins, owner of the Straloch Farm, Davis, showed the two Hampshire champions. The Corriedale Sheep Company, Hollister, were the only exhibitors of Southdowns, Lincolns and Leicesters. Italian Vineyard Company, Guasti, were the sole exhibitors of Cotswolds. The Spencer Ranch Company, Cranmore, and Eugene C. Tribble, Lodi, showed Romneys. Tribble had the champion ram and the Spencer Company the top ewe.

THE SWINE SHOW AT THE STATE FAIR

By J. P. Bennett

Improvement in the showing made by all breeds was very noticeable in the swine department as compared with any previous year. The swine show has grown to such an extent that the present facilities are entirely inadequate. As each breed was crowded for space the prospects are very bright for a larger and better show next year. The problem that confronts the fair management in caring for such a large number of hogs is a very serious one. It is certain that unless much more space is provided, many who would otherwise show will be forced to stay at home. Overflow quarters had to be provided this year and every pen was filled and many were crowded.

Practically every Duroc entered was exhibited, and if the other breeds had made as near the 100 per cent showing several additional barns would have been necessary.

Taken as a whole, the class of animals shown would compare very favorably with those shown at any state fair in the country. Not only were the breeding classes well represented, but the exhibit of fat barrows was an outstanding feature of the show.

L. A. Weaver, Columbia, Missouri, placed the awards in the Duroc and Poland China departments, and Wilson Rowe, Davenport, Iowa, judged the Berkshires and other breeds, also the fat barrows. Both men rendered very efficient service.

HOLSTEIN EXHIBIT AT L. A. SHOW

Geo. M. Brown of the Burr Farm says: "We expect upward of 150 Holsteins, a display not exceeded in quality and number at any of the great national shows. Fully 100 animals will come from breeders close to Los Angeles.

California is fast becoming a great Holstein center. The reason is plain. Mounting feed costs, due to scarcity of forage producing land here, together with the enormous demand for good milk, makes it absolutely necessary that we dairymen use only high powered cows. The Holstein thrives here. For quantity and quality of milk she is beaten by few breeds. Our slogan now is \$1,000 worth of milk per Holstein cow per year."

With a view to determining the quality of animals to be entered in the livestock show, John L. Smith of the Hazelwood Farm, Spokane, Washington, a recognized Holstein authority and a former judge at Minneapolis and Denver national shows, and judge of Holsteins at this year's California state fair, was a guest last week of Mr. Brown and while here visited all the principal Holstein herds in Los Angeles County. Mr. Smith in a statement says:

"California Holstein herds as a whole are surpassingly fine. The Holsteins here are of surprisingly good quality. We have very fine Holsteins in the Northwest, but Eastern Holsteins are not to be compared with Western, and especially California, animals of this breed. Your local animals should win a large number of prizes at the national shows."

John Kincaid, proprietor of Mayflower Thoroughbred Stock Farm, East Bakersfield, writes that business is good. He has just sold a young Gano boar and a You'll Do gilt at satisfactory prices.

McCARTY--SHINN--ELLIOTT

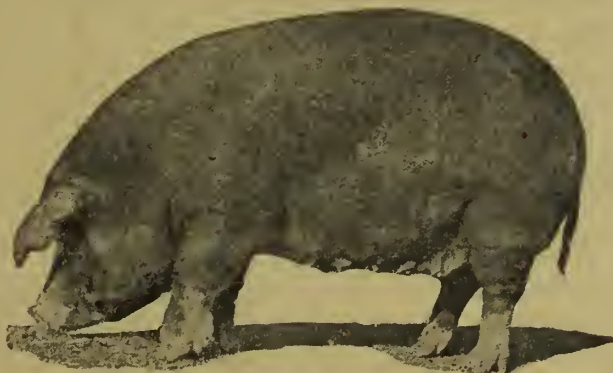
Big Type Poland-China Sale

Tulare, Cal., Monday, Sept. 27th, 1920

30 Bred Sows and Gilts—15 Open Gilts—5 Boars

SELECTED FROM THE

McCarty Herd---Alex. D. McCarty, Modesto
Fortuna Herd---Hugh C. Shinn, Tulare
Willows Ranch Herd, A. J. Elliott, Tulare

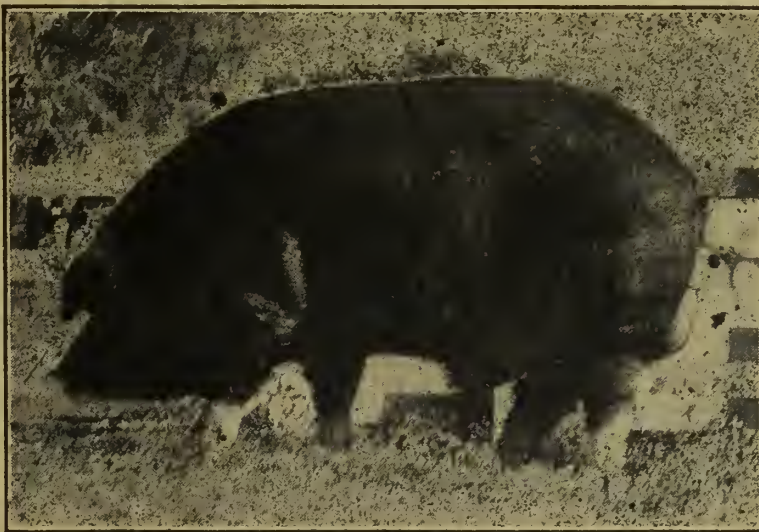


Frazier's Model

The Shinn consignment includes Frazier's Model, one of the best sows ever offered at public auction in the west. Fortuna Wonder, an outstanding daughter of Bridges Bob Wonder and Bridges Bobbie. High Spot and Fortuna Bobbie, 2 senior gilts out of the first prize get of sire at Sacramento. Two spring boars and 2 gilts by The Pilot, Grand Champion at the 1919 National Swine Show.

The McCarty consignment includes Perfect Beauty, 1st prize Jr. yearling sow at Sacramento. Miss Nebraska, by Rood's Choice. Two senior gilts out of the 1920 grand champion sow. Two great gilts by King Jones Over and out of Barbary Coast.

The Elliott consignment includes Lady Orange and Lady Timme sired by Hercules, a sire of champions and out of one of the greatest litters in the state. Long Jones, a big stretchy spring boar, out of the first prize litter at Sacramento. Ten gilts by The Californian and bred to Hercules Jr., one of the largest fall boars ever shown in California.



The Californian

Everything Cholera Immune and All Papers Delivered Sale Day

The McCarty-Shinn and Elliott sale to be held at Tulare September 27 will afford California breeders an opportunity to select from what will no doubt be the greatest lot of strictly big type Poland Chinas ever offered in the West. The offering includes many state fair prize winners and quite a number of real show prospects. The man in need of a good herd boar or sow prospect will find one of the highest class offerings to be sold in the country this year.

J. P. Bennett.



The Westerner

Secure the blood of The Pilot, Hercules, Big Bob, Mac's Big Orange, Big Gerstdale Jones, Giant Bob and many others listed among the most famous boars of the breed.

Remember the date, Monday, September 27th,

For Catalog and Information Address Hugh C. Shinn, Tulare
Auctioneers: G. W. Bell and Fred Gatewood

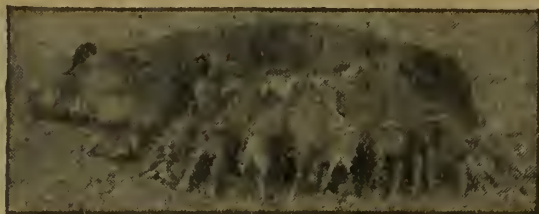
Duroc-Jerseys Are Prolific

and Profitable

They raise big families. Hardy, easy-feeding, quick maturing. That is why Duroc-Jerseys today outnumber any other breed in the United States. Out of all the hogs marketed in 1918, 51 percent were Duroc-Jerseys.

WRITE FOR BOOKLET—"DUROC-JERSEY HOGS ARE PROFITABLE" published and mailed free by the largest swine record association in the world (over 10,000 members) for the benefit of hog raisers everywhere.

THE NATIONAL DUROC-JERSEY RECORD ASSOCIATION
Dept. 130—PEORIA, ILLINOIS



A-1 Duroc Ranch

Where one of the state's greatest herds of Duroc-Jerseys is maintained. For years our Durocs have proven profitable to farmer and breeder alike. Better place your order now for spring pigs as what we will be able to spare will go quickly. Remember, this is the home of the state's highest priced (\$1500) and most valuable Duroc-Jersey sow.

J. P. Walker, RFD 1, Box 40½, Visalia, Cal.

FANNIE'S ORION KING

heads our select string of Duroc brood sows. At the recent Los Angeles County sales we personally selected two high class yearling sows (Pathfinder and Great Sensation blood direct), mated for September litters to the Winsor Ranch big-type boars. They find good company at our ranch.

C. C. ELLIS

EXETER, CAL.

The Greatest Duroc Boar of His Age! Choice Wonder 3d

a winner at the 1919 Iowa State fair, sired by the great boar, Mahaska Wonder, and a litter mate to the first prize junior boar of Iowa, heads our herd. He is the largest, heaviest boned, best footed boar in the state and he is being mated to the sows that have made this herd famous for futurity winners. Get your order in early for his pigs. Prices are most moderate. Satisfaction guaranteed.

JUNE ACRES STOCK FARM

V. F. Dolcini, Davis, Cal.

Sows and Gilts---GET ONE

Bred to farrow next two months. We are making an extremely low price on these to reduce our herd. At the price we won't keep them long. Write today. Quick, before they are all gone.

H. P. Slocum, Willows, Cal.

BERMA RANCH

Size and quality predominate in our big type Poland Chinas. No better big type sows are found in the state. Buy Berma Poland Chinas and you buy wisely.

C. E. DACK

R. H. Box 196

Fresno, Cal.

BERNSTEIN'S RANCH

Home of King's Big Ben, where he is siring those early developing big type Poland Chinas that are ready for the market at 6 mo. They have size, bone, quality and are from the easy feeding families.

W. Bernstein

Hanford, Cal.

Italian Vineyard Company

Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

Alex. Wilson, Supt., Guasti, Cal.

Bastanchury Better BERKSHIRES

LA HABRA, CAL.
E. N. WHITTEMORE, MGR.

Our herd consists of the best blood line obtainable in U. S. Among our junior yearling sows we have Lady Premier 220-221-222. These sows are Mr. Gentry's famous line of breeding; and fine individuals too; they are smooth, large, big boned animals.

Pay us a visit and see our young stock at reasonable prices.

Castlevue Ranch Berkshires

The Home of ACHIEVER the Boar and Enhancer, the Other Boar

A few choice boar pigs for sale sired by the above boars. A few choice bred sows for sale at reasonable prices.

Castlevue Ranch

Santa Rosa, Cal.

GEORGE W. BELL

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When in need of high class auctioneering service I would be glad to have breeders and farmers correspond with me. I have had years of experience, know values and know pedigrees. I am selling for many of the leading breeders of California and am prepared to deliver the same results that have attracted this custom. Terms reasonable. Write, wire or phone.

GEO. W. BELL

Tulare, California

Awards at the State Fair

Account of the livestock exhibits at the state fair appears on other pages. The awards in several of the classes follow:

Shorthorn Cattle

Exhibitors: T. S. Glide, Davis; Wm. Bond, Newark; W. M. Carruthers, Live Oak; Thos. B. Dibblee Estate, Lompoc; Geo. Dierrssen, Hood; Easton and Ward, Diablo; Edinger Johnston Co., Hood; H. L. and E. H. Murphy, Perkins; Ormondale Ranch, Redwood City; Pacheco Cattle Co., Hollister.

Aged bull—1, Glide on Imp. Scottish Lord. 2, Pacheco on Dalmeny Count. 3, Easton & Ward on Blackhawk Villager. 4, Bond on Cumberland Gloster.

Senior yearling—1, Glide on Cheerful Count. 2, Dibblee on Baron Lancaster.

Junior yearling—1, Ormondale on Ormondale Radium 2d. 2, Glide on Spicy Count. 3, Pacheco on Amanda's Dale. 4, Ormondale on Ormondale King. 5, Carruthers on Count's Baron.

Senior bull calf—Pacheco on Pacheco Lad 215th. 2, Glide on King's Count. 3, Dibblee on Baronson. 4, Dibblee on Silver Cup. 5, Dierrssen on Glenbrook Champion. 6, Carruthers on Count Glory Junior.

Junior bull calf—1, Bond on Cumberland Goods. 2, Dibblee on Royal Clansman. 3, H. L. and E. H. Murphy on Brighton Type. 4, Murphy on Brighton Type 2d. 5, Pacheco on Pacheco Lad.

Cows, three years old (with calf)—1, Glide on Little Sweetheart. 2, Pacheco on Pacheco Lass 80th. 3, Bond on Mayfield Victoria.

Two years old—1, Bond on Ormondale Maid 2d. 2, Glide on Village Lassie. 3, Easton & Ward on Blackhawk Roan Lady. 4, Glide on King's Countess.

Senior yearling heifer—1, Glide on Village Rose. 2, Pacheco on White Pacheco. 3, Glide on King's Countess 2d. 4, Carruthers on Violet Opal 2d.

Junior yearling heifers—1, Glide on Village Girl. 2, Pacheco on Pacheco Doris. 3, Easton & Ward on Blackhawk Roan Lady 2d. 4, Carruthers on Riverside Grace 3d.

Senior heifer calf—1, Pacheco on Sultan's Dale. 2, Dibblee on Village Ruby. 3, Glide on Hillcrest Flower 3d. 4, Glide on Cheerful Countess. 5, Easton & Ward on Blackhawk Victoria 2d. 6, Carruthers champion cow—Little Sweetheart. Junior champion female—Sultan's Dale.

Junior heifer calf—1, Glide on Maid of Honor. 2, Dibblee on Lavender Queen 5th. 3, Pacheco on Pacheco Lass 213th. 4, Pacheco on Pacheco Doris 2d. 5, Dibblee on Princess Royal.

Senior and grand champion bull—Imp. Scottish Lord. Junior champion bull—Pacheco Lad 215th. Senior and grand champion cow—Little Sweetheart. Junior champion—Sultan's Dale.

Aged herd—1, Glide. 2, Pacheco. 3, Wm. Bond. Breeder's young herd—1, Pacheco. 2, Glide. 3, Dibblee. 4, Carruthers. Calf herd—1, Pacheco. 2 and 4, Dibblee. 3, Glide. 5, Carruthers.

Get of sire—1, Easton & Ward. 2, Pacheco. 3, Glide. 4, Dibblee. Produce of dam—1, Easton & Ward. 2, Glide. 3, Ormondale Ranch. 4, Easton & Ward.

Hereford Cattle

Exhibitors: H. M. Barngrover, Santa Clara; J. A. Bunting, Mission San Jose; Wm. Briggs, Dixon; John H. Cazier & Sons Co., Wells, Nevada; G. W. Emmons, Danville; H. H. Gable, Esparto; Romie C. Jacks, San Francisco; Edward T. Morgan, Northan, Nevada; D. H. Ogden, Alpine; Chas. Rule, Jenner; P. W. Snyder, Los Molinos.

Aged bull—Rule on Beau Rosemont. 2, Morgan on Bourbon Columbus. 3, Jacks on Paragon Dare. 4, Emmons on Disturber Anxiety. 5, Emmons on Groves Perfection.

Two years old—1, Cazier & Sons Co. on Beau Blanchard 76th. 2, Romie C. Jacks on Woodford 34th. 3, Emmons on Junior Grove. 4, Barngrover on Don Woodford 4th. 5, Jacks on Carlos 157th.

Senior yearling bulls—1, Barngrover on Plumas Lad 3d. 2, Jacks on Beau Blanc Visage 9th.

Junior yearling bulls—1, Jacks on Wyoming's Type. 2, Cazier & Sons Co. on Nevada Lad 72d. 3, Gable on Yolo Fairfax. 4, Ogden on Conqueror.

Junior bull calf—1, Briggs on Pilot. 2, Morgan on Bourbon C. 30th. 3, Cazier & Sons on Blanchard 1st. 4, Cazier & Sons on Nevada Lad 129th. 5, Ogden on Dan Rupert.

Aged cow—1, Briggs on Miss Dale. 2, Cazier & Sons on Mischievous A. 3, Snyder on Rose Donald. 4, Gable on Anxiety Fairfax. 5, Jacks on Miss Debonair 4th.

Two years old—1, Jacks on Bocaldo Beauty. 2, Jacks on Georgia Princess 10th. 3, Gable on Standard Eyes 2d. 4, Briggs on Beauty. 5, Emmons on Maudy.

Junior yearling heifer—1, Jacks on Ruth Domino. 2, Rule on Queen Stanway 2d. 3, Jacks on Belle Grove. 4, Snyder on Miss Rupert 8th. 5, Cazier & Sons on Circe 5th.

Senior heifer calf—1, Cazier & Sons on Carnation 4th. 2, Cazier & Sons on Nevada 5th. 3, Briggs on Dale's Victory. 4, Barngrover on Byrdie Woodford. 5, Emmons on Miss Verbena 3d.

Junior heifer calf—1, Jacks on Dainty Dare. 2, Briggs on Beth. 3, Cazier & Sons on Standard Eyes 4th. 4, Emmons on Amy Diablo. 5, Cazier & Sons on Eunice 3d.

Aged herd—1, Jacks. 2, Barngrover. Young herd—1, Cazier & Sons. 2, Barngrover. Calf herd—1 and 2, Cazier & Sons. 3, Barngrover. 4, Ogden.

Get of sire—1 and 2, Cazier & Sons. 3, Ogden. Produce of dam—1, Gable. 2, 3 and 4, Barngrover.

Aberdeen-Angus Cattle

James Marwick, Santa Barbara, made the only exhibit of Angus Cattle.

Holstein Cattle

Exhibitors: Allana Farm, Dixon; Anderson & Fogarty, Sacramento; M. Aze-

vedo, Patterson; Anita M. Baldwin, Santa Anita; E. D. Barry Jr., Dagget; Dean Beeman, Woodland; Adelbert Benoit, Modesto; J. W. Benoit, Modesto; Bridgeford Holstein Co., Patterson; California George Junior Republic, Chino; Harold Cobeen, Live Oak; H. E. Cornwell, Modesto; Fred Cornwell, Modesto; Linnie Cornwell, Modesto; R. H. Davis, Modesto; Del Paso Heights Stock and Swine Breeders Association, Del Paso Heights; V. F. Dolcini, Davis; Everett W. Fox, Modesto; Wilhelmina Fox, Modesto; R. C. Gruhlke, Dixon; R. L. Holmes, Modesto; W. J. Higdon, Tulare; Wilbur Rutherford, Live Oak; Jerry W. Scudder, Santa Rosa; Six Bros. Dalry, Turlock; Clay Stammerjohan, Turlock; Kattie Stammerjohan, Turlock; Ruben Stammerjohan, Turlock; Wm. Stammerjohan, Turlock; Dorothy Strom, Live Oak; Kenneth Vantress, Live Oak; Dr. E. J. Weldon, Sacramento; Geo. M. York, Modesto.

Aged bull—1, Anita M. Baldwin on Mercl Lad Korndyke Burke. 2, Cornwell on Sir Johanna De Kol Rag Apple. 3, Holmes on Segis Pontiac Abbecker. 4, Scudder on Model Domino Glista. 5, Benoit on Lone Oak Terzool Korndyke.

Two years old—1, Dean Beeman on Dean Payne Segis. 2, Six Bros. Dairy on Inka Faskle DeKol. 3, Barry on Sir Aaggie Hiske Walker. 4, Del Paso Hts. Stock and Swine Breeders Association on Bonita Sir Cornucopia Glista.

Senior yearling bull—1, Higdon on Prince Bonnie Walker. 2, Benoit on Lone Oak Valdessa Findene. 3, Holmes on Karlray Pontiac Ormsby.

Junior yearling bull—1, Anita M. Baldwin on King Korndyke Pontiac Acme. 2, York on Golden State Rag Apple Korndyke. 3, Scudder on Pontiac Segis Abbecker. 4, Barry on Tosantos Korndyke Pletertje.

Senior bull calf—1, Azevedo Bros. on King Tora Pontiac Prilly. 2, Beeman on Dean Tule Segis. 3, Allana Farm on Admiral Pletertje Mechthilde. 4, Anita M. Baldwin on Prince Walker Cornucopia. 5, Allana Farm on Oak DeKol Ormsby Hengerveld. 6, Baldwin on unnamed.

Junior bull calf—1, Anderson & Fogarty on Jupiter Inka DeKol Segis. 2, Holmes on Holmes Chimacum Jane Woodcrest. 3, Azevedo Bros. on unnamed calf. 4, Higdon on King Korndyke Leda Pontiac. 5, Davis on Sir Bonita Hartog Korndyke.

Aged cow—1, Holmes on Ida Lotta Winifred Burke. 2, Holmes on Mona Fobes. 3, Allana Farm on Johanna Homestead Belle. 4, Dean Beeman on Johanna Hengerveld Capunna. 5, Davis on Bonita Hartog Gerben of Glen Eva 2d.

Three years old—1, Cornwell on Ciruela Walker. 2, Cornwell on Princess Holland Walker. 3, Davis on Bonita Pontiac. 4, Anita M. Baldwin on Anokaia Pontiac. 5, Anita M. Baldwin on Anokaia De Kol Gelsche.

Two years old—1, Allana Farm on Josephine Johanna Oak DeKol. 2, Dean Beeman on Bernice Na Dean DeKol. 3, Holmes on Meralto Electa Wayne Colantha. 4, Anita M. Baldwin on Blanche Nudine Clothilde Walker. 5, Jane Garden Farm on Jane Garden Magnolia Korndyke.

Senior yearling heifer—1, Jane Garden Farm on Jane Garden Dirkje Korndyke. 2, Dean Beeman on Pearl Na Dean DeKol. 3, Anita M. Baldwin on Anokaia Burke Cornucopia. 4, Holmes on Holmes Bracelet Ormsby. 5, Anita M. Baldwin on Anokaia Alcartha DeKol Segis.

Junior yearling heifer—1, Anita M. Baldwin on Anokaia Moorland Creamelle. 2, Anita M. Baldwin on Burbank Aaggie Lincoln. 3, Anita M. Baldwin on Burbank's Roderick Aralia DeKol. 4, Anita M. Baldwin on Burbank Mabel DeKol Niko. 5, Azevedo Bros. on Princess Cornucopia Prilly. 6, Anderson & Fogarty on Juliana DeKol Mead.

Senior heifer calf—1, Clay Stammerjohan on Addie Creamcup Pontiac Burke. 2, Allana Farm on Miss Niko Pletertje Ormsby. 3, Higdon on Ida Lotta Winnifred Burke 2d. 4, Higdon on Fay Triloma 2nd. 5, Anita M. Baldwin on unnamed heifer.

Junior heifer calf—1, Allana Farm on Miss Johanna Ormsby Hengerveld. 2, Higdon on Pearl Segis Pontiac. 3, Higdon on King Korndyke Pontiac Lillith. 4, Kattie Stammerjohan on unnamed calf. 5, Higdon on Miss Tulare Pontiac.

Senior champion bull—Anita M. Baldwin on Mercl Lad Korndyke Burke. Junior champion bull—Higdon on Prince Bonnie Walker. Senior champion cow—Allana Farm on Josephine Johanna Oak De Kol. Junior champion cow—Clay Stammerjohan on Addie Creamcup Pontiac Burke. Grand champion bull—Anita M. Baldwin on Mercl Lad Korndyke Burke. Grand champion cow—Allana Farm on Josephine Johanna Oak DeKol.

Aged herd—1, Anita M. Baldwin. 2, Dean Beeman. 3, Holmes.

Breeder's young herd—1, Anita M. Baldwin. 2, Higdon. 3, Davis. 4, Benoit.

Calf herd—1, Higdon. 2, Anita M. Baldwin. 3, Davis.

Get of sire—1, Higdon. 2, Allana Farm. 3, Anita M. Baldwin.

Produce of dam—1, Allana Farm. 2, Dean Beeman. 3, Anita M. Baldwin.

Dairy herd—Anita M. Baldwin.

Guernsey Cattle

Aged bull—Brant on May King of Fern Ridge. 2, Brant on Nelly's King of the Rancho. 3, Humphrey on Escalon Chalenger. 4, Harris on Royal Glenwood Champion.

Two years old—1, Hollow-Hill on Topper Langdon of Hollow-Hill. 2, James Marwick on Mysie's Linden Boy. 3, Humphrey on Nohleman of Maple Hill.

Junior yearling bull—1, Hollow-Hill on Reuben King of Hollow-Hill Farm.

Senior bull calf—1, Hollow-Hill on Carl E. King of Hollow-Hill Farm. 2, Brant on Paulion of the Rancho. 3, Brant on Adam of the Rancho. 4, Humphrey on Escalon Advancer.

Junior bull calf—1, Hollow-Hill on Reuben Langdon of Hollow-Hill Farm. 2, Humphrey on Escalon Rex. 3, Brant on

Warranted to Give Satisfaction Gombault's Caustic Balsam



Has Imitators But No Competitors
A Safe, Speedy, Positive Remedy for

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diphtheria. Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address The Lawrence-Williams Co., Cleveland, O.

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Kreso Dip No. 1 (STANDARDIZED)

Easy to use; efficient; economical; kills parasites; prevents disease.
Write for free booklets on the Care of Livestock and Poultry.

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PARKE, DAVIS & CO.
DETROIT, MICH.

CALEDONIA SHORTHORNS



Imp. Caledonia

Caledonia Shorthorns constitute one of the choicest collections of the breed owned in America. Our herd bulls, Imp. Caledonia, Gainford Matchless, grand champion at the 1919 San Francisco show and Pine Grove King stand out prominently in the West. Our females represent choice Scotch and American families, and are noted for their type and quality. We can at all times furnish foundation material and bulls suitable for any herd or for the range. Our prices are moderate and every animal is guaranteed. Visit our farm and herd. Send for special bull list.

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OFFICE—57 POST ST. SAN FRANCISCO.

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Boquan Guinea Stamp, the great Imported Young Broadheads bull. Golden Goods Jr, sire of LITTLE SWEETHEART, Grand Champion International Show, Chicago, 1919.

Bulls and heifers for sale.
Duroc-Jersey hogs for sale.

James McDonnell, Supt.

California Breeders

have sold more than \$500,000 worth of registered cattle in our sales, under the most stringent requirements laid down by any sales organization in America. Satisfied buyers have been the rule in all our sales.

**CALIFORNIA BREEDERS SALES
& PEDIGREE CO.,**
C. L. HUGHES, Sales Mgr., Sacramento, Cal.

Show Boy of the Rancho.

Senior champion bull—Brant on May King of Fern Ridge. Junior champion bull—Hollow-Hill on Rueben King of Hollow-Hill Farm. Senior champion cow—Brant on Princess of Meadowbrook. Junior champion cow—Hollow Hill on Rosie E. King of Hollow-Hill Farm. Grand champion bull—Brant on May King of Fern Ridge. Grand champion cow—Brant on Princess of Meadowbrook.

Aged cow—1, Brant on Princess of Meadowbrook. 2, Hollow-Hill on Imp. Cherry 3rd of the Effards. 3, Hollow-Hill on Imp. Dene Jewel. 4, Hollow-Hill on Imp. Britteware Mistletoe. 5, Brant on Elsie of the Rancho.

Three years old—1, Brant on Golden Glen Pansy. 2, Brant on Jeannie of Green Lodge. 3, Hollow-Hill on Rosa King of Hollow-Hill Farm. 4, Brant on Dorothea of Green Lodge.

Two years old—1, Brant on Little Queen of the Rancho. 2, Murphy on Escalon Evangeline. 3, Brant on Red Ring of the Rancho. 4, Hollow-Hill on Princess Selma. 5, Hollow-Hill on Primrose King of Hollow-Hill Farm.

Senior yearling heifers—1, Hollow-Hill on Della Langdon of Hollow-Hill Farm. 2, Brant on Rosemary of the Rancho. 3, Brant on Melissa of the Rancho. 4, Hol-Murphy on Escalon Lassie.

Junior yearling heifer—1, Hollow-Hill on Rosie E. King of Hollow-Hill Farm. 2, Brant on Melissa of the Rancho. 3, Hollow-Hill on Nesha E. King of Hollow-Hill Farm. 4, Humphrey on Escalon Daisy. 5, Humphrey on Escalon Rose.

Senior heifer calf—1, Hollow-Hill on Caroline E. Langdon of Hollow-Hill Farm. 2, Brant on Eleanor of the Rancho. 3, Brant on Jeannie of the Rancho. 4, Brant on Mattie of the Rancho.

Junior heifer calf—1, Hollow-Hill on Dene Langdon of Hollow-Hill Farm. 2, Hollow-Hill on Britannia E. King of Hollow-Hill Farm. 3, Brant on Golden Sequel of the Rancho. 4, Humphrey on Escalon Golden Anne. 5, Humphrey on unnamed calf.

Guernsey cow having official yearly record—1, Brant on Princess of Meadowbrook. 2, Hollow-Hill on Imp. Cherry III of the Effards.

Aged herd—1, Brant Rancho. 2, Hollow-Hill Farm. 3, Humphrey.

Breeder's young herd—1, Hollow-Hill Farm. 2, Brant Rancho. 3, Humphrey.

Calf herd—1, Brant Rancho. Get of sire—1, Hollow-Hill Farm. 2, Hollow-Hill Farm. 3, Brant Rancho. 4, Brant Rancho.

Produce of dam—1, Hollow-Hill Farm. 2, Brant Rancho. 3, Brant Rancho. 4, Humphrey.

Dairy herd—1, Brant Rancho. 2, Hollow-Hill Farm.

Exhibitors: Brant Rancho, Owensmouth; J. Francis O'Connor, Santa Rosa; A. B. Humphrey, Escalon; Hollow Hill Farm, Colton; James Marwick, Santa Barbara; M. A. Harris, Redwood City.

Jersey Cattle

Exhibitors: C. E. Barrows, Orland; M. Fortini, Orland; N. H. Locke, Lockeford; M. A. Luce, Santa Rosa; Guy H. Miller, Modesto; B. A. Rider, Orland; J. H. Sawyer, Galt; J. E. Thorp, Lockeford; J. B. Thorp, Stockton; H. V. Traynham, Davis; S. F. Williams, Chico.

Aged bull—Fortini on Dairy Maid's Gay Prince. 2, Thorp on Jolly Senator Raleigh. 3, Luce on Inglenook's Lass King. 4, Miller on Empress' Valet of L. 5, Miller on Jap's Perfection Owl. 6, Williams on Lucy's Warder Foss Boy.

Senior yearling bull—1, Thorp on Biddy's King of Mossdale. 2, Miller on Wanda's Altama Interest. 3, N. H. Locke Co. on The Judge of L. 4, N. H. Locke Co. on King's B's King of L. 5, N. H. Locke Co. on Financial P's King of L.

Junior yearling bull—1, Traynham on Rita's Boy Blue. 2, Traynham on Jolly Ben of Mossdale. 3, Rider on Rider's Pogis.

Senior bull calf—1, Fortini on King Arthur of Tintagel. 2, Thorp on Fairy Boy of Mossdale. 3, Thorp on Monie's Jolly Senator. 4, Williams on Golden Swift. 5, N. H. Locke Co. on Biddy's Famous Boy.

Junior bull calf—1, Fortini on Sir Lancelot of Tintagel. 2, Thorp on K. F. Buttercup's King of L. 3, Miller on Ramona's Perfection Owl. 4, Sawyer on Financial Financier.

Aged cow—1, Fortini on Croydon's Estelle Fox. 2, Miller on Cygna of Venadera. 3, Thorp on Salome of Mossdale. 4, N. H. Locke Co. on King's Biddy of L. 5, Thorp on Sonny St. Helier's Daughter.

Three years old—1, Barrows on Hamptonne's Buttercup. 2, Thorp on Desert's Honeysuckle. 3, Williams on Aleta Beau. 4, Miller on Cantata of Venadera.

Two years old—1, Fortini on Undulata's Fox Estelle. 2, Thorp on Goldie's Nehalem Cowslip. 3, Thorp on Bonnie of Mossdale 2d. 4, Williams on King Hanford's Anna Girl. 5, Miller on Christel of Venadera.

Senior yearling heifer—1, Fortini on Jewel of Tintagel. 2, Thorp on Violet of Mossdale. 3, Miller on Dagmar of Venadera. 4, Williams on Maidkin's Trix. 5, Miller on Kathryn of Venadera.

Junior yearling heifer—1, Barrows on King's Letty of L. 2, Williams on Chico Hope. 3, Miller on Diana of Venadera. 4, Thorp on Queen Bess of Mossdale. 5, Miller on Quality of Venadera.

Senior heifer calves—1, Fortini on Isolda of Tintagel. 2, Sawyer on Goldie's Dame Onota. 3, Miller on Gloria of Venadera. 4, Barrows on King's Lady of I. 5, Barrows on Stockwell's Jolly Lassie.

Junior heifer calves—1, Miller on Emblem of Venadera. 2, Thorp on Ramona of Mossdale. 3, Miller on Verna of Venadera.

Jersey cow having official record—Miller on Gladys of Venadera.

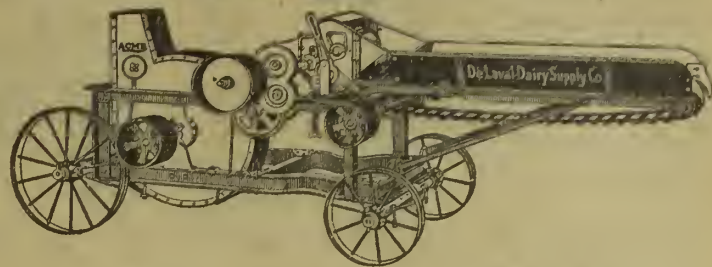
Senior champion bull—Fortini on Dairy Maid's Gay Prince. Junior champion bull—Thorp on Biddy's King of Mossdale. Senior champion cow—Fortini on Croydon's Estelle Fox. Grand champion bull—Fortini on Dairy Maid's Gay Prince. Grand champion cow—Fortini on Isolda of Tintagel.

Aged herd—1, Fortini. 2, Thorp. 3, Miller.

Breeder's young herd—1, Miller. 2, Thorp.

(Continued on Page 376.)

The ACME Cutter



YOU CAN HAVE YOURS NOW

We have just received a Car Load of Acme Cutters and can make immediate deliveries

A FEW SPECIAL FEATURES OF ACME CONSTRUCTION

All steel triple frame construction. Center hung blower fitted with six arm blower fan that will not clog. Big range of pulley sizes permits change in speed of cutter head and blower to suit length of cut and height of silo. All gears are well guarded. Soft steel shear pins through fly wheel and pulley prevent accidents to machine or operator. Reverse lever with gears enclosed in housing. No ratchet to stick at critical moment. Write for full descriptive illustrated catalog.

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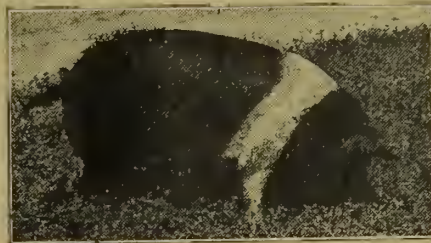
Jacks and Jennets for sale at all times. Come and see them.

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R.F.D.B. Box 74

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Grand Champion Hampshires



At our Llano Vista Ranch are found the leading families of the popular Hampshires: Gen. Tipton, Sioux Queen, Lookout Cherokee, and Director. Can supply foundation stuff in early spring pigs, sows with litters, bred sows, open gilts and young boars. Call at ranch any day or address

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Perris, Cal.

O.U.R. Hampshire Swine Ortega-Underhill-Rancho

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The Grand Champion Boar HARVEY'S CHOICE 53147 at head of our great herd of brood sows.

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Grand Champion Boar

at Los Angeles 1919

A. E. Harvey, Manager

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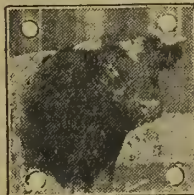
Grand Champion at Liberty Fair

SIoux QUEEN

Grand Champion at P.P.I.E.

18 High Class Brood Sows in herd—young stock for sale.

Redlands, Cal.



Mr. Shorthorn Breeder

Why don't you try growing out a few pure bred Shorthorn steers? Castrate some of your less desirable bulls and give them good care. You will be surprised what good steers they will make—and at the profits they will show. Once you try it you will keep up the practice. Shorthorn steers pay.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave., Chicago, Ill.

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A Few of the Champions and Grand Champions from the Greatest Livestock Exhibit Ever Held at the State Fair

No. 1, Beau Blanchard 76th, grand champion Hereford bull owned by J. H. Cazler & Sons, Wells, Nevada; 2, Imp. Scottish Lord, grand champion Shorthorn bull, T. S. Glide, Davis; 3, Imp. Electro, grand champion Aberdeen-Angus bull, James Marwick, Santa Barbara; 4, Little Sweetheart, grand champion Shorthorn cow, T. S. Glide, Davis; 5, Bocaldo Beauty, grand champion Hereford female, Romie C. Jacks, Monterey; 6, May King of Fern Ridge, grand champion Guernsey bull, Brant Rancho, Owensmouth; 7, Bellview Daisy, grand champion milking Shorthorn cow, J. D. Rowe & Sons, Davis; 8, Westward Ho, grand champion milking Shorthorn bull, J. D. Rowe & Sons, Davis; 9, Dairy Maid's Gay Prince, grand champion Jersey bull, M. Fortini, Orland; 10, Queen of Pathfinders, grand champion Duroc-Jersey sow, Diamond Bar Ranch, Spadra; 11, Choice Wonder 3d, grand champion Duroc-Jersey boar, V. F. Dolcini, Davis; 12, Liberty Girl 3d, grand champion Poland China sow, A. D. McCarty, Modesto.

—Photos by McCurry, Sacramento.

Additional Awards From the State Fair

Milking Shorthorn Awards

Exhibitors: Alexander & Kellogg, Davis; Wm. Bond, Newark; Thos. Harrison, Santa Rosa; G. A. Murphy, Perkins; Chas. L. Weaver, Tulare.

Aged bull—1, Alexander & Kellogg on Westward Ho. 2, Weaver on North Star. Two years old—1, Murphy on Mary's Chief.

Senior yearling—1, Harrison on Count Tickford.

Junior yearling—1, Alexander & Kellogg on Innisfall Favorite. 2, Murphy on Frantic Chief 3rd.

Senior bull calf—1, Harrison on Santa Rosa Pioneer. 2, Weaver on Champion Royal. 3, Alexander & Kellogg on Westward Clay. 4, Bond on Golden Type.

Junior bull calf—1, Alexander & Kellogg on Innisfall Lad. 2, Alexander & Kellogg on Innisfall Trickster. 3, Alexander & Kellogg on Gypsy Lad. 4, Weaver on Golden Star.

Aged bull—1, Alexander & Kellogg on Bellevue Daisy. 2, Harrison on Floretta Clay. 3, Harrison on Silver Lassie. 4, Alexander & Kellogg on Beggar Maid's Beauty. 5, Alexander & Kellogg on Princess Clay.

Three years old—1, Alexander & Kellogg on Alma. 2, Harrison on Vocalist.

Two years old—1, Harrison on Welfare's Belle. 2, Weaver on Bonnie May. 3, Alexander & Kellogg on Annabel.

Senior yearling heifer—1, Alexander & Kellogg on Valley Belle 6th. 2, Harrison on Hilarite Lee. 3, Harrison on Santa Rosa Queen. 4, Bond on Cumberland Goldie.

Junior yearling heifer—1, Alexander & Kellogg on Gypsy Girl. 2, Harrison on Frantic Girl. 3, Murphy on Sunnyside Helen 2d.

Senior heifer calf—1, Harrison on Dol-

ores Lee. 2, Harrison on Elsie Lee. 3, Alexander & Kellogg on Valley Belle 7th. 4, Harrison on Lady Lee. 5, Alexander & Kellogg on Waterloo Daisy 2nd.

Junior heifer calf—1, Alexander & Kellogg on Buttercup's Beauty 2nd.

Senior and grand champion bull—Westward Ho.

Junior champion bull—Count Tickford.

Senior and grand champion female—Bellevue Daisy.

Junior champion female—Gypsy Girl.

Aged herd—Alexander & Kellogg.

Breeder's young herd—Alexander & Kellogg.

Calf herd—Alexander & Kellogg.

Get of sire—1, Harrison. 2 and 3, Alexander & Kellogg.

Produce of dam—1 and 3, Alexander & Kellogg. 2 and 4, Harrison.

Cow with official yearly record—Harrison.

Berkshire Awards

Exhibitors: H. F. Alps, Reno, Nevada; Anchorage Farm Co., Orland; D. J. Bastanchury, La Habra; H. W. Cannon, Suisun; Castleview Ranch, (J. Francis O'Connor), Santa Rosa; Tom Hyland, Sebastopol; A. B. Humphrey, Escalon; Italian Vineyard Co., Guasti; Grace Trumbull Reed, Middle River; Sandercock Land Co., San Francisco; Paul R. Sims, Jr., Elk Grove; Superior California Farm Lands Co., Hamilton City; J. C. Throckmorton, Sebastopol; Mrs. J. G. Throckmorton, Sebastopol.

Aged boar—1, Bastanchury on Royal Longfellow 5th. 2, Italian Vineyard on Champion Masterpiece. 3, Superior Calif. on Superior Champion 3d. 4, Reed on Laurel's Emblem II.

Senior yearling—1, Castleview on Enhancer. 2, Italian Vineyard on Model Leader 3rd. 3, Humphrey on Escalon Type.

Junior yearling—1, Humphrey on Escalon Big Joe. 2, Humphrey on Grape Wild

Challenger. 3, Sandercock on Pegg's Leader. 4, Anchorage on Real Type's Leader. 5, Humphrey on Escalon Artful Leader 3d.

Senior boar pig—1, Humphrey on May's Superb. 2, Humphrey on Escalon Model Leader. 3, Anchorage on Duke's Mixture. 4, Anchorage on Anchorage Leader 75th.

Junior boar pig—1, Italian Vineyard on Matchless Type. 2, Humphrey on Grape Wild Champion 3d. 3, Castleview on Castleview Achiever. 4, Humphrey on Grape Wild Champion 2d. 5, Sandercock on Baron Duke's Last.

Aged sow—1, Humphrey on Grape Wild Rose. 2, Italian Vineyard on Duke's Natomas Princess. 3, Humphrey on Grape Wild Rose 2d. 4, Italian Vineyard on Wilsonia Princess Laurel. 5, Sandercock on Symboler's Star Lady.

Senior yearling—1, Humphrey on Grape Wild Rose 6th. 2, Anchorage on Grand Lady Escalon 2nd. 3, Italian Vineyard on Rival's Matchless Lady 6th. 4, Italian Vineyard on Emblem's Queen 12th. 5, Italian Vineyard on Emblem's Queen 13th.

Junior yearling—1, Humphrey on Grape Wild Rose 8th. 2, Italian Vineyard on Real Type's Lucindy 5th. 3, Italian Vineyard on Meadowview Duchess 6th. 4, Humphrey on Grape Wild Rose 9th. 5, Humphrey on Grape Wild Rose 13th.

Senior sow pig—1, Italian Vineyard on Castleview Royal Duchess. 2, Superior Calif. on Superior Champion Lady 16th. 3, Italian Vineyard on Real Type Belle 4th. 4, Italian Vineyard on Real Type Belle 5th.

Junior sow pig—1, Castleview on Achiever's Laurel. 2, Italian Vineyard on Real Matchless Lady. 3, Italian Vineyard on Burton's Oregon Lady. 4, Italian Vineyard on Burton's Oregon Lady 2d. 5, Humphrey on Grape Wild Rose 21st.

Aged herd—1, Humphrey. 2, Italian Vineyard. 3, Humphrey. 4, Bastanchury. Young herd—1 and 2, Italian Vineyard. 3, Humphrey.

Herd bred by exhibitor—1 and 2, Humphrey. 3, Superior Calif.

Get of sire—1 and 5, Humphrey. 2,

Italian Vineyard. 3, Bastanchury. 4, Superior Calif.

Produce of dam—1, Italian Vineyard. 2, 3 and 4, Humphrey.

Senior champion boar—Escalon Big Joe; reserve, Enhancer.

Junior champion boar—May's Superb; reserve, Matchless Type 2nd.

Senior champion sow—Grape Wild Rose 6th; reserve, Grape Wild Rose.

Junior champion sow—Castleview Royal Duchess; reserve, Achiever's Laurel.

Grand champion boar—Escalon Big Joe; reserve, Enhancer.

Grand champion sow—Grape Wild Rose 6th; reserve, Grape Wild Rose.

Duroc-Jersey Futurity Awards

(Other Duroc-Jersey awards on Page 377.)

Junior boar pig—1 and 3, Hollingshead. 2, Diamond Bar. 4 and 5, Walker. 6 and 7, Way. 8, Thorp.

Junior sow pig—1, Walker. 2 and 5, Diamond Bar. 3 and 4, Witherow & Stafford. 6 and 7, Hollingshead. 8, Brant.

Futurity litters—1, Diamond Bar. 2, Hollingshead. 3, Witherow & Stafford. 4 and 8, Dolcini. 5, Hollingshead. 6 and 7, Way.

Poland China Futurity Awards

(Other Poland China awards on Pages 376 and 377.)

Junior yearling boars—1, Buckland. 2, Young. 3, Bassett.

Senior boar pigs—1, Gatewood & Stevens. 2, Buckland. 3, Haag. 4, Horan. 5, Elliott. 6, McCarty.

Junior boar pigs—1, Elliott. 2, Bassett. 3, McCarty. 4, Bassett. 5, Shinn. 6, Bassett. 7 and 8, Elliott.

Junior yearling sows—1, McCarty. 2, McCarty. 3, Beckman. 4, Bassett. 5 and 6, Lehman.

Senior sow pigs—1 and 2, Shinn. 3 and 4, Bassett. 5, Elliott. 6, Haag.

Junior sow pigs—1, 3 and 4, Bassett. 2 and 8, Elliott. 5, 6 and 7, McCarty.

Futurity litters—1, Elliott. 2, Bassett. 3, McCarty. 4, Lohman. 5, Shinn. 6, Marshall. 7, Horan. 8, Beckman.

Diamond Bar Wins ON Duroc-Jersey Hogs at California State Fair

Senior and grand champion sow—Queen of Pathfinders.
 1st aged sow—Queen of Pathfinders.
 2nd aged sow—Pathfinder's Molly.
 3rd aged sow—Lucy Pathfinder.
 1st senior yearling—Orion Girl.
 2nd senior yearling—Pathfinder's Very Best.
 1st junior yearling and reserve grand champion—Orion Sensation Lady.
 2nd junior yearling sow—Smooth Duchess.
 3rd, 4th and 5th senior sow pig—
 2nd junior sow pig—Cherry Duchess 2nd.
 1st senior boar pig—Cherry Model.
 2nd senior boar—Reformer's Model.
 2nd junior boar—Cherry Pathfinder.
 1st aged herd, headed by Ace of Pathfinders.
 1st young herd, headed by Cherry Model.
 3rd young herd, headed by Cherry Pathfinder.
 1st herd bred by exhibitor, headed by Cherry Model.
 1st get of sire—get of Pathfinder headed by Ace of Pathfinders.
 3rd get of sire—get of Ace of Pathfinders.
 1st Produce of dam—pigs sired by Ace of Pathfinders.
 Reserve junior champion boar.

These winnings are the strongest made in recent years by any herd at the California State Fair, and this year's Duroc show was the greatest in its history.
 We can furnish you with young stock from these and other prize winners. See our exhibit at the Los Angeles Livestock Show or visit our ranch.

Diamond Bar Ranch

F. E. LEWIS, Owner and Manager
 SPADRA Los Angeles County

R. K. WALKER, Hog Dept.
 CALIFORNIA

Pacheco Cattle Company SHORTHORNS

won at this year's State Fair in 14 classes, 4 firsts and 6 seconds, junior champion bull and junior champion heifer.

Record at the last six State Fairs in 71 classes shown is 30 firsts and 26 seconds.

The last nine livestock shows and fairs we won get-of-sire, with Truedale progeny 5 times in succession and stood second with the get of his son, Pacheco Lad 58th, the following 4 times.

Pacheco Cattle Co.

C. N. Hawkins, Pres.

Norman Hall, Herdsman

Hollister, California



Build a Savings Bank in your Barnyard

When you build an Indiana Silo you build a Savings Bank in your barnyard. You can save 40% of corn fodder wastage, 10 to 25% on mill feed, barn space, labor and often field crops spoiled by rain.

An Indiana Silo pays dividends in increased butterfat and beef production, more stock per acre and freedom from pasture worries.

Get the Indiana Silo Facts

If you feed ten head of stock you are paying for a silo whether you own one or not. Indiana Silos have been used for 22 years. Twenty thousand on Pacific Coast farms. Write today for free silo book. Learn the facts.

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THREE BIG HEREFORD DAYS NOVEMBER 4-5-6 State Fair Grounds Sacramento, Cal.

On Thursday, November 4
 45—REGISTERED HEREFORDS—45

representing picked tops from leading western herds will be sold. It is planned to make this the banner Association sale to date, and that objective will be kept in mind when the selections are made. Full details of the offering will be available about October 1.

Sale under Auspices of
 Pacific Coast Hereford Cattle Breeders Association
 J. I. Cazier, Pres., Wells, Nevada. J. A. Bunting, Sec., Mission San Jose, Cal.

On Friday, November 5
 NEVADA HEREFORD RANCH

will make their first individual public offering, consisting of

55—Registered Herefords—55

A feature of this offering will be daughters of Harris Standard 2nd in calf to the \$10,000.00 Beau Blanchard 76th who was Grand Champion at the State Fair just closed. The many buyers who have already expressed a desire to buy these Standard heifers carrying the service of this great young bull will have a splendid selection in this offering. Detailed announcements will appear in later issues.

Owners: J. H. Cazier & Sons Co., Wells Nevada

On Saturday, November 6

Barngrover & Wright will sell a well bred lot of young cattle consisting of 50—REGISTERED HEREGORDS—50

including well bred cows with calves at foot by equally well bred sires, bred and open heifers, and a very few bulls. Details of this offering will also appear in later issues.

Owners: Barngrover & Wright, Santa Clara, Cal.

These three sales unquestionably afford to buyers the greatest opportunity for selection of high class breeding Herefords yet provided by an like event in the breed's affairs in the west. Catalogs of all three sales free on request. All of these sales under management of

CALIFORNIA BREEDERS SALES & PEDIGREE COMPANY
 C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneer Col. Ben A. Rhoades In the Ring, John A. Bunting

An Ormsby Sale--45 Registered Holsteins

Allana Farm, Dixon, Cal.
Thursday, September 23, at 10 A.M.



SIR PIETERTJE KORNDYKE ORMSBY

The entire high class herd at Allana Farm sells in this sale, excepting only one heifer and a few heifer calves, the event being necessary to adjust the existing partnership between J. P. and W. W. Phillips.

Sir Pietertje Korndyke Ormsby

For the first time in the west, a son of the world famous Sir Pietertje Ormsby Mercedes will be sold at public sale. He is four years old, a high class individual, a sure breeder, straight and right in every way. A number of his young daughters and sons are in the sale, and their type stamps him as a sire of real worth.

Females of Type and Breeding

Practically all of the females are young, mostly of Ormsby breeding, with good 7 day records up to over 26 lbs. butter in 7 days, a number with good yearly records, others now making splendid yearly records, and those that are bred are in calf to Sir Pietertje Korndyke Ormsby.

A Choice Lot of Young Bulls

The offering of bulls in this sale is particularly valuable, mostly of Ormsby breeding, unusually good individuals, and among them some that are good enough to head herds of registered females.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RE-TEST BY THE BUYER.

NOTE.—Allana Farm is 2 miles northeast of Dixon on the main State Highway between Davis and Dixon.

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, California.
Auctioneer —Col. Ben A. Rhoades, Los Angeles

Holstein Bull Calves For Sale Very Reasonable

Sired by Sir Veeman Korndyke Pontiac and out of yearly record cows. Write for prices, photo and pedigree.

BURR FARM

Box 220, Route 2. East 26th and Downey Road, Los Angeles

The Victory Herd of Holsteins

Holsteins of known value, headed by Sir Piebe De Kol Segle Pontiac, a son of King Segle Pontiac Count, acknowledged one of the breed's greatest sires, and our junior herd sire, King Pontiac Alcartra Prilly, whose dam made 34.61 lbs. butter out of 805 lbs. milk in 7 days, now on yearly test. A young bull from this herd is a profitable investment.

HILLCREST FARM, H. E. Spires, Mgr., Caruthers, Cal.
Duroc-Jersey Swine of Highest Quality

American
Steel Pipe & Tank
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WELL CASING

RIVETED
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354-P.E. Bldg. LOS ANGELES
Branch at Fresno

CORRUGATED
AND PLAIN
GALVANIZED
TANKS

PURE BRED BULLS FOR GRADES

The Riverside County farm bureau has fired the opening gun in a campaign to eliminate the grade bull from the dairy herds of Riverside County and all Southern California. Briefly, the plan is as follows:

Several breeders have offered pure bred bull calves to be traded for grade sires. The trade will be made on even terms, the former owner of the grade sire becoming the owner of a selected pure bred calf and the owner of the pure bred animal getting the amount which the grade bull brings on the block for beef as his price for the pure bred calf. By trading on this basis the owner of a grade bull becomes the owner of a pure bred bull without any additional cost. He must agree, however, to certain regulations in the contract with the dairy department of the Riverside County farm bureau, which guarantees that he retain the pure bred calf and use him to build up his herd. The object of the campaign is purely to increase the quality of the grade herds. The result will be higher producing herds, and greater profit to the dairyman. For this reason the exchange will be made only to bona fide dairymen.

The farm bureau has taken this matter up with breeders of registered stock and received a very favorable response. The breeders are a very progressive class and are anxious to see the dairy industry in Southern California put on the very best footing. The only way to do this is to introduce pure bred sires into the grade herds.

Little need be said regarding the benefits of using pure bred sires in grade herds. Records of cow testing associations show that practically every herd in the state averaging over 40 pounds butter fat per month is headed by a pure bred sire. Mr. Bahler, official cow tester for Riverside and San Bernardino Counties, makes the statement that every cow in these two counties producing over 300 pounds of butter fat per year was sired by a pure bred sire. There is no argument in favor of the grade bull unless it be to cut down the income tax.

Dairymen interested in this offer should get in touch with John F. Oeborn, assistant farm adviser of Riverside County. Only a limited number of pure bred animals will be exchanged and from present indications there will be many more applications than animals available. The transfer will be made during the Southern California fair.

COST OF 100 POUNDS OF MILK

A two year study of the cost of milk production undertaken cooperatively by the United States dairy division and Purdue University, on a number of dairy farms in northwest Indiana, has resulted in figures on the requirements for producing 100 pounds of milk in winter and in summer. To give permanent value to the results these requirements were determined in pounds of feed, hours of labor, etc., and by substituting present costs and values for the various items a farmer can determine very closely what it is costing him to produce 100 pounds of milk at the present time.

In the summer months the requirements for 100 pounds of milk were as follows: Concentrates, 20 pounds; dry roughage, 27.4 pounds; silage and other succulent roughage, 60.1 pounds; hauling and grinding concentrates, \$0.014; pasture, 0.04 acre; human labor, 2.2 hours; horse labor, 0.2 hour; overhead and other costs, \$0.393.

In the winter months the requirements for production were: Concentrates, 38.6 pounds; dry roughage, 66.8 pounds; silage and other succulent roughage, 147.6 pounds; hauling and grinding concentrates, \$0.03; bedding 20.3 pounds; human labor, 2.5 hours; horse labor, 0.3 hour; overhead and other costs, \$0.385.

It has been generally believed that the cost of producing milk was considerably higher in winter than in summer, and while this holds true as far as the gross cost is concerned, the figures obtained in this investigation show that the net cost of pro-

ducing 100 pounds of milk from November to April was only 1.8 per cent higher than the cost from May to October, inclusive, and that the total cost varied only slightly from month to month within each of these seasons. This small difference between net costs of production during winter and summer is largely due to the greater credit allowed for manure during the winter season.

The price received for the milk, however, fluctuated sharply from month to month.

Further details on requirements for milk production, including such factors as cost of keeping a cow for one year, cost of keeping a bull, proportion of work performed by each class of labor, percentage relation of various factors in the cost of production, and other details, are presented in Department Bulletin 858, Requirements and Cost of Producing Market Milk in Northwestern Indiana, which may be obtained from the United States Department of Agriculture on request.

SUNFLOWERS FOR SILAGE

On the train the other day I met a dairyman of Spokane, Washington. Of course I asked about crops and conditions. "Dry; awfully dry. Much of wheat not harvested, but pastured off." "How about corn for silage; plenty of that?" "No, a failure; but sunflower silage will save the day for us."

I note also in News Notes of our state department of agriculture the following:

"Some time ago a rancher in one of our mountain valleys, who was having more or less trouble in securing a crop suitable for silage, decided to try sunflowers.

"With that end in view a few acres were planted. Before they had reached a stage suitable for this purpose he had run out of green feed and his milk flow was decreasing at an alarming rate. He then decided he would have sufficient late oats and vetch to fill his silo, so he tried feeding the cows green sunflowers. They took to them at once. In fact, care had to be taken to prevent overfeeding. The milk flow came back as good as it had been at any time that year.

"Sunflowers are a regular crop on this ranch now, and it is claimed that they produce an unusual flow of milk. They are fed green, also used in the silo. The amount of this kind of feed produced on a small plot of ground is amazing. No one else has taken it up here, but it seems that it would be a good forage crop in some of our arid valleys."

AWARDS AT STATE FAIR

(Continued on Page 374.)

Calif herd—1, Miller. 2, Thorp.
Get of sire—1, Miller. 2, Williams. 3, N. H. Locke Co.
Produce of dam—1, Fortini. 2, Miller. 3, Williams.
Dairy herd—1, Miller. 2, Thorp.

Ayrshires

E. B. McFarland of San Francisco made the only exhibit of Ayrshires.

Poland China

Exhibitors: Nettie B. Andrews, Modesto; Bassett Bros., Hanford; Beckman & Langhorst, Lodi; Geo. V. Beckman & Sons, Lodi; A. Buckland & Son, Fresno; Thos. Caesar & Son, Reedley; J. N. Cook, Orland; Cross Bros. (Stahl), Merced; De Forest & Horr, Susanville; Vernon U. Dubel & W. E. Martin, Visalia; A. J. Elliott, Tulare; Ferguson & McKaig, Orland; Chas. Gatewood, Fresno; Johnnie Glusing, Winton; W. L. Haag & Son, Hanford; J. F. Harringer, Orland; N. K. Horan, Lockeford; H. A. Johansen, Fresno; Kern County Union High School, Bakersfield; J. F. Lehman, Lodi; E. M. Locke, Lockeford; Marshall & Son, Sebastopol; Alex. D. McCarty, San Francisco; C. McNeil, and F. Gatewood, Fresno; P. E. Mitchell, Atwater; Viola L. Renwick, Santa Barbara; Fred D. Ross, Hanford; Hugh C. Shinn, Tulare; Hugh C. Shinn & A. J. Elliott, Tulare; Cecil Temple, Raisin City; Miss Lily May Wood, Willows; R. J. Yates, Orland; W. A. Young, Lodi.

Aged boar—1, Ross on Big Timm. 2, Bassett Bros. on King's Timm. 3, Shinn & Elliott on The Californian. 4, Bassett Bros. on King's Gerstale Jones. 5, Marshall & Son on Mouw's Special 7th.

Senior yearling boar—1, Glusing on King George Big Bone. 2, Bassett Bros. on Model Giant. 3, Haag & Son on Lendorris Liberty Bond. 4, Beckman & Langhorst on Governor. 5, Cross Bros. on Aviator.

Junior yearling boar—1, Marshall & Son on Headlight. 2, Kern Co. Union High School on The Kern County Pilot. 3, McCarty on Orange Giant. 4, Andrews on I Am King. 5, Lehman on Surprise Prospect Jr.

Senior boar pig—1, Gatewood & Stephens on Navy Boy. 2, Chas. Gate-

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good on Giant Prospect. 3, Buckland &
Son on El Capitan. 4, Haag & Son on
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Hadley Wonder.

Junior boar pig—1, Elliott on unnamed
pig. 2, Bassett Bros. on Western Rain-
bow. 3, McCarty on Frisco Boy. 4, Bas-
sett Bros. on California Rainbow. 5,
Shinn on unnamed pig.

Aged sow—1, McCarty on Liberty Girl
3d. 2, Bassett Bros. on Columbus Lady.
3, McCarty on Black Beauty C. 4, Beck-
man & Sons on Belle's Beauty. 5, Cook
on Miss Wonder.

Senior yearling sow — 1, Lehman on
Evergreen Hutch. 2, Elliott on Tulare's
Best. 3, Johnnie Glusing on Lady Wash-
ington's Model. 4, McCarty on Nugget
Nell. 5, Caesar & Son on Big Lady M.

Aged herd — 1, McCarty. 2, Bassett
Bros. 3, Lehman.

Young herd—1, Shinn. 2, Elliott. 3,
Bassett Bros.

Breeder's herd—1, Bassett Bros. 2,
McCarty. 3, Elliott.

Get of sire—1, Shinn. 2, Elliott. 3,
Bassett Bros.

Produce of dam—1, Shinn. 2, Elliott.
3, Bassett Bros.

Fat barrow—1, 2, 3, Bassett Bros.
Pen of barrows — 1 and 2, Bassett
Bros. 3, McCarty.

Duroc-Jersey

Exhibitors: H. C. Baum, Placerville;
Marvey M. Berglund, Dixon; Jack Borge,
Dos Palos; Brant Rancho, Owensmouth;
Blanche Bright, Willows; C. D. Bright,
Glenn; Joe N. Chinoweth, Visalia; R. S.
Christman, Yuba City; L. P. Clark, Dur-
ham; D. G. Cummins & Son, Visalia;
Diamond Bar Ranch, Spadra; Dixon &
Dixon, Hughson; V. F. Dolcini, Davis;
C. C. Ellis, Exeter; Falfadale Farm, Per-
ris; W. J. Fulham & Sons, Visalia;
Hazel Louise Farm, Sacramento; George
E. Jeffrey, Vacaville; Maurice Hollings-
head & Sons, Orland; Hollow Hill Farm,
Colton; Elmer Lamb, Ceres; J. P. Mal-
lory, Fresno; Mokelumne Stock Farm
(Grover C. Hamilton), Stockton; Ordway
& Snyder, Hughson; J. Peterposten, Galt;
A. Pontrus, Fair Oaks; E. G. Stone, Mo-
desto; Allen Thompson & Sons, Tulare;
J. E. Thorp, Lockeford; J. P. Walker,
Visalia; W. M. Way & Son, Modesto;
Western Laboratories, Stockton; Mrs. R.
E. Whitley, Van Nuys; Winsor Ranch
(Morris C. Allen), Bonita; Witherow &
Stafford, Live Oak; Carl Woosley, Bonita;
Lew Wallace Jr., Folsom City.

Aged boar—1, Brant Rancho on May
Rose King. 2, Bright on Uneda Orion
B. 3, Way & Son on Lord's Orion Cherry.
4, Borge on Cal. Golden Model 3d. 5,
Borge on Dos Palos Chief.

Senior yearling boar—1, Falfadale Farm
on Great Orion Sensation. 2, Ordway &
Snyder on Orion Cherry Pathfinder. 3,
Hollingshead & Sons on Uneda Sensa-
tional Defender. 4, Mallory on California
Trailfinder. 5, Walker on Al's Orion
King.

Junior yearling boar—Dolori on Choice
Wonder 3rd. 2, Berglund on King Orion
Cherry. 3, The Western Laboratories on
Western Regulator. 4, Hollingshead &
Sons on Goldfinder. 5, Hollingshead &
Sons on Glennartney.

Senior boar pig—1, Diamond Bar Ranch
on unnamed pig. 2, Diamond Bar Ranch
on Performer's Model. 3, Brant Rancho
on May Rose Taxpayer. 4, Berglund on
unnamed pig. 5, Way & Son on Hustler.

Junior boar pig—1, Hollingshead & Sons
on High Sensation. 2, Diamond Bar
Ranch on Cherry Pathfinder. 3, Falfadale
Farm on Big Boned Sensation. 4,
Falfadale Farm on Falfadale Sensation.
5, Hollingshead & Sons on Valley Views
Sensation.

Aged sows—1, Diamond Bar Ranch on
Queen of Pathfinders. 2, Diamond Bar
Ranch on Pathfinder's Molly. 3, Diamond
Bar Ranch on Lucy Pathfinder. 4, Ful-
gham & Sons on Royal Critic 2nd. 5,
Way & Son on Model Helen of Ceres.

Senior yearling sow—1, Diamond Bar
Ranch on Orion Girl. 2, Diamond Bar
Ranch on Pathfinder's Best. 3, Brant
Rancho on May Rose Blossom. 4, Brant
Rancho on May Rose Lily. 5, Walker on
Orion's Crimson Lady.

Junior yearling sow—1, Diamond Bar
Ranch on Orion Sensation Lady. 2, Dia-
mond Bar Ranch on Smooth Duchess.
3, Falfadale Farm on Great Orioness 4th.
4, Whitley on Tu-Tock's Sensation Girl.
5, Fulgham & Sons on Pathfinder's Royal
Critic 2nd.

Junior sow pig—1, Falfadale Farm on
Tock's Pathfinder Girl. 2, Brant Rancho
on May Rose Tattletale. 3, Diamond Bar
Ranch on Wonder Queen. 4, Diamond
Bar Ranch on Cherry Rose. 5, Diamond
Bar Ranch on Lena Sensation.

Junior sow pig—1, Falfadale Farm on
Miss Defender Sensation. 2, Walker on
Crimson Lady. 3, Diamond Bar Ranch
on Cherry Duchess 2nd. 4, Falfadale Farm
on Bonnie Sensation. 5, Falfadale Farm
on Miss Orion Sensation.

Senior Champion Boar—1, Dolcini on
Choice Wonder 3rd.

Reserve Champion Boar — Falfadale
Farm on Great Orion Sensation.

Senior champion sow—Diamond Bar
Ranch on Queen of Pathfinders.

Reserve champion sow—Diamond Bar
Ranch on Orion Sensation Lady.

Junior champion sow—Whitley on Tu-
Tock's Pathfinder Girl.

Reserve champion junior sow—Falfadale
Farm on Miss Defender Sensation.

Grand champion boar — Dolcini on
Choice Wonder 3rd.

Reserve grand champion boar—Falfadale
Farm on Great Orion Sensation.

Grand champion sow—Diamond Bar
Ranch on Queen of Pathfinders.

Reserve grand champion sow—Diamond
Bar Ranch on Orion Sensation Lady.

Aged herd—1, Diamond Bar Ranch.
2, Falfadale Farm. 3, Dolcini.

Young herd—1, Diamond Bar Ranch.
2, Brant Ranch. 3, Diamond Bar Ranch.

Breeders herd—1, Diamond Bar Ranch.
2, Brant Ranch. 3, Hollingshead & Sons.

Get of sire—1, Diamond Bar Ranch. 2,
Brant Ranch. 3, Diamond Bar Ranch.

Produce of dam—1, Diamond Bar
Ranch. 2, Hollingshead & Sons. 3, Falfadale
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Fat barrow—1, The Western Labora-
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Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by **World Record sires**. **A. W. Morris & Sons**, Woodland, California.

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Everything included with practically every one of the money-making farms in best farming sections California and 32 other states and three Canadian provinces described in big illustrated 100-page book. Chance of your life to get the farm you want with horses, cows, hogs, poultry, wagons, implements, tools, hay and grain for stock, vegetables and fruit for your family, household furniture and fitted wood; big winter income from valuable woodlots; low prices for quick settlement estates, etc. See page 26, 368-acre farm with horses. 17 cattle, crops, equipment, fine buildings, close to world's greatest markets, for \$8400, with only \$3000 cash required; wonderful bargain page 6 of 150 acres with cows, produce, 450 fruit trees, good buildings, all for \$1800, only \$500 cash; or page 34, cozy equipped near-village farm for \$800. Hundreds others, all sizes, all prices, almost anywhere. More than a million farm buyers will read this big new catalog. Get yours now and have first choice. Call or write today for your free copy of this book of wonderful bargains. **STROUT FARM AGENCY**, 503 E. J., Wright-Callender Bldg., Los Angeles, California.

For Sale or Lease—400 Acres improved, 7 miles south of Tulare, \$125.00 per acre; 90 acres of alfalfa can be plowed up for cotton or grain. 150 acres improved 5 miles south of Shafter in Kern County, \$225.00 per acre. 54 acres of alfalfa can be plowed up for cotton or grain; cotton demonstration on two sides. 80 ACRES improved ½ mile from Rosedale store, Kern County, \$200 per acre, partly to cotton and corn now. Possession of either ranch this fall and if not sold soon will lease for crop shares or cash. Shallow water lift and pumping plant on each ranch and all are good land. Owner, **W. F. MARKS**, 1318 West Third Street, Los Angeles, California. Phone: 52471.

FOR SALE AND EXCHANGE
10-20-40-60 and 80 acre ranches, rich, level, plenty water; proven grape (Thompson seedless), fig and alfalfa land. Price right, easy terms.

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Some of the finest dairies in the state. **Chas. McNeely**, Alpaugh, California.

For Sale—46 Acre Alfalfa Ranch, good as any in state. Part cash, balance 5 years. Ranch will pay out in five years as dairy. Will sell 60 to 75 tons alfalfa hay with ranch. You must see this place to appreciate it. Full set buildings on ranch. If interested call or write. **John Salaberry**, Chowchilla, California.

Alpaugh Farm Lands—Any quantity. Grows grain, alfalfa, or cotton. Good dairy and poultry country. Excellent water conditions. **W. A. Settle**, Real Estate, Alpaugh, California.

For Sale—Ranches, Homes, Acres; free list. **Wilson Bros.**, Santa Cruz, California.

Irrigated Alfalfa Ranches for sale. Other crops, plenty water. **C. I. Graves**, Fallon, Nevada.

Bishop Land Co. can furnish from 5 to 1200 acres of the best land in the Valley. Address **Bishop**, California.

Fifteen Acres Best Pear Land, half pears and prunes. \$400.00 per acre. **Box 328, Lakeport**, California.

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- 2 Heavy duty 4 disc plows
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- 1 Cunningham pulverizer (6'x24" diam.)
- 1 California land roller 8 foot
- 1 Hop and Vineyard disc plow
- 1 Set stump-jump harrows
- 6 Ridging and furrowing plows
- 10 Four foot disc harrows
- 6 Sets steel drag harrows for Fordsons
- 1 Rotary harrow 6 ft (700 lbs.) for tractor
- 1 Johnson Road Scarifier
- 1 Disc Cultivator and Weeder, Fordson size (for killing morning glories, etc.)

Eveners—Doubletrees—Neck yokes—½-in. Cables for attaching implements to tractors. Call or write for circulars.

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Why pay more?
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Tractor Bargain for Sale—12-20 Yuba, like new. This is absolutely the best buy in a used tractor we have ever offered—cost \$3200—used 21 days—price \$1800. Address: **Leonard B. Fletcher**, San Fernando, California.

For Sale—International 8-16 tractor, good as new, only used 450 hours. Will demonstrate. Price right. **A. L. Stevens**, San Dimas, Phone 423.

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One ply \$1.50, 2 ply \$2.00, 3 ply \$2.50 complete with fixtures. Rubber roof paint 50¢ per gallon in 5 gal. lots.
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50,000 Florida Sour Stock; 100,000 California Sweet Seedling orange seed-bed stock, 15 months old, suitable for fall planting. It will pay you to plant this fall. SOUTHLAND NURSERIES, 1941 East Colorado Street, Pasadena, California. Phone Colorado 6352.

For Sale—Placentia Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. Ketscher's Nursery, 1101 E. 4th St., Santa Ana, California. Phone 572WK.

For Sale — A few thousand Peach and Plum trees. Write for prices, grade and varieties. Imperial Valley Nursery and Seed House, El Centro, California.

For Sale — Wonderful Pomegranate, French Prune Trees, Rooted Grape Vines. W. M. Burton Nursery, Box 43, Porterville.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Fruit Trees—Berry Plants scarce, order now. Cash Nursery, Sebastopol.

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Men With Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write J. H. Yetter, 115 North Broadway, Los Angeles.

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Breed Your Does to Saanee, a short coated Saanen buck. Purebreds \$15.00. If kid develops horns fee returned. Grade does \$7.50. If doe kid develops horns fee returned. The guarantee is worth the fee. Does left here must be arranged for in advance. L. C. Buhl, West 24th Street, Upland, California.

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The "Red Top" Steel Fence Posts have earned the right to be known as the world's foremost fence post.

Millions of these permanent steel fence posts have been installed on Government property, along the right-of-ways of leading railroads and on thousands of America's best farms.

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Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Planting Thompson Seedless

Will you please give me some information through your valuable paper in regard to Thompson Seedless grapes. About what time is the best to plant? What is the best intercrop and how many years can one raise intercrop without damaging vines? How soon after putting out can one get crop? About how much will it cost to harvest grapes? Any other information will be appreciated.—J. L., Manteca.

Thompson grapes may be planted during late February and March. Preference should be given to the later dates provided the vines can be kept dormant. In other words, the planting should be scheduled so the vines will start within a very short time after they are placed in the ground. Inter-cropping in young vineyards is not to be recommended as a general practice, except perhaps where such crops as long staple cotton can be successfully grown. With such a crop the money return will as a rule offset the fertility removed from the soil. If marketing conditions warrant legumes may sometimes be of value as an intercrop and are a benefit rather than a detriment to the soil, but if the crop cannot be marketed profitably it would be better to sow a legume crop which can be plowed under as green manure. Nothing except cover crops should be grown in the young vineyard after the first year. With proper growing conditions and care you may expect some crop from Thompsons the third year. The cost of harvesting varies somewhat with the tonnage produced. On the average the cost in 1919 was between \$25 and \$30 per dry ton.—F. K. H.

Drying Prunes In Sun

Will you please give instructions for drying prunes in the sun?—Subscriber, Owensmouth.

The following directions are sent out by the state university, as given by R. Schmidt:

Prunes ripen and drop from the tree naturally. They call for three pickings during harvest. Toward the close of the season the remaining fruits may be brought down by lightly shaking the trees. Experienced growers grade their prunes into three sizes. The fruit is placed in a wire basket and dipped for a few seconds in a solution of lye (one pound to 30 gallons of water), held at the boiling point. Shake basket sharply so fruits will shift position and be wet on all sides. Dipping the prunes causes a slight checking or cracking of the skin near the stem end, which facilitates drying. If the lye is too strong or immersion too long, the skin may peel off. After dipping the prunes are spread in a single layer upon trays and dried in the sun. They may dry unevenly. In the cool of the day the properly dried fruits may be removed. Prunes are dry when they are leathery to the touch but not hard enough to rattle against the tray. When too dry they may be dipped momentarily into boiling water and piled in bins or on a clean floor while still damp. The moisture is soon equalized. It is well to turn them over with a shovel a few times.

PROFITEERING

Butcher—"This meat is just a little over two pounds, madam."

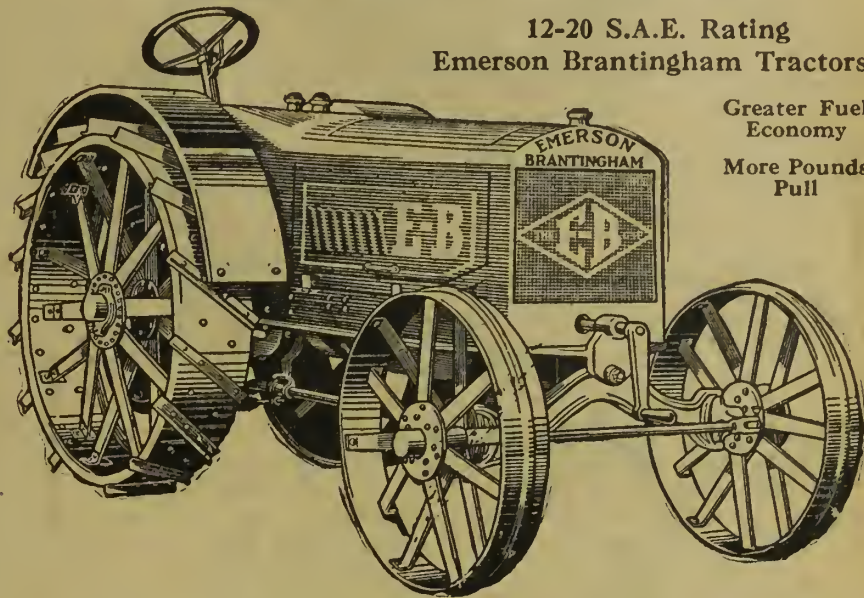
Mrs. Wisey—"Well, take one pound of fift off the scale and I'll see how big it is."

THE E-B LINE TRACTOR AND HORSE-DRAWN FARM IMPLEMENTS

12-20 S.A.E. Rating
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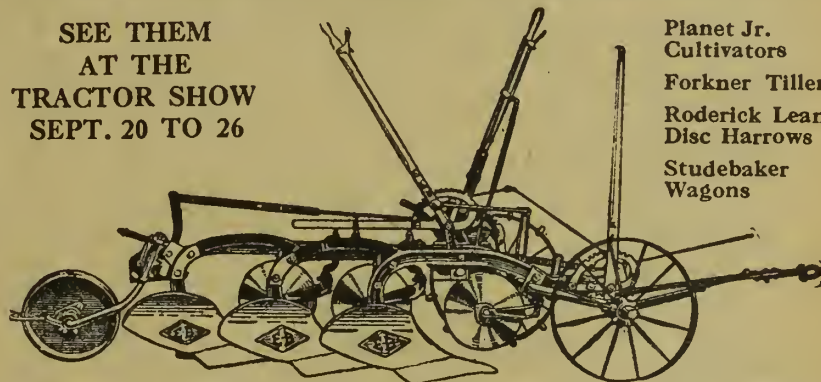
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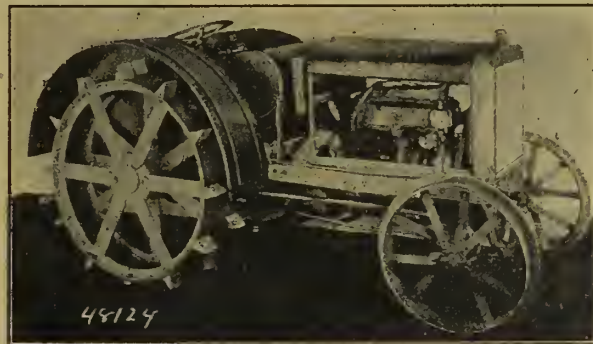
Have you a fully illustrated E-B 12-20 Motor Catalog? If your dealer does not have one for you we will gladly supply you.

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Red Seal Continental Tractor Engine, rated 10, guaranteed 12 h. p. No differential. Turning radius, 7 feet. All bearings "Timken," including front wheels. Complete Transmission dust proof enclosed running in oil.

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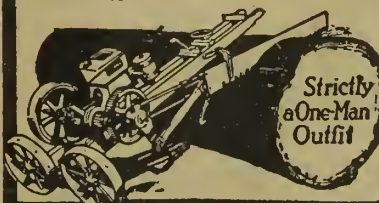
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At a Cost of 1½c. Per Cord! Saws any size log at the rate of a foot a minute. Does the work of ten men. As easily moved Low Direct Price on the OTTAWA. The from log to log or cut to cut as any One Man Saw, the first made and sold wheelbarrow. 4-cycle Frost Proof direct from factory to user. Greatest Engine has balanced crank shaft—labor-saver and money-maker ever in—pulls over 4 H. P. Magneto equipped, no batteries ever needed. Special clutch, lever controlled enables you to start and stop saw while engine is running. Automatic Governor regulates speed. Easy to start and stop saw while engine is running. When not sawing, engine runs pumps, feed mills, and other machinery. Pulley furnished.

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Cuts Down Trees, Saws Logs by Power, move, costs less to operate. When not sawing, engine runs pumps, feed mills, and other machinery. Pulley furnished.



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A postal will bring you our book, "Better Farming with Giant Farm Powders." Its 52 pages are full of short-cuts and labor-saving methods.

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"Everything for Blasting"

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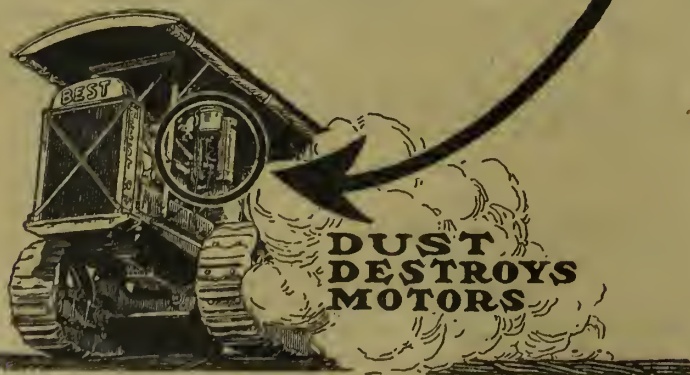
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DUST
DESTROYS
MOTORS

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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department. Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Difficulty With Real Estate Agent

I placed my ranch in South Dakota with a real estate agent to sell at a certain price. He procured a purchaser and notified me. I telegraphed that the price was acceptable providing the terms and commission were satisfactory to me. He forwarded the contract for the deed and I found the terms absurdly unsatisfactory and refused to complete the sale. The agent afterwards offered to let me make my own terms. Can the agent or the purchaser enforce a claim for damages based upon my telegram? Would I have a claim against my agent for concealing from me the land values in that locality and also the real offer of the purchaser?—Subscriber, Pomona.

It is apparent in this case a very vital element of the contract was not settled; that is to say, the terms upon which the land should be sold. Until those terms were settled definitely there was no contract. The second offer to allow you to make your own terms was rejected by you, in which you were within your rights. From the statement of the case it would seem that no action for damages would lie, but in order to be assured upon the matter you should take all of the correspondence and state the whole facts of the case to an attorney. It is the duty of an agent to act solely for his principal and to deal openly and fairly with that principal. He may be compelled to account to his principal for all profits, advantages, rights or privileges acquired in his dealings in excess of his lawful compensation and to transfer such excess to his principal, even though the principal suffered no injury by reason of the agent's dealing. The agent is deemed to hold all secret commissions or profits as the trustee of the principal, nor is he permitted to act as the agent of the other party to the dealing, unless with the express consent of his first principal. The agent is also required to notify his principal of every material fact concerning the subject matter of his agency, which comes to his knowledge. Whether the agent in this case would be required to inform you of the prevalence of higher prices for land would rest very largely upon the terms of the authority which you gave to him. Good faith would, of course, immediately suggest that the agent inform you. Certainly, any difference which he would receive from the amount which you were paid and the amount which the purchaser paid he would be required to remit to you, with the exception of his reasonable commission.

Produce License

Can a producer sell his crops from house to house without a license within the limits of an incorporated city?—Subscriber, Van Nuys.

There is no state or general law requiring such a license. Frequently, however, incorporated cities, and sometimes counties, require such license both for purposes of inspection and for police purposes.

Undelivered Deed

If I make deed of my real and personal property and properly acknowledge it, but instead of delivering, or recording it, place it in my safe deposit box for delivery to my wife after death, will this be a legal and valid conveyance?—Subscriber, Pomona.

It is essential to any deed or con-

veyance of real property that it be delivered to the grantee, and as long as such conveyance remains within the control of the grantor it is invalid. If the foregoing method was adopted, your property would follow the usual course of administration and be distributed as the law provides in case no will is left.

Open Account

How long does an open account run before it outlaws in California?—Subscriber, Princeton.

An action upon any contract, obligation or liability founded upon an instrument in writing, or an action to recover upon a book account, whether consisting of one or more entries, upon an account stated, upon a balance due, upon mutual, open and current account, may be brought at any time within four years, provided, however, that where an account stated is based upon an account of one item the time shall begin to run from the date of said item and where account stated is based upon an account of more than one item, the time shall begin to run from the date of the last item.

Unfulfilled Contract

Land is leased on shares for raising cotton. Under the written contract the landlord agrees to furnish ample water to irrigate all crops and sufficient teams and tools for the working thereof. He has done neither. Lessees have done their best to raise a crop but nearly two-thirds of the cotton is a loss. The landlord has his part of the cotton mortgaged. Can an attachment be run on the landlord's portion of the cotton for the loss occasioned these lessees by his breach of contract?—Subscriber, Spa.

If the landlord is a non-resident of the state, it is probable that if the complaint is properly drawn an attachment might issue against the real property, but in so far as the interest of a bona fide mortgagee is concerned, it will be necessary to indemnify the sheriff by an undertaking in double the value of the mortgage or deposit sufficient money to pay off the mortgage. It is exceedingly doubtful that an attachment would lie for breach of contract, as this is for an unliquidated sum of damages, if the defendant was a resident of this state, but it would seem that sufficient other remedies could be adopted upon taking the matter up with your local attorney so that you could be entirely protected.

Inspection of Livestock

Is there any law which requires the inspection of livestock shipped by express from one county to another in this state? If such law applies to cattle, does it also apply to pigs, goats and sheep?—Subscriber, Escondido.

The law creating the cattle protection board prescribes that it shall be the duty of the inspectors of the board to inspect all cattle for marks and brands, which are offered for transportation to any common carrier at the loading stations thereof. It defines the term cattle as every kind of animal of the bovine species. This seems to be the only provision in respect to the matter in question.

HOW TO FIND THE CAPACITY OF A CORN CRIB IN BUSHELS

Do you know how much corn is left in your crib or how many bushels a given space will contain? If you know the rules for estimating quantities of stored grain, the problem is simple.

In estimating the number of bushels of corn in a crib find the number of cubic feet in the pile of ear corn and divide this product by 2½. The result thus obtained represents the number of bushels of shelled corn in the pile of ears and is a fair approximation for

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These two brands are supreme in lubricating efficiency for Automobiles, Trucks and Tractors. We know it will pay farmers in cost of upkeep and eventual operating cost.

**Use Only the Best
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See our exhibit at the National Tractor Show, or write for prices.

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Sulphur

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILDW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand and Fleur de Soufre, packed in double

sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100% pure, in double sacks, for Dry Dusting and making Paste Sulphurs.

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men \$5 per day for making the solution and applying same.

To create additional available plant food and prevent smut in grain, drill into the soil 110 pounds per acre of TORO BRAND SPECIALLY PREPARED AGRICULTURAL SULPHUR—or our DIAMOND "S" BRAND REFINED POWDERED SULPHUR. This soil treatment has increased various crops up to 500%. Send for Circulars No. 6, 7 and 8.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dusting Sulphur, Mixtures, etc.

Carried in stock and mixed to order.

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We are equipped to make immediate shipments. Send for Price-list and Samples.

Ask us for prices for Carbon Bisulphide, the surest remedy for destroying ground squirrels.

Mariout Seed Barley

Good Clean Seed raised in Southern California from Davis Seed

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One man, one horse, one row. Self Gathering. Equal to a Corn Binder. Sold direct to Farmers for 22 yrs. Only \$28 with fodder binder. Free Catalog showing pictures of Harvester. PROCESS CORN HARVESTER CO., Galena, Ky.

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well settled ear corn of good quality. However, if the corn is of poor quality a higher factor should be used, say $2\frac{3}{4}$ or $2\frac{1}{2}$.

A standard bushel contains 2,150.42 cubic inches, or nearly $1\frac{1}{4}$ cubic feet. This is a bushel by measure of shelled corn or of other grain. A bushel of corn on the ear varies widely in volume and may occupy more or considerably less than twice the space occupied by a bushel of shelled corn. On the average, $2\frac{3}{4}$ cubic feet of good, sound ear corn will make a bushel of shelled corn.

If the crib is wider at the top than at the bottom, find the average width by adding together the width at the bottom and at the top of the corn and dividing by 2. Then multiply this average width by the height and length to find the cubic contents and divide by $2\frac{3}{4}$ to find the number of bushels of corn in the crib.

The cubic contents of a round crib are found by multiplying together the area of the base and the height of the crib. The area of the base is found by the formula used for finding the area of a circle; that is, by multiplying the diameter by itself, and this product by .7854. Then multiply by the height. Divide by $2\frac{3}{4}$ as before, and you have the number of bushels of shelled corn.

In buying or selling ear corn by weight, which is the general practice, it is customary to allow 70 pounds of air dried ear corn to the bushel. This quantity of ear corn will give about 56 pounds of shelled corn (or an even bushel, or 2,150.42 cubic inches) and 14 pounds of cobs. There is some variation due to difference in percentage of grain to cob and to the weight of a measured bushel of shelled corn.

To estimate the number of bushels in a bin of shelled corn, multiply together the length, breadth and height in feet of the pile of corn, and divide by $1\frac{1}{4}$. If the dimensions are in inches, multiply together the length, breadth and height and divide by 2,150. This same rule can be used for measuring or estimating the number of bushels of other grain, as wheat, rye, oats, etc. The contents of a round or cylindrical bin is found by multiplying the area of the base by the height, as directed for finding the contents of a round crib. The cubic feet of shelled corn are then converted into bushels by dividing by $1\frac{1}{4}$.

WORK AND YOU WORK ALONE

Strike and the world strikes with you, work and you work alone. Our souls are ablaze with a Bolshevik craze, the wildest that ever was known. Groan and there'll be a chorus, smile and you make no hit; for we've grown long hair and we preach despair, and throw a daily fit. Spend and the gang will cheer you, save and you have no friend; for we throw our bucks at the birds and ducks and borrow from all who'll lend. Knock and you'll be a winner, boost and you'll be a frost; for the old sane ways of pre-war days are now from the program lost. Strike and the world strikes with you, work and you work alone; for we'd rather yell and raise blue hell than strive for an honest bone. Rant and you are a leader, toil and you are a nut; 'twas a bitter day when we pulled away from the old time workaday rut. Wait and there'll be a blowup, watch and you'll see a slump, and the fads and crimes of these crazy times will go to the nation's dump.—New York Sun.

100 BUSHELS AN ACRE

Stimulated by the success of members of the 100 Bushel Corn Club of Ohio, several hundred Buckeye farmers are trying this year to raise an average of 100 or more bushels of corn per acre on ten acres. Yields are reduced to a uniform moisture content and are determined by crop specialists of the Ohio state university, which conducts the contest. The enrollment this season is said to be 50 per cent larger than in any previous year and includes many of the topnotch farmers in 27 counties from which entries have been received.

From April 1 to June 30 of the present year we imported from the Isle of Pines 13,326 crates of pomelos. In the corresponding period of 1919 we imported but 8,140 crates and but 45 crates of oranges. This year we imported no oranges during the period noted, but we greatly increased our vegetable imports, running up to 13,405 crates, valued at \$27,194.

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WALKING TRACTOR

This tractor delivers its power direct to both wheels for pulling, and all the power to one wheel for turning. The use of a separate clutch on each wheel with a live axle, permits it to make short turns.

It works equally well in loose sand and light or muddy soils, its wedge-shaped grousers getting positive traction and quitting the soil without lifting it or allowing the tractor weight to pack it.

*Exclusive Fageol Features
Increase their operating range
Reduce their operating cost*

See your local dealer immediately. He has a new plan that will make delivery when you want it certain

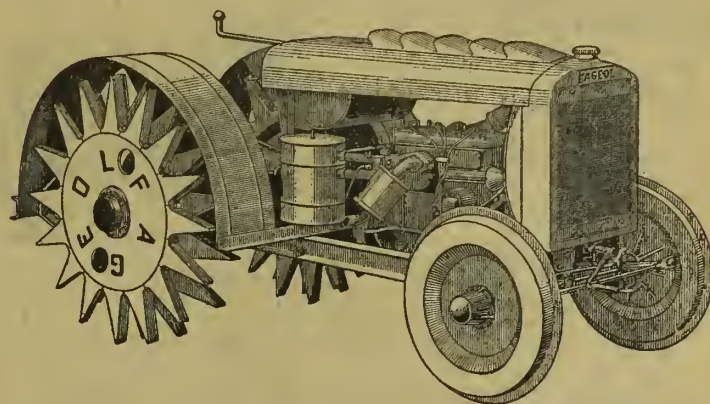
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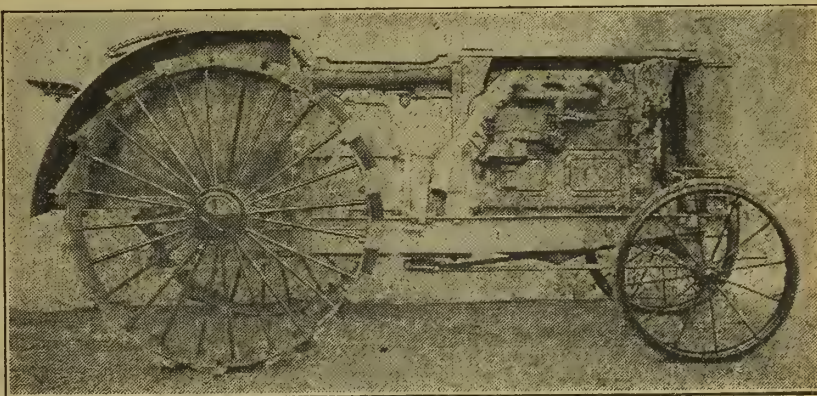
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We call your attention to the new Kardell Special Heavy Duty, Four-Cylinder Tractor Motor, having an S. A. E. rating of 41 horsepower to supplant the 25.6 horsepower engine formerly employed, thus raising the Kardell "Utility" Tractor from the class of 10-20 tractors to the 12-25 tractor class with but slight increase in weight or size and without the loss of any of its advantages of extreme simplicity or the sacrifice of its all-purpose features.

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W. L. CLEVELAND CO.

211 North Los Angeles Street

Los Angeles

Cal.

At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

Los Angeles Markets

Los Angeles, September 15, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 71 cents.

Dairy Exchange price last week on extras:					
Sept.	8	9	10	11	13
'20	71	71	71	71	71

CHEESE

Brokers' prices:
California flats, 21@23 per lb.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 67 per dozen; case count Prod. Exch. closing price 62 per dozen; pullets, Produce Exchange closing price 58 per dozen; pewee pullets, 43

Dairy Exchange prices last week on extras:					
Sept.	8	9	10	11	13
'20	64	64	65	65	67

POULTRY

Price to consumers: Hens, lt., 25; heavy, 30; colored, 34; broilers, 35@38; roasters, 38; old roosters, 14; fryers, 34; ducks, old, 23; ducklings, Pekin, 3½ up, 25; others 23; geese, 23; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47.
Belgian hares, live, 15@19; old, 9.

LIVESTOCK

Los Angeles, Sept. 14.—Weighed and delivered off cars without food or water: Hogs (hard-grain): 125 to 175 lbs., 16.50; 175 to 225 lbs., 17.50.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

HIDES

Milwaukee, Sept. 14.—Hides: Green, No. 1, according to weight, 12@15; No. 2, 11@14; green No. 1 bull hides, 9@11; No. 2, 8@10; part cured hides, No. 1, other grades in proportion, 14@16; cured No. 1 hides, 25 pounds and up, according to weight, 15@18; No. 2, 14@17; cured No. 1 bull hides, 13@15; No. 2, 12@14; dry salted hides, 19@24; No. 2, 17@21; dry

flint hides, 25@30; No. 2, 23@27.

Horse hides, No. 1, according to size, 4.00@6.00; No. 2, 3.00@5.00.

Calf skins, G. S. No. 1 veals, 8 to 15 pounds, 18@21; No. 2, 5 to 15 pounds, 16½@19½; deacons, G. S. No. 1, 8 pounds and down, per piece, 1.25; No. 2, 1.00; kips, G. S. No. 1 veals, 16@18; No. 2, 14½@16½; G. S. No. 1 grasser or fall, 15@17; No. 2, 13½@15½; G. S. No. 1 runner, 13@15; No. 2, 11½@13½; dry flint skins, 25@35; dry salted skins, 19@29.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, Sept. 14, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, market steady. Local: Early and White Rose, fancy No. 1's, mostly 1.00 and 1.25 per lug; 100 lbs. sacked No. 1's, mostly 2.50. Stocktons: Burbanks, quality, generally poor, 3.00@3.25 sacked. Sweet potatoes, lug, 1.50@1.75.

Onions: Local White and Yellow, lug, 75@1.00; 1.50@2.00 per 100 lbs. sacked. Stocktons: Whites and Yellows 75@1.00 per lug; 1.50@2.00 per 100 lbs. sacked. Stocktons: Whites, 2.40@2.75; Browns mostly 2.00 per lb. sacked.

Garlic, lb., 12@15; Mex., 17@18.

VEGETABLES

These are the actual prices obtained Sept. 14 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 11@12; Limas, 10@11.

Beets: Doz., 35@45.

Cabbage: Supplies moderate, market steady, movement good, wide range in quality. Best mostly 3 per lb.; per field crate, best 2.50@3.00.

Carrots: Doz., 35@45.

Celery: Doz. bunches, 1.00@1.35.

Corn: Local, best 1.35@1.50 per box.

Cucumbers: Market steady; local, best, lug, 60@75.

Egg Plant: Lb., 4@6.

Lettuce: Field crs., 1.25@1.50.

Peppers: Bells and Chills, lb., 4@5.

Squash: Local summer, lugs 85@1.25; Hubbard, lug, 3.00@3.50.

Tomatoes: Local lugs, best mostly, 50@

61.

Turnips: Per doz., 35@50.

DECIDUOUS FRUITS

These are the actual prices obtained Sept. 14 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal. Bushel boxes: Bellefleurs, 1.75@1.85. Local: Various varieties, 85@1.25 per lug; crabapples, lug, 1.00@1.25; few, 1.50.

Bananas: lb., 11@12.

Cantaloupes and Melons: Cantaloupes —Market steady, supplies liberal, quality and condition wide range. Local: Tiptop and Paul Rose, pink meats, standard crates, best 1.00@1.35. Watermelons, lb., ¼@1½.

Figs: Bx., 1.25@1.50.

Grapes: Muscats, Malagas and Hamburg, 6@7; Tokays, 10; Cornichon and Concord, 2.25 per 4 basket cr.

Peaches: Local, best, lug, 2.00@2.75.

Plums: Lb., 5@8.

Pears: Bartlett's, best, lb., local, mostly 6; Northern mostly 7@8.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 3.00@3.25; special packed brands, 3.75@4.25.

Lemons: Market dull, wide range in prices. Local stock: Packed, 3.00@3.50; loose, 1.25@1.75; lug, mostly 75.

Oranges: Supplies moderate, market strong. Valencias: Packed special brands, 126's, 150's and 176's, 7.75@8.25. Local packed, second grade, 4.00@4.50.

HONEY

U. S. bureau of markets: Movement limited, market unsettled, prices slightly lower account slump sugar market and financial stringency. Carloads f.o.b. usual terms: White Sage Orange, 18½@20. Extra light amber sage, 17½. Light amber sage, 16; light amber alfalfa, 15@17½; Beeswax: 38@44.

BEANS

California Lima Bean Growers, September 3:

The situation has not changed materially during the past few weeks, except that somewhat lower quotations have prevailed apparently due to attempted pressure of selling against depression caused by heavy decline in sugar and coffee. The generally current immediate shipment quotations on regular

Limas range around \$10.50 coast, with the market very quiet. Harvesting is now getting nicely under way and the first threshing machines are commencing to move out into the early districts. The yields cannot be determined with any accuracy until threshing has been in progress for a few days so that some averages can be secured.

GRAIN AND FEEDS

Grain Exch. prices bid Sept. 14:
Barley: Carlots, on track, 2.15@2.17½.
Bran: Kansas, 51.00.
Milo: Carlots, 3.07½@3.17½; No. 3 Eastern Milo, blk., 2.75.
Corn: Bk, Yellow, No. 2, 2.95.
Kafir, Eastern, No. 2, 2.71½.

HAY

Alfalfa Growers of California, September 15:

In the southern part of the state the yield of alfalfa is in most parts better than last year; in the northern smaller. Acreage planted this year smaller than acreage plowed up. Total production of state probably smaller than last year when it was materially below normal. According to the last government report this year's alfalfa production in the state is the smallest in over ten years. Unsold stock larger than last year in the southern part of the state, and about the same in the northern. Stocks in hands of dealers and consumers are probably on the whole much lighter than at this time last year, mainly owing to the tightness of money and credit. The conclusion would seem to be that a continued healthy demand for alfalfa is assured for the balance of the crop year. Shipments insignificant. An outstanding feature is that the demand for the choice grades of hay is increasing all the time, far exceeding the supply, while the demand for the coarse and common grades has decreased, with the result that the range of prices between the different grades is widening steadily. There were approximately 1,200 tons of hay of all kinds received on the Los Angeles tracks the week ending September 11 and 500 tons held over as against 700 tons the week before.

Fancy dairy 39.00
No. 1 dairy alfalfa 33.00
Standard Dairy 29.00
Stock alfalfa 25.00Accessibility
Counts

There's nothing that gives an owner as much satisfaction as to feel that he is master of his tractor.

This is one of the secrets of Hart-Parr 30's prestige among its owners. It is built for the farmer, not the mechanic.

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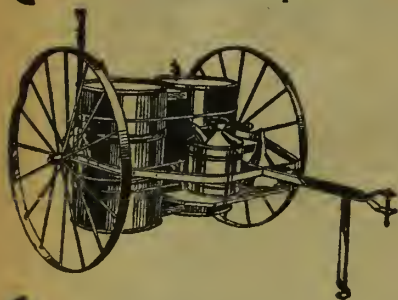
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You can't lose a drop of fuel with the TRACTOR TENDER when replenishing the fuel supply in your tractor. The tilting lever moves the barrels to any position for drawing fuel. Ratchet locks the barrel in place at any angle. No struggling with heavy barrels—no lifting. One hand does it quickly and easily. No fuel spilled on the ground or wasted. Just a brief halt to fill up the tank and your tractor is working again.

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F.O.B. Los Angeles

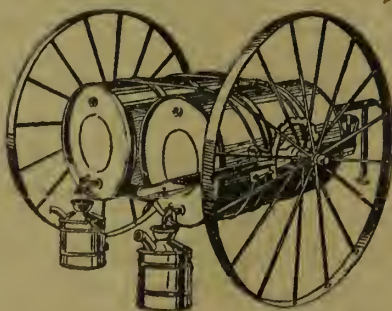
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Have now established permanent headquarters at my new U. & I. Union Stockyards, midway between Pomona and Ontario. Can thus command a wider field of rich dairy and swine breeding interests. 25 years' experience buying and selling in the heart of Iowa. For real service write me at

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10 Times Strongest, No Breaking, Buckling Etc.
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CARBO STEEL PRODUCTS CO. 2027 W. 11th St. CHICAGO

San Francisco Markets

San Francisco, Sept. 14, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations, lb.:
Extras 69
Dairy Exchange prices extras this week and year ago:
Sept. 7 8 9 10 11 13
'20 69½ 70½ .. 69½ .. 69

CHEESE

Dairy Exchange quotations:
Jack, full cream 23@24
Cal. Y. A. 37
Ore Trips 29½
Cal. Flats 26½@35

EGGS

The prices paid by wholesalers to producers are eight per cent less.
Dairy Exchange quotations, dozen including cases:
Extras 72
Extra Pullets 65½
Undersized 48
Dairy Exchange prices, extras this week and year ago:
Sept. 7 8 9 10 11 13
'20 68½ 72½ .. 72 .. 72

LIVESTOCK

Western Meat Company prices are:
Cattle: Grass steers, No. 1, weighing 1000 to 1200 lbs., 9½@9½; do, 1200 to 1400 lbs., 8½@9; do, second quality, 7@7½; thin, 5½@6½.

Cows and heifers: No. 1, 7½@8; second quality, 6@7; common to thin, 3@4.

Calves: Light weight, 10@10½; medium, 8@9; heavy, 7@8.

Lambs: Milk, 9@10; yearlings, 7½@8.

Sheep: Wethers, 7@7½; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 15; 150 to 225 lbs., 16½; 225 to 300 lbs., 16; 300 to 400 lbs., 15.

California Farm Bureau Marketing Association reports sales:

No.	Av. Wt.	Dock	Price
33	206	...	15.80
55	163	...	15.30
07	202	...	13.00
13	142	...	13.00
23	129	...	12.00
5	270	420	10.00

Two cars, eighteen consignors.

No.	Av. Wt.	Dock	Price
36	180	...	15.75
33	166	...	15.50
13	220	120	14.50
9	341	110	13.00
2	350	280	11.00

One car, thirteen consignors.

POULTRY

Wholesale prices are:
Broilers, 45@47. Colored fryers, 2 lbs. to 3 lbs., 40@45, market firm. Colored young roosters (smooth), 3 lbs. to 4 lbs., 45@48; staggy, 27@30. Old roosters (colored), 22@25, market firm. Leghorn hens, 3 lbs. and over, 30@32. Large colored hens, 38@42, market firm. Young Pekin ducks, 28@32; old ducks, 23@25; young geese, 28@32, market easy. Dressed turkeys: Young, large, 60@65, market firm; old, 40@45; live turkeys, young, 50@60; old, 43@50, market firm. Live Belgian hare, 18@22; dressed, 25@30. Squabs, large, 55@60 lb., market firm. Pigeons, 3.00@4.00 dozen, market firm.

POTATOES AND ONIONS

Potatoes, per cental: Delta, 2.25@2.50; choice, 2.50@2.65; sweets, 5½@6 lb. for No. 1.

Onions: New reds, 50@60; yellows, 1.75@1.25 cwt.; green onions, 1.25@1.50; brown, 1.25@1.50; Garlic, new, 10@12½.

VEGETABLES

Wholesale selling price:
Artichokes: Doz., 25@1.00.
Beans: Lb., String, 7@9; Lima, 10@11.
Carrots: Lb., 2.
Cucumbers: 35@50.
Cabbage, 2.00@2.50 per cwt.
Celery: Doz., 65@90.
Corn, 2.00@4.00.
Eggplant: Livingston, lug, 75@1.25.
Lettuce: Doz., 30@35.
Okra: bx. 1.00@1.25.
Peppers: Bells, bx., 50@75.
Peas: Lb., green, 8@12½.
Rhubarb: Lug, 1.75.
Spinach: Lb., 4@7.
Squash, Summer: Sacramento, lug, 50@65.
Tomatoes, 35@75 lug.

FRESH FRUITS

Apples: Gravensteins, fancy, 2.25@3.00; B grade, 1.75@2.25; Bellflowers, 1.50@1.75; Rhode Island Greenings, 1.50@2.00.
Avocados: Florida, doz., 7.00@9.00; Cal. Blacks, doz., 1.50@2.00.
Bananas: Lb., 10@11½.
Berries: Strawberries: 8-oz. baskets, 60@75 per drawer; 12-oz., basket, 75@90; raspberries, 60@75 per drawer; blackberries, 30@35.
Cantaloupes and Melons: Turlock cantaloupes: Standards, 1.25@1.50; do. Modesto Pink, 1.25@1.75; ponies, 75@1.00; flats, 50@60; Sacramento, 50@60 per lug; casabas, 75@1.00 per crate; watermelons, 1 per lb.; Honeydew, 75@1.00 per crate; muskmelons, 2.50@3.00 per large crate; Persian, 1.00@1.50 per crate.
Figs: Double, 1.00@1.25; single, 60@85; White, 75@1.00.
Grapes: Black, 1.75@2.25 per crate. Seedless, 1.75@2.00; small lug, 1.75@2.00; 2.25@2.75 per big lug; Tokay, 2.25@2.50 per crate, 2.50@2.75 per lug. Malaga, 1.75@2.25 per crate, 2.50@2.75 per lug; Muscat, 2.00 per crate.
Nectarines: 1.25@1.75 cr. or lug.
Peaches: Per small box, 1.25@1.75; Strawberry, free, 1.50@1.75; L. A. lugs, 1.75@2.25; large lugs, 2.50@3.00; some fancy at 3.50.
Pears: Bartlett, 3.00@4.00 for wrapped per box; 2.00@2.50 for No. 2.
Pineapples: Dozen, 4.00@5.00.
Plums: 1.25@1.50 per crate or box; do. fancy varieties, 1.75@2.00.
Pomegranates: box, 2.25@2.50.
Quinces: box, 1.50@2.00.

CITRUS

Valencia oranges, 6.50@7.50; lemons, 2.00@4.00; Grapefruit, 3.00@4.50.

GRAIN

Wheat: 3.75@3.90.
Oats: Red feed, new crop, 2.25@2.35.
Barley: New feed, 2.30@2.60; shipping, 2.45@2.50.

HAY

Alfalfa Growers of California under date of September 15:

There were 2032 tons received in San Francisco the week ending September 11. We are selling hay for approximately as follows:

No. 1 Dairy Alfalfa 29.00
Standard Dairy 26.00
Stock Hay 24.00
Under date of September 11, A. W. Scott Co. says:

Receipts past week, 2632 tons. Last week, 2256 tons. These heavy receipts, together with two holidays during the last week, have overstocked the market on business days. This naturally has a tendency to lower prices. Reports of the trading through the interior of the state are of small movement and light trade.

Transportation continues very fair and is handling practically all hay offered throughout Central California. Export shipment lighter than normal. Alfalfa continues in slightly better demand for California stock than any other grade of hay, although alfalfa prices feel the effect of the general market depression and are somewhat lower both in the country and in the city markets. Straw has been a negligible quantity, but reports of a few sales for stock feed have come in from country sections.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions).

Per Ton
Wheat Hay, fancy 26.00@28.00
Wheat Hay (light 5-wire bales) 23.00@25.00
Tame Oat Hay 23.00@25.00
Wild Oat Hay 17.00@19.00
Barley Hay 17.00@20.00
Alfalfa Hay (latter cuttings) 21.00@25.00

The office of the district forest supervisor has been changed from Bakersfield to Porterville.

Citrus Markets

Los Angeles, September 15.

The auctions are showing materially lower prices and a rather easier tone prevails in all Valencia markets. There are now less than 1,000 cars remaining, so the present situation concerns but slightly the citrus interests. Florida estimates 16,000,000 box output, 1920-21.

Grapefruit is showing more of its commercial importance than in any former season; between 30 and 40 cars yet remains for shipping.

Lemon market still flat with red ink sales reported almost every week.

Shipments

Shipments of oranges to date from Southern California since November 1, 1919, 28,498 cars; lemons, 7,593; total, 36,091. Same date last season: Oranges, 31,840; lemons, 8,987; total, 40,827. From Central California to date this season: Oranges, 5,375; lemons, 288; total, 5,663. To same date last season: Oranges, 3,714; lemons, 251; total 3,965. Northern Cali-

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Farmers, Miners, Builders—people in every kind of business are saving money buying used or renewed pipe from us. We sell every kind of pipe. Send in a list of your requirements today and get our prices. We have saved hundreds of people 33 1-3 to 50% on their pipe bills. Here's a partial list of some of the miles of pipe we have in stock for immediate delivery:

8000 ft. 6-Inch Riveted 16 gauge
700 ft. 8-Inch Riveted 16 gauge
5000 ft. 12-Inch Riveted 12 gauge
1000 ft. 18-Inch Riveted 12 gauge
800 ft. 22-Inch Riveted 14 gauge
300 ft. 24-Inch Riveted 14 gauge
500 ft. 36-Inch Riveted 12 gauge
10,000 feet light wrought iron 8-Inch pipe with cast iron collars.

All above pipe thoroughly overhauled and inspected and ready for immediate use.

We also have large quantity standard pipe and screw casing, pressure tested and guaranteed.

Don't delay—write for our prices on your pipe requirements today.

PACIFIC PIPE COMPANY

237 Howard St., San Francisco, Cal.

ifornia this season: Oranges, 261; lemons, 23; total, 284. To same date last season: Oranges, 244; lemons, 2; total, 246.

WEATHER REPORT

San Francisco, California, September 11, 1920.

Stations	Wk.	Season.	Norma.	Max.	Min.
Eureka	.00	.60	.45	66	54
Red Bluff	.00	.31	.13	90	64
Sacramento	.00	.00	.08	88	58
San Francisco	.00	.00	.01	72	56
San Jose	.00	.00	.09	80	64
Fresno	.00	.14	.00	88	60
San Luis Obispo	.00	.00	.05	84	56
Los Angeles	.00	.00	.00	76	62
San Diego	.00	.00	.00	72	64



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Power in ALL Four Wheels

That means more Traction and less wasted Power. We can prove that, for the same horsepower, the FITCH FOUR DRIVE is the most economical tractor you can buy.

Gears all enclosed—immediate change to pulley easily made—built of best materials—strong and simple—burns kerosene or gaso-

line—has a front draw-bar hitch, which increases the traction with the load pulled.

There are real reasons why a FITCH FOUR DRIVE Tractor is the logical one to buy. Come to our exhibit at Glendale. Then, if you are interested, we'll demonstrate for you on your own farm or ranch.

Fitch Four Drive Tractor Co.

San Francisco, California

Pacific Coast Distributors



Wm. F. Lutz Co.

Santa Ana, California

Southern California Dealers

See the Fitch Four Drive Tractor at Glendale, September 20-26, 1920

Metal Combs



An inquirer writing to the American Bee Journal and asking as to metal combs is answered by Editor Dandant in effect: "Try 'em and observe results." However, more at length, the editor says:

"It is not our custom to say anything in the reading columns about patented articles which are advertised. But in this case there seems to be a universal interest that requires a statement.

"It will take time to test these combs in a satisfactory manner, but we can point out the probable advantages and defects.

"A metal base in comb was invented long ago. A beekeeper of Toledo, Ohio, whose name is not now available, sent to us some 40 years ago two sheets of foundation made of tin-foil dipped in wax and laminated to give them the print of the cells. Those two sheets were put by us into a hive and forgotten. We have never seen them since. Evidently the bees built comb upon them so that it would have been necessary to mark them to

recognize them further. So we know that bees will work on metal if it is slightly coated with beeswax. But we have never thought of any advantage in this kind of foundation, for it would cost more than the other, and, with a little care, we can secure perfect combs with all wax.

"As to the full metal comb, we can see a big advantage in its being able to withstand the extreme heat and the weight of the bees, if the swarm accepts it. We can also see a large saving of beeswax and the avoiding of any drone comb, where it is supplied.

"Other advantages are the possibility of hoiling diseases of the brood, as well as moths, out of it. Whether the hoiling out of the bees' cocoons in very old combs is possible too is an open question which only long practice will solve. Moths will probably not work on them much as only the small larvae of this pest could worm their way through the interstices that exist from one cell to another in the metal comb. But they would riddle

them enough to make the hoiling out advisable.

"The disadvantages are, first of all, the high cost. If you render the wax of the combs of a colony and send that wax to a foundation factory you can have the entire set of foundation for that colony for about the price of one metal comb added to the value of that wax.

"Possibly disadvantages lie in the great conductivity of the metal for heat and cold. In a country where the temperature is constantly warm, as California or Texas, this objection has but little weight. But we are told by a beekeeper of Montana, and also by one of California, that brood has been chilled to death in these metal combs in cool nights. This requires further and protracted tests.

"The last disadvantage lies in the possibility of damage to the metal comb. A wax comb, if damaged by accident in extracting, transporting, mice gnawing, or otherwise, will be readily repaired by the bees; but a metal comb, once damaged, is wasted. Neither is it necessary that the entire comb be damaged to make it worthless. Who would want to keep in a hive one or more combs in which say ten per cent of the cells could not be

used either for brood or honey? We have before our eyes one of these combs, damaged on one side beyond repair by mice that gnawed it to eat the honey it contained.

"After two or three years of experience with these metal combs on a fairly good scale beekeepers will be better able to pass judgment upon them. Try them yourself.

"When we think the matter over, we wonder whether some material exists that might be molded into cells, which would be of a non-conducting material and could be repaired easily when damaged to large or small extent. Reviewing the different ingredients of human ingenuity and of natural origin, we find one that answers the purpose well—beeswax."

PROTECT YOUR GRAIN FROM RATS, FIRE AND THIEVES

There are many progressive farmers throughout California who are greatly increasing their net profits by protecting their grain from squirrels, rats and mice, fire, rain and thieves. The old style jute sacks permit serious wastes of time and grain in filling and sewing. They get torn and broken and have holes gnawed in them. When they are rehandled the grain is scattered and wasted. Conservative estimates of the loss of grain in sack handling from the field to the mill are in the neighborhood of ten per cent. Similar estimates place the waste in bulk handling at one or two per cent.

A metal bin, properly designed and constructed for farm storage, moisture proof and rat proof, wholly prevents rodents from attacking the grain. When losses incurred through gnawed and broken sacks and the heavy cost of the sacks themselves are taken into consideration, the expense of such a bin is almost negligible. In fact it often pays for itself the first season.

Again, there is the loss of time and money required for the sacking operation as performed in the field. This is eliminated when metal grain bins are used, the grain being loaded directly from the harvester into grain wagons. A hopper is placed under the grain discharge of the harvester, the grain wagon is backed under the hopper and filled by gravity flow through a spout attached to the hopper. The wagon is then driven directly to the farm grain bin.

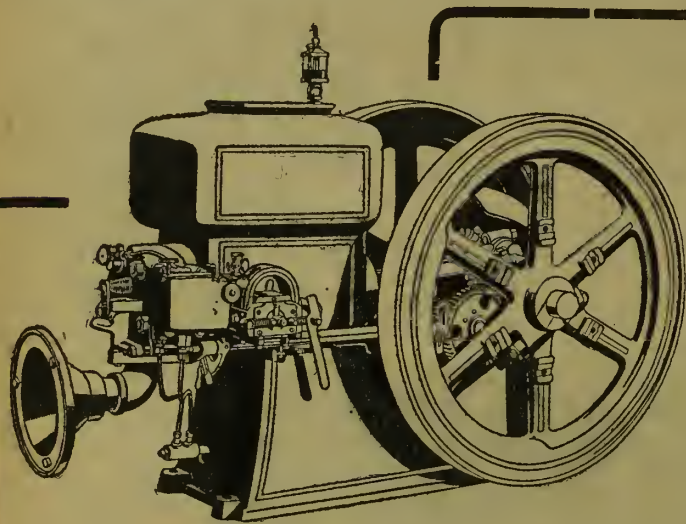
In various sections of California farmers are clubbing together and building grain loading stations at the railroad sidings. The cost of bulk handling is about one-fourth that of handling in bags, according to the crop technologist in charge of grain standardization, United States bureau of plant industry.

HEALTH CENTERS

The American Red Cross, relieved of the strenuous work of the war and the first few months following its close, is now extending its activities to rural districts where it has organized health associations and is encouraging ethical and physical progress. It writes:

"The American Red Cross has definitely decided upon health service as its principal peace time activity. In line with the league of Red Cross societies, it has adopted the following health service program: To stimulate and maintain interest in public health work. To support, and, if need be, supplement the work of government agencies. To disseminate useful knowledge concerning health through demonstrations, education and otherwise.

"The American Red Cross has decided that it can best carry out this health service program through the medium of the health center. This decision was arrived at largely upon recommendations of leading health experts in the United States. The organization takes a general practical interest in the problems of disease prevention and health preservation as a whole. It is not exclusively in combating any one disease. It does not center its attention on any one group of people. It desires to be of practical and effective service to all the people and to all the health interests of any community. It is ready to act only in response to the demands of the social sense of any community."



Hercules Engines

ANNOUNCEMENT:—Anticipating your needs we entered our orders early and have just received several car loads of Hercules Engines. For the first time in nearly two years our line of sizes is complete and we will be able to make immediate shipments for a brief period only. Our advice is—Buy now!

SMITH-BOOTH-USHER CO.

Pumps - Engines - Motors - Supplies

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SAN FRANCISCO: 50-60 Fremont St.

-keep down the up-keep with VENTURA TRACTOR OIL



YOUR tractor is always working under a heavy load. It plugs along, hour after hour, sizzling hot and surrounded by dust.

The engine needs the best oil you can get to lubricate it under these difficult conditions. You can depend upon "Ventura" Tractor Oil to give real service. "Ventura" is a paraffin-base oil—resists heat and clings to the hot, working parts, preventing friction and wear. That's why it's cheaper.

We make barrel deliveries anywhere. Write for prices and free lubrication chart.

VENTURA REFINING COMPANY
Los Angeles, Calif. Branch at Colton, Calif.

PARAFFIN-BASE OIL

THE SOUTHERN CALIFORNIA FAIR

The Southern California Fair at Riverside continues to grow in popularity among breeders and exhibitors generally. The reason undoubtedly is that it is in very truth a "Farmers' Fair." The president of the farm bureau of Riverside County, who is a well known breeder and exhibitor, is president of the fair. The farm bureaus of adjoining counties are interested. Last year the educational demonstrations conducted at this fair gained state wide and even nation wide publicity. This year another step in realistic demonstration will be taken. The agricultural and horticultural display this fall promises to excel even that of last year. A number of counties will enter in competition in displaying their products and Riverside County, which is not permitted to compete for the county prizes, will be shown in numerous community exhibits.

The livestock show will be the largest in the eight years history of the fair. The livestock buildings, which were doubled in capacity last year, have been equally enlarged this year. The exhibit of dairy cattle reflects the steady growth of this industry in the south, with splendid representation from the leading dairy herds of the state.

The swine display is another strong feature of this fair. Exhibitors find that the crowds which visit the show pens are made up very largely of real farmers and stockmen, men who are judges of livestock and vitally interested in what they are looking at. For several years Riverside has staged one of the leading swine shows in the state, and this year the best herds on the coast will be represented by their best individuals.

Other departments of the fair will also be strongly featured. For instance, the display of milk goats last year was the largest ever shown anywhere. This fall the goat display will be much larger than last year and will doubtless maintain its lead as the largest goat show. Poultry has also always been a strong feature and the show this fall will be put on under direction of one of the best poultry showmen in the state. The show will include a fine exhibit of pigeons and bantams.

The racing program is a strong one. There will be six days of racing and the speediest horses on the coast will be in the going.

NATIONAL GRANGE ANNUAL

Committees have been named for the work of the 54th annual session of the National Grange, which is to be held at Boston, Massachusetts, November 10. The chairmen of the more important committees are the following state masters:

Agriculture, John A. McSparran, Pennsylvania; cooperation, L. J. Taher, Ohio; education, C. E. Spence, Oregon; foreign relations, G. W. Dixon, South Dakota; forestry and conservation, Herman Ihde, Wisconsin; highways, W. H. Havens, New Jersey; home economics, Mrs. Cora E. Ketcham, Michigan; insurance, William Bouck, Washington; peace, Mrs. Pearl Stillwell, Wyoming; postal improvement, John Morris, Colorado; pure foods, S. B. Steere, Rhode Island; taxation, T. C. Atkeson, West Virginia; transportation, C. O. Raine, Missouri.

Few persons outside of the Grange and not all within the order, understand the machinery of the National Grange session. It is a legislative proceeding, conducted on the same general lines as the United States congress. Every matter introduced is in resolution form, must be referred to the appropriate committee, where it is given a fair hearing, careful attention, and a majority disposition. After this it is reported back to the whole body, with opportunity for discussion, and receives a majority disposition there. From a ten days session of this kind comes the National Grange legislative program and the plans and policies for the ensuing year's work of this great farmers fraternity.

The pear crop of Lake County is light this year. However, many orchards are just coming into bearing, hence the crop will probably be as large as usual. Picking began about August 15.

A NEW CLOVER

A recent New South Wales agricultural bulletin gives the following boost to a new clover found in that part of Australia, known as Shearman's clover.

"A clover that will hold its own with paspalum, that will carry four to five head of stock per acre during its growing season, that is eaten so greedily as to cause bloating in half an hour, that will outstrip any clover yet known in vigor of growth on wet soils, that appears to be equally palatable at any stage of its growth—such is a description which may fairly be applied to a new fodder plant recently brought to light."

J. H. Shearman found a spreading patch near a water ditch, and says: "It soon grew along the drain for a distance of 20 feet and blocked the water from running. The clover had then to be shoveled out, and I put it in a grazing paddock, where I fully expected that the cattle, by continuously eating it down, would kill it. To my surprise, however, it grew and spread, killing out most of the other

grasses as it ran over the ground. This process took about ten years before I discovered that I had a clover really worth caring for. I then began to plant it as fast as possible, and at present have about 12 acres fully covered and growing beautifully.

"I am now able to make a fine lot of hay each year of exceptionally good quality. The clover grows so vigorously when the land is dry that, without any exaggeration whatever, it is capable of grazing four to five head of cattle per acre during the summer months. Of course, I am only referring to land similar to my own, which was originally salt marsh and has been considerably enhanced in value by the clover, which appears to grow almost as well in water as out. So far I have found no seed."

WEAKENED BY RUST

Many a piece of farm machinery is broken in use, at a busy critical period, because the part has become weakened by rust.

Nowadays when a machine breaks there is not only the cost of replace-

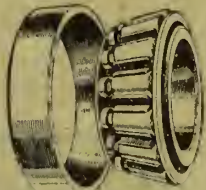
ment to be considered but the machine may be out of service for several days or weeks because the dealer's stock of parts is low and completely out on some items.

And it isn't the dealer's fault, either, in most cases. He has orders in for short stock parts, but ordering is one thing and getting orders filled is something else, as all machinery dealers and their customers know to their sorrow.

All farm machinery should be kept painted. Reduce breakage to the minimum. Parts will break often enough when machines are handled with the utmost care, but just now when replacements are so expensive and so difficult to get promptly, regardless of price, the least the farmer can do is to guard against this unnecessary weakening of essential equipment by allowing rust to set in on it.

Fortunately paint isn't scarce. It takes very little time to apply it and the cost is nothing compared to the loss of several days use of an important machine at a critical period in planting, cultivating or harvesting time.

Do You Know—



STANDARD PRACTICE

The use of Timken Tapered Roller Bearings at points of hard service in the great majority of leading tractors—and in power-driven farm machinery—is proof of leadership established on the tapered principle of design, quality of manufacture, performance, and service to the automotive industry.

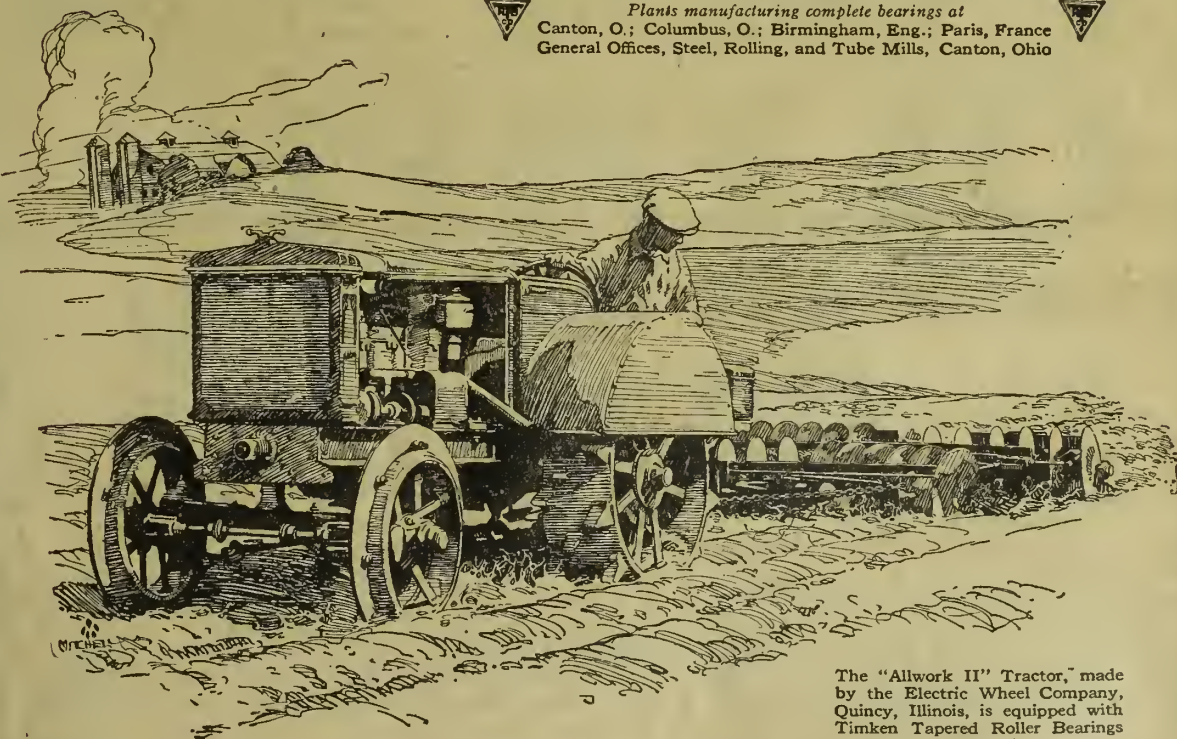
that the same fundamental principles of design apply to all tractors whether of wheel, four-wheel drive, or tracklayer type?

that Timken Tapered Roller Bearings play the same part in all types, carrying radial load, thrust load, and all possible combinations of the two, and that their tasks are fundamentally the same wherever they serve?

that Timken easy take-up, compactness, and ability to outlast the tractor, figure prominently in determining the choice of Timkens for the hard jobs?

THE TIMKEN ROLLER BEARING COMPANY CANTON, OHIO

Plants manufacturing complete bearings at
Canton, O.; Columbus, O.; Birmingham, Eng.; Paris, France
General Offices, Steel, Rolling, and Tube Mills, Canton, Ohio



The "Allwork II" Tractor, made by the Electric Wheel Company, Quincy, Illinois, is equipped with Timken Tapered Roller Bearings at points of hard service.

TIMKEN

TAPERED ROLLER BEARINGS

Fighting Poultry Parasites

By Jean A. Koethen

If all the parasites which prey upon the life and health and comfort of hens and chicks could be suddenly eliminated, put out of the way for good and all, the upward path of poultry husbandry would be wonderfully smoothed. Think of all the chicks that are stunted or killed every year by the depredations of lice and mites! Think of the thousands that drop by the way, victims of intestinal worms and gape worms! And call to mind the hens that might be productive and profitable but for the attacks of fleas and ticks, as well as of lice and mites. Their name is legion, and yet every one of these losses might be prevented, and a considerable sum added to the profits of poultry work, by careful attention to sanitation and the use of some simple remedy as soon as the presence of the pests is perceived. I have not space here to go into a careful discussion of the subject of poultry parasites, but can only outline briefly some of the simplest and most generally employed methods of eradication.

Prevention First

That old proverb about an ounce of prevention was never more applicable than here. If, by absolute cleanliness and most careful attention to sanitation you can keep all parasites off the premises you will be saved a great deal of trouble. In the case of lice I doubt if this is possible. Lice are to some extent on all hens

that are not frequently dusted. The Mediterranean breeds, perhaps because they are so active and closely feathered, are not infested as heavy as the Leghorns are, and I know some poultrymen claim that their Leghorns are entirely free, but in general we may assume that where there are hens there are lice, if they are not controlled. We may also admit frankly that a few lice on a full grown hen do no great harm. It is their multiplication until they become a constant annoyance that does harm, and this condition is sure to occur sooner or later if preventive measures are not employed.

For the adult hen mites are a far more serious pest than lice, sucking her blood and disturbing her rest until both health and production are menaced. Mites can be and ought to be kept out of every hen house in the land, and cleanliness and disinfection will do it.

To the growing chick mite invasion, unless promptly controlled, means death. Last spring a neighbor, who raises show birds of fine quality, came to me with an ailing chick a couple of months old. "All my chickens are sick with some mysterious disease," she declared. "They stand around with their wings down, old and young alike, don't care to eat, and several have died. Other people are complaining of the same disease, but nobody knows what it is." I took the chick and raised its wing. There they were, right in broad daylight, crawling over

its body and sucking its blood. "Mites!" she gasped. I told her not to let the birds sleep another night in those coops till they had been hosed out and painted with kerosene and carbolic acid. They could be put temporarily in boxes or the cow shed till the coops were clean. She did this, cleaned up thoroughly, and that was the end of the mysterious disease—till the next time. With mites there is always a next time. If you do not keep after them they will keep after you.

Happily ticks and fleas do not go everywhere, though I am inclined to believe ticks will go anywhere where the premises are kept dirty enough. I have seen them only in old houses that had been neglected for years. Fleas seem to be indigenous to very sandy soil and that only in certain localities where they have gotten a good start. The cleanliness which will keep houses and fowls free from mites and lice ought to keep them free also from ticks and fleas.

Clean ground seems to be the only preventive of intestinal worms. When birds are infested with these parasites the ground becomes contaminated, and while it is possible, by the use of tobacco and other remedies, to rid the birds of them, every succeeding flock will be infested and require treatment. Treating the birds until the worms have disappeared and then moving them to uncontaminated soil while the contaminated soil is purified by growing crops for at least a year is the only sure way to get rid of worms for good and all.

Lice

Every hen, whether she is known to have lice or not, should have an opportunity to dust. In every yard there

should be some shady corner where the ground is kept moist and soft for Biddy's dusting. When hens are kept in no-yard houses a well sanded floor is usually sufficient for dusting. When the sand is covered with litter some box or corner must be arranged where the hens can wallow. The addition of sulphur to the natural dust bath is recommended by some. Many hens will keep themselves clean by the use of the dust bath alone. Others must be dusted once or twice a year, oftener if it seems necessary, with one of the many good louse powders on the market or with some home made preparation, such as the Lowry powder, which consists of crude carbolic acid mixed into a dry powder with plaster of paris and run through a sieve to break up the lumps. Sulphur and slaked lime are also recommended for dusting, and sodium fluoride is said to keep the lice away for a long period. For baby chicks that are cared for by a hen use buhach powder or grease with pure lard. Baby turkeys should be dusted weekly with buhach powder.

Mites

Thorough cleaning of walls, roosts and nests, first with a broom, then with a hose, and painting or spraying with an insecticide is the only way of getting rid of mites. Kerosene and crude carbolic acid in the proportion of one part acid to four or five of kerosene is one of the most satisfactory insecticides. Carbolineum and other coal tar preparations are used and recommended by many poultrymen. The cresol preparations are not so easily obtainable, but are highly recommended. The main thing is that the work be thorough. Any of these preparations will kill the mites they touch, but they do not kill those that hide in cracks or crawl through to the outside of the house. To do a thorough job on a badly infested house it is sometimes necessary to paint or spray both outside and inside. Then remember, one application is not sufficient, for there may be eggs left after the mites are killed. To get the new crop of mites, repeat the dose again in ten days, and then in ten days more add another to catch the stragglers.

Roosts must be moved and the insecticide applied to their ends and the cleats on which they rest. The up-to-date house has its roost swung from the roof by wires so that mites cannot reach them. Nest boxes should be emptied of litter and painted with the insecticide. It must always be remembered that the natural breeding place of mites is under the droppings on the floor or droppings board and that the oftener the droppings are removed the less danger is there of mite invasion.

Ticks and Fleas

For ticks and fleas on the bodies of the birds I know of nothing better than liberal and repeated applications of carbolated vaseline. When they are in the houses nothing but the most thorough cleaning and disinfecting will answer. Fleas are mostly in the litter or the sand, and all litter must be removed to get rid of them.

Worms

For the gape worm no sure remedy has been found but removal by means of a twisted horse hair or a feather dipped in kerosene or turpentine. Removal to clean soil is absolutely necessary.

For intestinal worms Dr. Beach's tobacco treatment seems as satisfactory as any. To 50 pounds of dry mash add one pound of tobacco dust and keep this before the birds for two or three weeks, then discontinue the treatment for two or three weeks.

EGG LAYING CONTEST

Storrs, Connecticut, August 20, 1920. Report for the week ending August 27, 1920:

The forty-third week of the laying contest at Storrs was a record breaker. In nearly all flocks egg yields have steadily declined since the high point last May and will, of course, continue to do so until the end of the hens' laying year in October. In spite of this fact the hens in the contest laid 77 eggs more than in the previous week. They exceeded the five year average for this period by a margin of 260 eggs and they laid 17 eggs more than the best previous record for the forty-third week. The total yield for all pens was 3,626 eggs, a yield of nearly 52 per cent as compared with

THE GREAT OLYMPIC FEED MILL PORTLAND ORE

OLYMPIC SCRATCH FEED

Gives Your Hens an Even Break

YOU don't expect blood from a turnip. Likewise, unless you have supplied your fowls with plenty of backbone and strength, you cannot expect continual egg production. The best egg mash or tonic only assists the hen—it takes a strong, robust constitution to withstand steady laying. Such constitutions are the result of feeding **OLYMPIC Scratch Feed**.

This strength-building feed contains the following properly balanced ingredients: Wheat, Cracked Corn, Milo Maize, Hulled Barley, Hulled Oats, Sunflower Seed and Buckwheat. Made from carefully selected whole grains, cleaned and well mixed, you'll find no better poultry feed than **OLYMPIC Scratch Feed**. Every handful is uniform and free from dust.

OLYMPIC Scratch Feed comes in three classes or grain sizes. Baby Chick Scratch, with tiny but uniformly ground grains, suited for the first three week's feeding. Growing Chick Scratch, a little coarser grains, that appeal to the growing youngsters until about eight weeks old, is the next step. From Growing Chick Scratch they graduate to the full sized grains of **OLYMPIC Scratch Feed**.

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PORTLAND, OREGON

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Also ask your dealer about

- OLYMPIC Hog Food
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the best previous record of 3,609 made two years ago.

The weekly yield for the different breeds was as follows: Plymouth Rocks, 48.6 per cent; Wyandottes, 45.2 per cent; Rhode Island Reds, 49.1 per cent; White Leghorns, 56.5 per cent; miscellaneous, 41.8 per cent.

A pen of White Leghorns owned by Hollywood Farm, Hollywood, Washington, won first honors for the week by laying 59 eggs.

The three leading pens in each of the principal varieties are as follows:

Plymouth Rocks

Jules F. Francais, (Barred), 1,886; Oneck Farm, (Barred), 1,827; Merritt M. Clark, (Barred), 1,669.

White Wyandottes

Harry D. Emmons, 1,544; Mrs. R. W. Stevens, 1,541; Merrythought Farm, 1,506.

Rhode Island Reds

Pinecrest Orchards, 1,816; Deer Brook Poultry Farm, 1,638; Jacob E. Jansen, 1,589.

White Leghorns

E. A. Ballard, 1,776; Hollywood Farm, 1,703; George Phillips, 1,673.

Miscellaneous

A. E. Hampton (Black Leghorns), 1,719; A. L. Anderson (R. I. Whites), 1,619; H. P. Cloyes (Buff Wyandottes), 1,514.

Poultry Queries

Conducted by J. A. Koethen

Foreign Substance in Throat

A fine White Leghorn commenced coughing two months ago. She makes a weak, choking noise almost constantly, especially when eating, has great difficulty in breathing, breathes rapidly and quite audibly but does not look sick or droopy, eats well and her

comb is full and red. She has a depression just above the breast bone like a crease, so deep that the feathers project from it as if shut between the leaves of a book. What is your diagnosis of this case?—G. W. H., Hemet.

It looks to me as if the hen had something stuck in her throat or else had sustained some injury that caused a swelling there. No doubt you have looked in her throat and know that no foreign substance is visible. So far as I can judge from your description of the crease above her breast bone, it is such as would be caused by a swelling on one side of it. You might try painting this swollen place with tincture of iodine. As long as she does not appear ill she is doing no harm in the flock, but it is a question whether she ought not to be killed, if you are unable to relieve her, for her own sake.

Hens Drop Dead

In the past you have been very helpful to me, and I again come for advice. A great many of my hens are dying and I cannot ascertain the cause. They seem perfectly well, but just drop dead. One hen I noticed came running toward the house, wobbled, and in a few minutes was dead. Two others lay down and died. They have had no green feed lately, just wheat and water. I notice some of the hens and young stock cough and shake their heads.—Subscriber, Casa Grande, Arizona.

Lack of green feed is probably at the bottom of these sudden deaths. If the hens have only wheat and water their digestion is certain to suffer, and upset digestion manifests itself in a variety of ways. Alfalfa meal and dried beet pulp soaked and mixed in a moist mash are some help when greens cannot be obtained, as are tomato skins, melon rinds and other vegetable food, but if you are not in a position to provide green feed a great part of the time it would be better to get rid of the hens. Professor Dougherty says green feed is the foundation of successful poultry culture. While you are waiting for your green feed to grow, try providing a mash with some alfalfa meal in it, or perhaps you can give the hens dry alfalfa hay. Then once a day cook up whatever vegetable and fruit leavings you have and mix that with bran into a moist mash. This will not go far with a large flock but helps a good deal with the family flock. These things I am suggesting are not green feed, as we use the word, but they do help when green feed is scarce.

Gasping Pullets

My young pullets, and sometimes the hens, are suddenly taken with severe gasping. They reach out their necks and the head turns rather purple. There is high fever, which lasts till they die. I have lost three pullets recently and four years ago had a severe run of the same thing. My hens have plenty of greens, good grain and a prepared mash. Have been giving a roup remedy, but it makes them worse rather than better. Can you help me?—Subscriber, Los Gatos.

The symptoms are those of aspergillosis, a disease caused by the growth of mold spores in the lungs and deep tissues. The question is, where did the mold come from. I am told that the grain is good. Is it possible that the scratching litter has been wet and become moldy or that one of the ingredients in the mash was moldy before it was ground? Wherever the mold is, it must be gotten rid of before the disease can be cured. I hardly think spoiled fish scrap, which my correspondent thinks may be responsible, would produce such symptoms, nevertheless I would change the mash. Removal of the cause is the only cure for aspergillosis, but a dose of Epsom salts all around, either in the drinking water or in moist mash, will do no harm. Allow about a half teaspoon of the salts for each bird and make sure that it is thoroughly dissolved and mixed in the water or the mash. Clean up the premises well, removing dirty litter, and whatever mash you use, make it about half bran for a while.



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This powerful brake gives a positive, effective grip, made still more effective by its acting through the high speed propeller shaft instead of on the wheels—truly an emergency brake.



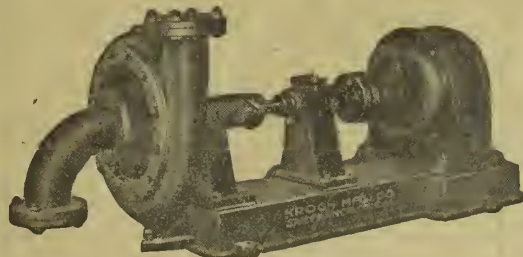
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Krogh Pumps Are Absolutely Water Balanced
No End Thrust Possible

No Set Collars Used

The No Trouble Pump



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Fitted With Ring
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We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.



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New and second hand pipe and casings
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Mail orders given prompt attention
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THE PRIDE OF PETALUMA TRIPLE CONE VENTILATING BROODER STOVE HAS a DIRECT OIL BURNER, NO WICK, BURNS COAL OIL or DISTILLATE with PERFECT SATISFACTION. AUTOMATIC REGULATOR Controls the Flow of Oil. This Stove is so constructed that the heat is evenly distributed over the FLOOR where the BABY CHICKS MUST have it.

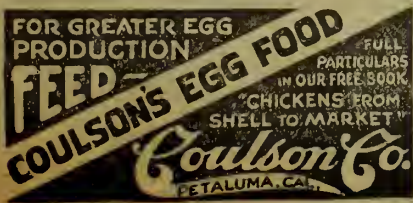
THESE STOVES are built in THREE sizes, 2-B, 4-B and 12-A.

THE KRESKY STOVES are built up to a STANDARD and NOT down to a PRICE.

Capacity, 500 to 1500.

Write for Catalogue No. 70 — It's FREE.

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The Necessity of Music Is Met By a Good Player Piano

Music is as essential to the welfare of the mind as is exercise to the body. It rests and relaxes. It refreshes and exhilarates. But in too many homes the piano stands mute, silent—a piece of beautiful furniture, but nothing more.

But YOU can play the piano. You can summon its voice, govern its moods, select its melodies. Of course, we are speaking of the Player Piano, which anybody can play.

Choose this piano carefully. It will be with you for many years, responsive to your moods, a witness to your taste.

We have player Pianos to suit almost any purse. We carry the Aeolian Co. line (the famous Pianola and the marvelous Duo-Art). With the convenient payment terms, which we gladly arrange, it is today an easy matter to own a good Player Piano.

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Household Department

COMP'NY'S COMIN' TO TEA

Norah's makin' a layer cake—
A spicy kind; I wish
She'd hurry an' put it in to bake,
So I can scrape the dish!
She's as cross as sticks, an' the kitchen's
just
As hot as can be.
It smells so good that I'm like to bust—
Comp'ny's comin' to tea.

We'll have the shiniest everything,
An' I'll drink coffee—p'raps;
An' more'n a dozen times ma'll ring
To carry off the scraps.
We're going to have ice cream, I know—
I hope it's lemon, gee!
An' soda biscuits—I saw the dough—
Comp'ny's comin' to tea.

I mustn't talk at the table—much;
I mustn't kick my feet;
I mustn't smack my lips, or touch
The stuff that I won't eat.
An' I must take, when plates are passed,
Whatever's nearest me
(But not, of course, if it's the last)
Comp'ny's comin' to tea.

I'll wear my dandiest blouse an' tie,
An' if I'll stay about
An' not get dirty, ma says I
May clean the freezer out!
An' so I darsn't tear an' race,
Or climb a single tree,
Or sweat, or soil my hands or face—
Comp'ny's comin' to tea.—Edwin L. Sabin.

THE RUBY KEY

(Continued from last week.)

One day Nanette, with her brushes and mops and pails, reached the last room on the top floor of the palace. She heard someone within and knocked timidly. The door opened and there stood a little old, old woman. Her face was seamed and criss-crossed with wrinkles and her hair was white as snow, but she looked up with a gentle smile upon her near sighted face.

"How do you do?" quavered the low, faded voice. "Have you not mistaken the door? No one ever visits me."

Nanette courtesied and said breezily:

"Oh, I am only a little servant to clean your room. Do you mind?"

The old lady's face brightened wonderfully.

"Come in, come in!" she cried. "I thought they had forgotten me. It is years since anyone but myself cleaned this room and I am old and feeble now."

She held open the door and Nanette sighed in pity, for the two high windows were covered with cobwebs, the floor was gray with dust and the furniture scattered about untidily.

The old lady sank into a chair and watched Nanette make a place for her pails and brushes. She smiled as the little maid hurried to the windows and began brushing the cobwebs with quick, sure strokes.

"I can see that you are a worker, even as I myself was once," she said, thoughtfully. "But tell me, why is this left to a child like you? What occupies the house men, the chamber girls and all the maids? In my time we older servants did the work and children ran errands."

Nanette laughed and tugged the harder at a huge highboy.

"I am sure the men and the maids are always busy. They dust the pictures and feed the birds, they wash the piano keys and shoo the peacocks from the steps of the palace. Further than that I do not know."

The old lady's sniff was quite disdainful.

"There is a little page who brings me food and drink and I wondered whether his tales were true. When King Maladin was alive! Ah! things were different then. It was I, Grineld, who had charge of the maids and the palace shone like a jewel from top to bottom. The King himself gave me this room for my own when I was too old for service, and it was often to me that the court fairy, Vanetra, came with her troubles."

Nanette listened gladly to the little woman's voice; it was seldom she talked with anyone. However, the dust arose in clouds as she began to move rugs, and pushing an easy chair into the hall, she led Grineld to it, saying softly:

"You will be comfortable here until everything is arranged."

Grineld smiled her thanks and nodded sleepily.

Nanette worked long and hard but soon the windows were shining brightly and the clean smell of hot soapsuds filled the room. The little maid was

smiling as she ran out upon the balcony to shake her dust cloth. Far below, the gardener's son was picking cherries. Perhaps he was watching for a little figure in a black apron; at any rate, his cap was off in a second and he began throwing the ruddy fruit toward Nanette. She stretched out her hands playfully and lad and maiden laughed together as the cherries fell at last into the fountain upon the upper terrace.

"I belong to the happiest girl in the world!" cried Nanette's heart as she went back to her work.

Grineld was asleep when the little maid stole out into the hall, but she was awakened quickly as Nanette pushed the chair across the threshold. There could have been no greater reward than her low cries of delight.

The room was sweet with summer breezes. Rugs lay smoothly upon a polished floor. The velvet of the great couch was brushed until it caught the sun, and the shaken pillows looked soft and inviting. The little old lady sank down upon them, her dim eyes filled with tears.

"I shall come often," promised Nanette as she put the last pail outside the door. "You will never be neglected again. Oh! I beg your pardon for I was about to carry away in my pocket something of yours. As I was cleaning the moldings under the window I found in a crevice this little red key. Is it not beautiful?"

The old lady took it into her hands and peered blindly.

"What is it?" she asked. "Only a little key of red glass? Yes, it is pretty; pretty enough to hang about your neck on a ribbon. But it is not mine. Keep it, child."

Nanette took the key eagerly. It was the first ornament she had ever had.

"Yes, I shall keep it if you do not mind," she said. "It is as small as a fairy key, and as red as blood."

"I am very tired," thought Nanette as she walked down the hall with her broom and brushes. "Too tired to see anyone, too tired to listen to the maids tell of their love affairs, too tired for anything."

Nevertheless, she stopped for a moment beside the group of excited servants in the lower hall. The butler was speaking in a loud whisper:

"A hundred cooks are busy in the kitchens, preparing the feast. There is a stuffed and roasted peacock ready to serve upon the great gold platter!"

"The Princess has had dressmakers for a month!" chimed in a little page.

"What is it all about?" asked Nanette timidly.

One of the maids turned to her with a frown.

"If you did not keep your nose buried in a corner you would know," she said scornfully. "Tomorrow brings the sixteenth birthday of the Princess, and His Royal Highness, the Prince of Panillac, arrives at noon."

Nanette passed on, her weariness forgotten. She was smiling gently.

"So the little princess was about to be married. May she have all the happiness in the world. As for me, it is enough that I be allowed to work in her palace."

The next morning everyone in the palace was stirring very early. The Princess had scarcely slept all night and she arose with the sun. She was bathed in perfume and dressed in garments of the smoothest satin. Just before noon she stood before the long mirror in her boudoir—in white from tip to toe, as befitted a princess. Her white train swept the velvet carpet. Only her hair was golden; that and the crown upon her head.

Then silvery toned trumpets began to blow, and peeping from her casement window Doris saw a long procession winding up the terraces toward the palace. She threw the ropes of pearls about her neck and maids clasped bracelets upon her lovely arms.

The Princess was no sooner seated alone in the throne room than the great folding doors were flung open and the Prince of Panillac stood before her. Tall and straight as a pine tree, eager eyes searching her own, Doris saw her lover. He seated himself in the carved chair beside her.

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"Princess, you have not forgotten? You love me still!"

Doris bowed her head. Three times she struck with her scepter upon the bell at her left hand and from a darkly curtained doorway the Prime Minister entered. He wore the somber robes of state and his long beard flowed whitely over the velvet. Reverently he handed a golden casket to the Princess and withdrew.

Doris lifted the jeweled lid. In the first drawer flashed chains and brooches and bracelets of diamonds. In the second lay priceless ornaments of turquoise, but in the third was only a small white metal box. The Princess held it in the palm of her hand and her lover bent forward eagerly. Together they raised the cover.

The two stared into each other's eyes. Doris was pale as death and the Prince clasped her hands tightly, for in the box lay not a key but a folded sheet of paper.

Trembling they read:
"To the Princess Doris:

"Your father once did me a great wrong but I loved him. Because he did the wrong I am taking this ruby key which he has put so carefully away. There is no way into your inmost heart without it. You may think you love but you will forget and be as false as was the king. If the key is ever found it will be before your sixteenth birthday, through the diligence of someone to whom you have brought great happiness.—Vanetra."

The princess bowed her head and tears flowed down upon the satin of her gown.

"Doris," whispered the prince, "lift your head. Perhaps the key has been found."

"Alas!" she cried, "it has not, it cannot have been found, miserable being that I am. Never in all my life have I brought happiness to anyone. What use to wed without you have the key to my heart. Would I not always be as cold and worthless as you find me now?"

The prince comforted her but his face was very sad.

"Without the key to your heart I know you would not always love me. But stay, it cannot be that there is not someone to whom you have been kind. Perhaps the key was found long ago. We shall have it proclaimed throughout the city."

He sprang from his chair and summoned all the pages of the palace. They came like a flock of eager birds in green and gold plumage. The princess watched listlessly. She was sure the ruby key was lost.

The pages began to stream down

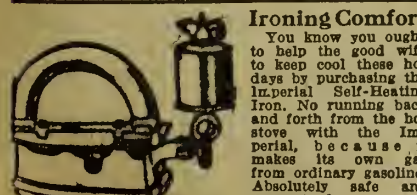
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the corridors of the palace and through the streets of the city, proclaiming loudly:

"Who has found a ruby key? Whoever has a ruby key will be rewarded."

Now little Nanette had scrubbed patiently until nearly noon. Then she took off her black apron and went to an obscure balcony to view the procession. Long she stood there, admiring the brilliant colors, the wonderful music and the beauty of the prince as he went marching up the steps toward his love. Nanette sighed as he disappeared.

"Ah, the princess has her sweet-heart, but will mine ever come to me?"

A red, red rose fell at her feet. Nanette picked it up, her heart beating wildly. She felt gentle fingers over her eyes and looking saw the gardener's son.

"Little one!" he cried. "At last I have met you. Why did you never come into the gardens? Many a time have I plucked nosegays, but always you have disappeared like a shadow. This time you shall not leave so soon."

He looked into her dark eyes and reflected that she was like the tiger lilies of the terrace, slim and graceful with bronzy skin and jet black hair.

Nanette gazed to the right and to the left, but always Orin's earnest face was before her.

"Did you really watch for me?" she whispered.

"Yes! Watched and waited until I dreamed of you and loved you."

The little maid bowed her head upon his breast.

"Can it be that you love me?"

"You know. But what is this?"

A page with his trumpet stood in the nearest door, shouting his proclamation into the corridors.

Nanette cried in amazement:

"A ruby key! I have one upon the ribbon at my neck. It is made of red glass I think, but it is beautiful, is it not?"

"It is indeed," answered Orin, examining the key. "Run with it to the princess. Perhaps she will give you a holiday and we can be together. I will wait."

Nanette ran down the hall and straight to the throne room. She entered quickly and held out the ruby key to the princess.

Doris arose. Her face was white, her slim hands clasped to her breast.

"The key to my heart!" she whispered.

The prince took the ruby tenderly. Doris sank back upon the throne, and tears of relief filled her eyes while her face took on a lovely gentleness that transfigured it.

"My Prince, it is indeed the key to my heart, and this maiden is one to whom I gave the little dress she has on. It was not much of a kindness, but the guardian of our love has nurtured it. Keep the key, my king, and do not lose it ever."

The prince clasped his sweetheart in his arms while little Nanette ran with flying feet back to her lover.

The princess and the prince were married with great pomp, but they were not a bit happier than Nanette and Orin, who were wedded by the old priest in the little stone church just outside the palace gates.

When they returned, the royal princess and her husband led the way to a distant and beautiful corner of the grounds where was built the dearest little home in all the world. It had six rooms, each more delightful than the other, and Nanette's eyes sparkled.

"How I shall love keeping it tidy!"

"And you must come often to the palace," begged the princess. "We shall be looking for you."

So it was that not many years afterward the golden haired sons of Doris and the dark eyed daughters of Nanette were romping about the palace grounds.

The immense building shone from top to bottom as in the days of old, for a great staff of willing servants had come from the Prince's country.

The children were very happy. There were little saucer pies and wonderful doughnuts always ready in Nanette's spotless kitchen. At the palace were birds to tame and ponies to ride, but it was seldom that they did not all troop into Grineld's cozy room for a goodnight story.

Kind Old Gentleman to Newsie:
"Don't all these papers make you tired?"

Newsie: "Naw. I don't read 'em."

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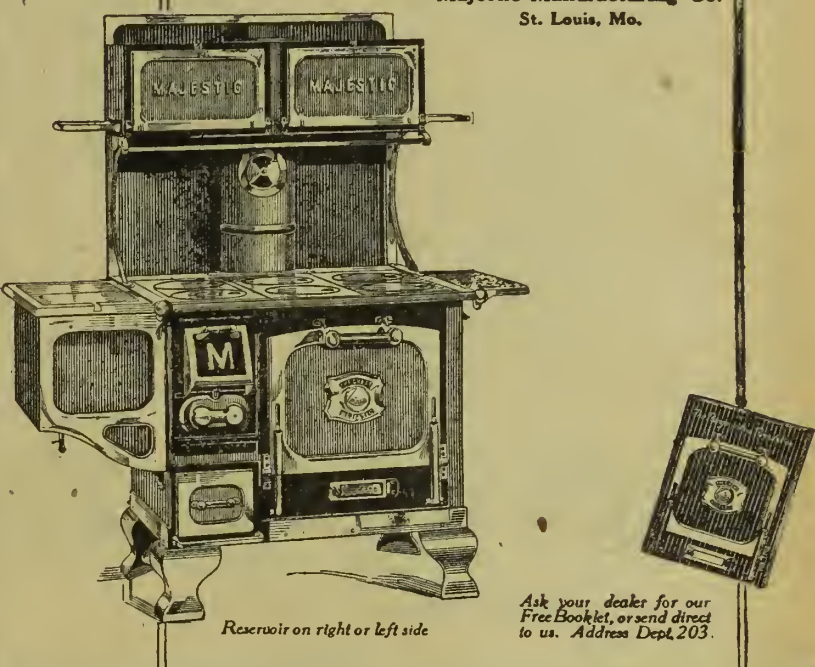
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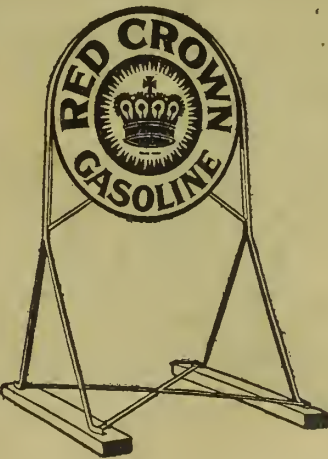
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HOUSEHOLD QUERIES

Weevil in Foodstuffs

Will you please tell me a remedy for weevil in flour, macaroni, rice, etc.?—Subscriber, Owensmouth.

First, as we all have found, it is a matter of keeping everlastingly at it, that is, constantly looking over and caring for these foodstuffs, especially through the warm days. Even the smallest packages sometimes become infested before they can be used. If the foods are clean of infestation and stored in cool dry rooms which are themselves thoroughly clean there will be little trouble, but if some of the pests do find their way in, sifting through a fine sieve in case of flour and meal will take out all adults and larvae. The eggs, if any, will not be removed and will later hatch to make more trouble. It will be necessary to pick over rice or macaroni, spreading out small quantities over clean white paper. After this sifting or picking over process the foodstuffs may be heated in moderate oven, with door open, to 125 to 150 degrees Fahrenheit. This will kill eggs. (Corn meal, however, is easily overheated and is liable to turn rancid after this process. It is best to use as soon as possible.) Place these heated foodstuffs immediately in sterilized jars with tight covers. Where a barrel of flour or other large quantity of food is infested or where a whole room is infested use carbon bisulphide. A cupful to a barrel is sufficient. Place liquid in shallow pan on top of flour. It is very volatile and forms a heavy gas which sinks through the container, penetrating through the particles and killing all insect life. It is also very inflammable. Do not bring a light near it. Place tight cover on barrel and leave 24 hours. When cover is removed to air out and disperse fumes of gas, place clean cloth over top to prevent reinfestation. The same treatment is given to storerooms, using one pound to 1,000 cubic feet of space in the room. The odor soon passes from foods so treated and they are in no way spoiled for food.

Chow-Chow—Green Tomato Pickles

Will you please publish in your paper recipe for green tomato relish and chow-chow.—Subscriber, Artois.

Chow-chow—Wash and cut into large pieces sufficient tomatoes to measure three pints. Place in a china bowl and add 1 pint small onions and cover with 1 cup salt. Let stand ½ day. Then drain and place in a preserving kettle and add 1 pint cauliflower, parboiled, 1 dozen green peppers cut into pieces, ½ dozen red peppers cut into pieces, 1 quart string beans cut in inch pieces and parboiled, 1 quart strong cider vinegar, 3 cups water. Bring to a boil and cook ½ hour. Place in a bowl ½ cup flour, ¼ cup mustard, 1 tablespoon paprika, 1 teaspoon turmeric, 1 ounce mustard seed, 1 tablespoon celery seed, 1 cup vinegar. Mix thoroughly before adding to the chow and then stir to blend thoroughly and cook for 15 minutes. Fill into glass jars and seal while hot.

Green Tomato Pickles—Remove a thin slice from the blossom end and the hard portion around the stems of 1 peck of green tomatoes. Slice, sprinkle with 1 cup salt and set aside over night. In the morning, drain, then boil 15 minutes in 2 quarts water and 1 quart vinegar. Drain again. Cook together ten minutes 1 gallon cider vinegar, 2 pounds sugar, 3 red pepper pods cut into strips, 1 tablespoon white mustard seed, whole, and 1 cup cinnamon bark, ginger root, mace, and whole cloves mixed in the proportions desired. The spices, with the exception of the red pepper pods, should be tied in a muslin bag. Add the tomato and simmer gently about one hour, remove the spices, and put the pickles into sterilized glass jars. Let the syrup completely cover the slices of tomato.

ONE WAY TO USE A SHOVEL

The superintendent of a large factory was short of help. One morning as a last resort he stopped an old tramp who was passing by.

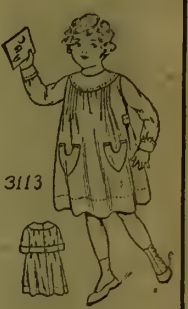
"Are you looking for a job?" he asked the tramp.

"What kind of a job?" the tramp asked.

"Can you do anything with a shovel?"

"Yes," answered the tramp, rubbing his eyes. "I can fry ham on it."

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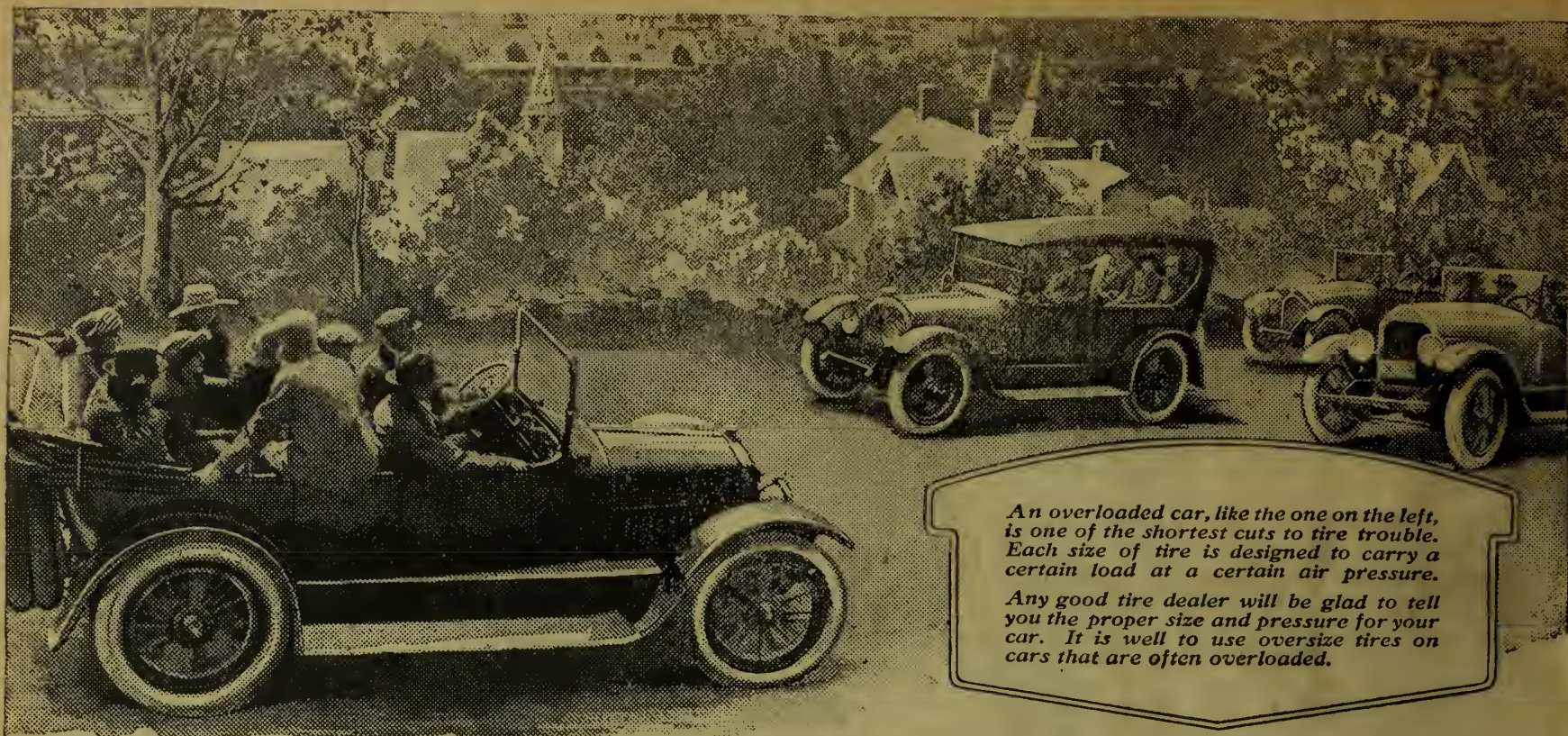
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Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

September 25, 1920

No. 13

The Zante Currant in California

By Fred K. Howard

PRIOR to the outbreak of the great war the United States imported upwards of 18,000 tons of Grecian or Zante currants. These currants have filled a demand which apparently can never be filled by the common varieties grown in California. The Thompson Seedless is eliminated in this field because it lacks the distinctive flavor which is so desirable in a good grade of currant.

In these days of comparatively high prices for foodstuffs and particularly California dried fruits, it would seem by many to be idle talk to speak of increasing the dried fruit output of the San Joaquin Valley to the extent

alone. Its possibilities are apparently unlimited, or limited only by the amount of available land suited to its culture, and it will not compete on the market with the other raisin varieties, except perhaps the Thompson to a limited extent because of its distinctive flavor and quality.

Name Is Confusing

The name "currant" which is given this grape is very confusing and possibly has much to do with the slowness with which the American housewife takes to it as a culinary possibility. It is too often confused with the English or bush currant commonly grown in the East and used principally for jams and jellies. There seems to be no particular reason for the name "currant," and it appears to have been the result of a gradual evolution of "Corinth," a seaport town from which most of the early cargoes of this fruit were forwarded to western Europe. It is safe to say that a great many people who are considered well informed are not aware that the small black dried currants so commonly used in mince-meat making are not the dried product of the eastern currant bush, but are in reality the dried product of a grape vine.

Currant Growing a Success

Beginning with the introduction of this grape into California in 1901 the United States department of agriculture began experiments to determine why this variety did not set satisfactory crops of fruit as did the red and white varieties of the currant grape which were introduced into this state in 1861. It was finally demonstrated that to make the blooms set well and to secure a satisfactory crop it was necessary to girdle or "ring" the vines during the blooming period. This girdling consists of making two parallel incisions through the bark, about a quarter of an inch apart, around the trunk or canes of the vine, and taking out the bark between the two parallel cuts. This work must be thoroughly and cleanly done if the operation is to be at all successful.

History of Introduction

A brief history of the introduction of the currant grape is given in the Journal of Heredity, by Geo. C. Hus-

mann of the United States department of agriculture. He says: "Currant grape varieties were introduced into California as early as 1861, and these were followed by later introductions. Among all these, however, there appear to have been no valuable dark colored varieties, but some fairly productive red and white strains producing fruit of inferior quality. The 'Panariti' was introduced by the United States department of agriculture through David Fairchild, agricultural explorer of the department, a consignment of cuttings reaching Washington, D. C., May 9, 1901. Concerning this Mr. Fairchild stated at that time: 'The variety of grapes pro-

ducing the currant, or corinth, of commerce. These cuttings were purchased in the village of Panariti, which lies along the mountains back of Xyloncas tron. This village is noted for producing some of the finest corinths in Greece.'"

It appears from the foregoing that the variety introduced by the department of agriculture, which has been given the name of Panariti, according to the custom in Greece where varieties are not distinguished but are known simply by the name of the region in which they are produced, is one of the finest grown in Greece. If this is true there would seem to be no logical reason why California growers can not compete successfully with the foreign product.

(Continued on Page 400.)



Typical Bunch of "Panariti," the Zante Currant of Commerce.

of approximately \$6,000,000. Yet this is what would be done if the sales and advertising methods which have been employed so successfully in the marketing of other fruits by the big producers' associations were to be applied to the Zante currant. In fact it is impossible to even estimate how much the consumption of this dried grape might be increased in the United States for cooking purposes



As the Zante Vines Grow

Zante currant vine on ranch of W. T. Gibson at Fowler. Vine is three years old this year, matured a crop of 300 bunches. A young Zante currant vine showing method of training and pruning.

Half the Wearing Parts

In the *ordinary* battery there are *two* wearing parts—the lead plates, and the insulation between the plates. These are the parts of the battery exposed to the chemical action of the solution—the parts most likely to give out.

The Still Better Willard has only *one* wearing part—for Threaded Rubber Insulation is *not* affected by the solution—it will outlast the battery every time.

Threaded Rubber Insulation has all the high insulating qualities of ordinary rubber, yet allows easy flow of current from plate to plate.

With this acid-proof insulation there are no rotted separators, no expensive replacements. No internal short circuits due

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Finally, the Still Better Willard is shipped and stocked "bone-dry"—not a drop of moisture in it, no possibility of deterioration. It starts its service in your car as fresh and "peppy" as if just built.

Of the 191 passenger cars and trucks using Willard Batteries as standard equipment 152 have adopted the Still Better Willard with Threaded Rubber Insulation.

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This trademark is branded in red on one side of the Still Better Willard Battery—the only battery with Threaded Rubber Insulation.

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Menominee	Rainier	Traylor
Mercer	Renault	Ultimate
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Meteor (Phila.)	Republic	Vulcan
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*McLaughlin	R & V Knight	Winther
	Rowe	Winton
Napoleon	Sandow	Wolverine
Nash	Sayers	
Nelson	Seagrave	*For Export

California Cultivator

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One Dollar Yearly

Annual of Lemon Men's Club

By C. B. Messenger

THE password was "Lemons" and some of the slogans were: "Follow the Leader"; "Listen to the Whistle"; "Ask questions of the speaker"; "Drink lemonade"; "Eat a plenty."

I did not reach the lemonade jar, but did eat a plenty of an exceptionally fine and well served meal. It was at the annual field day of the Lemon Growers of California or, usually called, The Lemon Men's Club. Notwithstanding the password was "Lemons"; also notwithstanding the fact that lemons have been engaged in one long funeral procession for some months, there was nothing in this meeting held at Santa Paula, and largely on Limoneira Ranch, which was at all doleful.

The Lemon Growers gathered at ten o'clock in the morning at the packing house of the Santa Paula Citrus Fruit Association. They investigated the perfectly modern equipment and started on what the chief whistler, James Culbertson, termed the morning ramble. Mr. Culbertson led and with his whistle handled several hundred lemon growers in the long procession of nearly 100 machines, kept the crowd together and investigated methods as followed on the Rancho Sespe, Keith Spalding, owner, visiting orchards, quarters of the men, club room and dining rooms for the workmen, then a trip through the Mexican quarters, showing the new type house, 20 by 22, with three rooms. Other features of the ranch visited were the reservoir with a capacity of 1,600,000 gallons, 1,650 acres of orchard and bean land, 350 acres of lemons, orchard heater depot and a dozen and one other fea-

tures of an up to date lemon ranch.

Then the Teague-McKevitt ranch. Here C. C. Teague gave talk on the double cover crop system followed on the ranch. This crop consists of Whippoorwill peas planted the last of June. This summer growing cover crop was kept irrigated and growing lustily until August 18, when vetch seed was broadcasted. The furrows were run, covering much of the seed, which, at the time of the meeting on Saturday, September 11, was coming through good and plenty. This vetch will be permitted to grow until, perhaps, February. Meantime the summer cover crop will cease its growth and, if frost should come, perhaps be killed and largely disappear before plowing time. The decaying roots and much of the top will, however, make for more humus.

The Cultivator camera was brought into action, and on this page appears a view of these double cover crops as they are today.

Luncheon was next, and the ladies of the Methodist Church who served the meal in the Santa Paula Woman's Club House were given a standing vote of thanks and appreciation for a remarkably fine meal. The poetical nature of this event may be judged from the following, which was the program of the day:

"Some love the matin chimes that tell
The hour of prayer to sinner,
But better far the midday bell
That speaks the hour of dinner!"

There was little of the poetical in what followed, however, that is, in the

general talk. Like all other events of the day, the talks were straight from the shoulder. Manager Fleet of the Sespe Ranch presided and C. C. Teague extended welcome in behalf of Santa Paula. R. C. Allen of Bonita responded.

In extending welcome to the attendants—and a most cordial welcome it was—Mr. Teague discussed the problems now confronting the lemon grower and the need for closest study of both cultural and marketing problems, more, the need for considering national and even international conditions.

It costs the California lemon grower more to produce lemons, more to harvest, pack and ship than it costs the Italian grower. Congress is responsible for this advantage to the foreign grower. Mediterranean fruit may now be laid down in New York for a 25 cents per hundred freight rate. The Californian is taxed \$1.40 per hundred. However, the greatest handicap of all at this moment is the exchange rates. An American dollar will now buy \$4 worth of Italian money. Price of foreigners in New York at this time is around \$2.20, while Californians cost \$3 f. o. b. California. Add freight and the cost in market is \$4.40. These advantages, coupled with enormous production costs in California, will cause the ruin of the California industry.

The railroads must have more money to meet increased operating expense, but with continuance of pres-

ent conditions the lemon industry must end and ultimately the railroads cease to haul lemons. This should justify an emergency rate which would, in small part only, help to equalize conditions. It's a generally accepted principle of the railroads, that of "How much will the traffic bear?" This is the time for the railway management to put this principle into operation.

In responding to the welcome, R. C. Allen of Bonita reviewed the history of the club, covering the past 14 years. Especially did he commend the club for its initiative in the fight on brown rot of the lemon. This and other effective work has been done because the lemon industry has been blessed with Blanchards and Teagues.

The biggest lesson of the afternoon drive through the Blanchard estate and the Limoneira was in pruning. Santa Paula has definitely worked out lemon pruning, at least to this extent, that it is now known that the severe cutting which has been given to lemon trees has cost the lemon growers thousands of cars of fine fruit. The severe heading back, the cupping and other methods which call for large use of saw result in lessened bearing capacity.

"Long pruning," similar to the modern pruning of deciduous fruits, is coming to the lemon.

Limoneira is a wonder, a wonder of productiveness and of efficiency. It's an inspiration to the business farmer to see the business methods apparent in its packing house, its labor housing, its orcharding. Especially is the ex-

(Continued on Page 403.)



Where the Lesson on Lemons was Taught on a Ventura County Perfect Day. Photos by Cultivator Camera.

Upper left hand picture shows Santa Paula Woman's Clubhouse and a few of the perfectly satisfied 250 people who had partaken of the hospitality and learned of lemons. Upper center shows C. C. Teague, in foreground at extreme left, telling of the double cover crop idea which is more specifically shown in the illustration at upper right. Cow peas were planted in June and vetch in August. The crop will not be plowed under until March. These scenes were in the Teague-McKevitt orchard. Lower left hand scene is in the 27 year old lemon orchard of the Limoneira. Tree in foreground is one which was left as a "check" tree at time of pruning remainder of the orchard some two or three years ago. The second tree from it up the row, the one with the white tag, was given a pruning similar to that which is now being given to the first tree. This, two years ago last spring. It is now filled with dark green, healthy looking growth of branch and leaf and loaded with fruit. The method of pruning is made plain by the tree in the foreground. There was no severe cutting back of the large branches but a thinning and cutting out of useless wood, leaving smaller branches and twigs to extreme end of every large branch. The center picture in lower row shows an orchard somewhat less than a dozen years old consistently pruned since planting without severe cutting, and for the past few years trained by the "long pruning" system. Note down the row over the heads of the crowd the uniformity, thousands of trees as like as peas. Lower right shows a portion of the autos. The greater number of them are massed down near the crowd. Less than a score can be counted, yet there are 100 in the entire line.

Agricultural News Notes of the Pacific Coast

Northern California

Hop harvest is in full swing.

The wholesale price of sugar has dropped to \$17.

Many Alameda County people attended the state fair on Farm Bureau Day.

Sonoma County's fair showed entries of livestock from all over the state.

Newcastle has begun shipment of cling peaches. Pears and quinces are all out of the way.

Several new wells have been bored in Livermore Valley and a good flow of water is being secured.

The hop mills at Gerber are handling what is said to be the best yield ever secured in Northern California.

Rains in Siskiyou were a great help to livestock and ranges, but recent cold weather has damaged high meadows.

Proposal to discontinue operation of the Ocean Shore Railroad has been protested to the railroad commission by residents of San Mateo.

The railroad commission has asked all auto stage lines to post in their cars signs prepared by the forest service, warning against forest fires.

The chamber of commerce of Hayward, Alameda County, is urging an all year egg laying contest similar to the one being conducted at Santa Cruz.

Farm bureau meetings will be held in Placer County at Roseville, September 27, at 8 p. m.; Forest Hill, 29, 8 p. m.; directors' meeting, Mount Vernon, 25.

The Rice Growers Association is urging all growers to hold for the minimum price of \$8 per 62 pound barrel, set by the Southern Rice Growers Association, recently assembled at New Orleans.

Members of Eldorado County farm bureau have decided that it would be advisable to center on one breed of hogs, and an effort is now being made to have every hog raising member of the bureau keep Duroc-Jerseys.

Owing to great demand for fresh wine grapes they are being shipped East in refrigerator cars, ventilator cars, box cars, even cattle cars, according to statement by R. L. Nougaret of the viticultural service.

It is expected that approximately 300 prize winners of the boys agricultural clubs of California will attend the sixth annual agricultural club convention to be held October 14, 15 and 16 at the university farm at Davis.

A twice a day airplane patrol to frighten wild ducks is being maintained in many of the rice plantations in Colusa County. It is necessary to maintain the patrol on moonlight nights also, as this is a favorite feeding time.

The Colusa County Truckmen's and Draymen's Association has fixed hauling charge for rice at \$1.50 per ton for five miles or under and 30 cents per ton for each additional mile; higher rate over poor roads. This is somewhat less than last year's rate.

The board of directors of the Honcut-Yuba irrigation district has approved plans for the project and referred them to State Engineer McClure. The district to be served by the proposed system covers 30,000 acres in Yuba and Butte Counties.

Central California

Madera County fair will be held October 7 to 9.

Sweet potatoes are beginning to move at Turlock.

Turlock will ship 1,200 carloads of tomatoes this season.

Fresno County's 1920 tax rate will be lower than last year.

Tehachapi growers will ship out 30 carloads of apples and pears.

Turlock has 3,375 acres planted to sweet potatoes, mostly Jerseys.

Applications are now being made for lands in the Delhi colony in Merced County.

The prune crop for this year is estimated at from 180 to 200 million pounds.

The Weed Patch farm center of Kern County has purchased site for a community house.

Some cotton growers of Kern County fear loss of their crop because of water shortage.

The cotton crop in the Porterville district of Tulare County is reported to be yielding well.

The Peach Growers Association at Clovis, Fresno County, is installing a new elevator and conveyor.

The Peach Growers Association has amended its by-laws so as to admit fig producers to full membership.

The Tipton-Porterville-Lindsay district shipped out 100 carloads of cantaloupes this season with satisfactory returns.

Santa Clara Valley tomato growers are endeavoring to secure outlet for 1,500 acres of tomatoes which canners decline to buy at any price.

The Raisin Growers Association is adding to its membership at a rapid rate, support coming because of the attack made by the federal government.

A "road hog" caught near Modesto in the act of crowding an auto off the highway with his truck has been arrested and deprived of his license for 30 days.

The report of the engineer for the Merced irrigation district will recommend that the dam be erected at a point on the Merced River near Exchequer in Mariposa County.

Two carloads of grapes were recently held up by Horticultural Commissioner Roullard of Fresno County. The grapes were on the edge of molding because of the long wait for cars.

California Peach Growers, Inc., announces that it will complete the merger of peach and fig interests by January 1. The new organization will be known as California Peach and Fig Growers.

The irrigation board's decision that everybody should hold up on irrigation because of water shortage has been rescinded because of the showing of orchardists that great injury would result to orchards deprived of fall irrigation.

A survey of the water resources of Tulare County is being made by the state department of engineering. The survey is in two sections, the district dependent on the Kaweah River and the southern part of the county dependent on Tule River, Deer and White Creeks.

Southern California

Orange County fair at Huntington Beach, October 7-9.

National Tractor Show of the West this week at Glendale.

Riverside cannery has put up 125,000 cases of fruit and vegetables.

Work has begun on opening the Santa Ana River channel to the ocean.

Hemet peach growers report receiving \$30 a ton for undersized freestone peaches to be made into jam.

The U. S. bureau of crop estimates places the probable crop of walnuts at 24,000 tons.

The Los Angeles County farm bureau is holding a series of soil moisture meetings.

The harvesting of sugar beets is showing an average yield of about nine tons to the acre.

Horticultural Commissioner Ryan of Los Angeles County is making a rodent control drive.

Rainstorms in the Blythe and Coachella Valley districts did some damage to the cotton crop.

C. C. Teague of Santa Paula has been elected president of the California Fruit Growers Exchange to succeed P. J. Dreher, resigned.

The bean harvest is earlier than usual on account of the hot, dry weather and absence of fogs during July and the first part of August.

At a meeting of cotton growers at El Centro, growers of Pima expressed themselves as willing to hold until they could secure \$1 per pound.

The sugar beet harvest indicates an 80 per cent of normal crop as compared with 60 per cent last year and a ten year average of 90 per cent.

The state department of agriculture estimates condition of Lima beans at 47 per cent of normal and forecasts production about the same as last year's.

Beekeepers of Southern California will make large exhibit at the Riverside fair. The fair association is offering especially attractive prizes for honey exhibits.

Directors of the Imperial County farm bureau are looking forward to a regular annual county fair. Definite arrangements are made for the one to be held this fall.

Report issued by the bureau of crop estimates on pasture conditions September 1 shows pastures throughout the state 73 per cent of normal, condition best in southern and mountain counties.

California Fruit Growers are interested in the claim now being made by the members of the bureau of markets that berries, tomatoes and some other fruits can be preserved more economically by freezing than by canning.

Dr. J. E. Coit, formerly farm adviser of Los Angeles County and for years connected with the elcticulture division of the state university, has located in Los Angeles to establish a business as consulting horticulturist.

The coming year's orange crop in Southern California is estimated by the federal and state departments: Los Angeles County, 6,650,000; Orange, 2,700,000; Riverside, 1,800,000; San Bernardino, 4,400,000; San Diego and Ventura, 300,000.

The Coast and General

Colorado's cantaloupe crop may total 4,500 cars.

Watermelon syrup is being manufactured in Georgia.

Florida holds its state fair at Jacksonville, November 18-27.

The canned fruit market is slower than it has been for years.

Hop pickers in the Yakima Valley, Washington, are being paid \$1 a box.

Several large drainage projects are proposed for Florida agricultural districts.

Heavy shipments of feeder cattle are being made from Florida to Texas ranges.

The Cattle and Horse Raisers Association of Oregon met September 12 in Prineville.

The population of the state of Washington increased during the last decade 18.8 per cent.

Leon County, Florida, has a livestock breeders association, said to be the only one in the state.

Okanogan County, Washington, will hold no community fairs this year, because of the crop shortage.

The Oregon state fair will pay out over \$1,000 in prizes for butter and cheese produced in that state.

An inch and a half rainfall in western Oregon occurred September 12 and 13. Hops and prunes were damaged.

Several Oregon alfalfa growers have suffered serious losses because of shortage of labor and shortage of cars.

Yakima Valley of Washington is shipping out 500 carloads of hay per month at prices ranging as high as \$25.

The greatest crop ever of corn for the U. S. A., 3,131,000,000 bushels, is the estimate of the crop reporting bureau.

Cabbage growers of Colorado have formed a marketing exchange, membership to apply only for the 1920 shipping season.

Livestock men of Yakima County, Washington, have been granted reduction of 50 cents per head in assessed valuation of sheep.

The farm bureau of Cowlitz County, Washington, has secured the services of a poultry specialist, who will hold culling demonstrations throughout the county.

Hop growers of Puyallup Valley, Washington, say that hops have never been in better condition. The yield promises to be 85 per cent better than last year's.

A consignment of Thompson Seedless raisins was recently received in San Francisco from New Zealand. The shipment was destined for New York markets.

Skagit County Dairymen's Association, Washington, is erecting a milk products plant at a cost of \$260,000. It will handle a quarter of a million pounds of milk daily.

Fruit growers of the Yakima Valley, Washington, have served notice on the general freight agent of the Northern Pacific that they will ask the next state legislature for a reciprocal demurrage law compelling transportation companies to pay demurrage for every day growers are forced to wait for cars.

Cotton Quarantine Strengthened



PUBLIC hearing was held at the office of the state department of agriculture in Los Angeles on September 14 to consider the advisability of strengthening the existing plant quarantine regulations covering cotton and cottonseed and their by-products; to coordinate the efforts of the authorities of the states of California and Arizona and Lower California in Mexico in keeping from the cotton areas in these states the cotton boll weevil, the pink bollworm of cotton and all other cotton pests.

These three states have the only cotton areas of any extent in the known world free from the cotton boll weevil or the pink bollworm, or both,

and measures even more drastic than those now in effect for maintaining this freedom were drafted and adopted at this public hearing. At the same time the regulations now enforced were made to harmonize.

Cotton seed and seed cotton from all states where the boll weevil or the pink bollworm are known to exist are prohibited entry to the states of California, Arizona and Lower California. All other cotton and cotton seed products are admitted only when complying with regulatory measures. While New Mexico is not known to be infested with either the cotton boll weevil or the pink bollworm, no protective measures are being taken by that state and consequently cotton

products grown there are placed in the same category as cotton products from states actually infested. If New Mexico takes proper measures for her own and her neighbors protection it is possible the restrictions may be modified in future.

Among questions pertaining to every phase of the cotton industry from the planting of the seed to the ginning of the cotton, which were thoroughly discussed, was the development of a source of supply of pure cotton seed, which measure would tend to eliminate the desire to import seed from states where the boll weevil and the pink bollworm now exist. It developed that the state department of agriculture, in cooperation with the U. S.

department of agriculture, took the initiative last spring and secured a supply of pure Lone Star short staple cotton seed, which was planted in Imperial County under conditions to insure continued purity of the seed, and that from this planting sufficient pure seed will be harvested to plant approximately 1,300 acres next spring. It is hoped to continue this work and ultimately not only to supply the demand in California for pure short staple seed but also in the Southern states.

The disinfection of box cars contaminated with cotton seed from the infested areas was discussed and it was shown that the state department

(Continued on Page 405.)

Control of Citrus Pests by Dusting

By R. E. Smith at Pomona Farm Bureau
Pest Control School



FEW years ago the walnut aphid was considered in many districts one of the most injurious and difficult

to control pests which affect this crop. In fact, no method of control whatever was in practical use in spite of repeated efforts by state and federal investigators to find some means of handling this pest. The difficulty lay in the size of the trees and the rapid multiplication and spread of the insect, making ordinary spraying methods so slow, laborious and expensive that most growers could not see any hope of practical control along such lines.

Today this aphid is being controlled so completely, easily and cheaply that it is no longer a pest in the districts where it was formerly worst. This has come about through the development by the California Walnut Growers Association of a method of applying nicotine to the trees in the form of a dry powder or dust instead of as liquid spray. So largely is this material used by the walnut growers that the association has incorporated a subsidiary branch, the Walnut Growers Spray Manufacturing Company, to manufacture it at cost for its members. The advantage of this method over liquid spraying is most easily emphasized by pointing out the following fact: Thorough spraying of good sized walnut trees requires from 25 to 50 gallons of spray per tree, or from 500 to 1,000 gallons per acre. On the basis of weight this means that for every acre of trees sprayed a weight of from two to four tons of water must be hauled to and through the orchard and sprayed onto the trees. While it is not denied that this, with proper equipment, can be done, the fact remains that the time, expense and effort required have thus far defeated every effort toward any general, effective spraying of walnuts by the liquid method. Contrasted with this is the fact that with the Walnut Association's method and material only 50 to 75 pounds weight per acre is needed. This is put on with a much lighter and cheaper outfit than the spray rig required for walnuts, the work is very much quicker, easier and cheaper, and the results obtained are usually better; at any rate they are as near perfection as are often reached in insect control.

The success of this method has led to numerous inquiries as to its applicability in the control of other pests,

and among these certain citrus enemies, the subject of our present discussion. At the outset we would most strongly emphasize the fact that the mere putting on of an insecticide in the form of a dry powder rather than in a liquid or gas is not sufficient. This is only one factor. We must have an effective kind of dust for each particular purpose, the proper machine for putting it on, and the work be done at the right time and in the right way. Inasmuch as the much older methods of spraying and fumigating are still being improved by radical changes and new discoveries in methods and materials, it is reasonable to assume that dusting is only in its infancy in these respects. At the same time we are very far from claiming for dusting that it will ever supersede other methods of insect control or that it is anything more than an important addition to our present methods.

Practically all the success which has thus far been attained in the control of insects by dusting has been with two classes of insecticides: 1. Volatile substances which kill by giving off a gas into the air. Such substances are, at present, mainly two, nicotine and sulphur. 2. Stomach poisons, like lead-arsenate and Paris green, which are dusted upon the plants and then eaten by chewing insects. That this list and classification will be extended in the future is highly probable.

Coming down to citrus insects, the one which most strongly suggests itself is the red spider, a pest which has long been successfully controlled by dusting with dry sulphur. There are two objections to this; namely, that sulphur is effective only in hot weather and that it is disagreeable to pickers working in the orchard soon after the sulphuring has been done.

The fact that in our coastward sections particularly the spider often develops quite extensively during the winter cool season, and the objections made by lemon pickers, together with the existence of numerous commercial spraying outfits who are pushing the liquid spraying method, has had a tendency to force sulphur dusting into the background during recent years. There is noticeable, however, a growing dissatisfaction with the results of red spider spraying. The claim is

made, and with some apparent support, that while proper spraying with lime-sulphur affords temporary relief, yet the spider gets bad most often in the best sprayed groves, and the more spraying is done the more has to be done. I believe it is true that in certain parts of Los Angeles County the spider is worse today in groves which have been persistently sprayed with lime-sulphur than in the majority which have never been sprayed. In many cases good results in red spider control have been obtained by thorough sulphuring in the warm fall months, thus reducing the pest to such a point that in well cared for groves it does not get bad again during the winter. This is cheaper and easier than wet spraying and the small grower can do the work himself if he prefers. With oranges there is no objection to this method on the part of the pickers. The best authorities on red spider, like Professors Quayle and Esig, tell us that for this purpose the finest sulphur should be used and that it is better to mix about 25 per cent of some material like hydrated lime with the sulphur to break up the lumps, reduce the danger of burning in hot weather and make the sulphur blow and stick better. Acting on this advice, our association has been making a special dusting sulphur mixture which we believe to be the best possible form for dry dusting. We buy the very finest and highest grade in carload lots and run this through our big dust mixing outfit, making a mixture containing 75 per cent sulphur and 25 per cent of our special filler. This makes a perfectly smooth, homogeneous, impalpable dust which forms no lumps, blows like smoke and sticks well to foliage. Whenever sulphur is to be used such a mixture is certainly better, and we have been able to make it somewhat cheaper than pure sulphur.

There is a good field for the development of dusting materials other than sulphur for red spider in order to get something which will work in cool weather and not bother the lemon pickers. Some progress in this direction is being made by our organization.

The orange aphid seems to have become an established pest in Orange

and Los Angeles Counties during the last three or four seasons. Like all aphids, its occurrence is sporadic, but it has been bad for several years in succession, and right at the present time it is developing very rapidly on young orange trees. This pest curls the leaves and ruins the new growth. Particularly in western Orange County it has caused immense losses by retarding the development of young Valencia's. It is much more resistant to nicotine than the walnut and is also harder to hit, either with dust or spray, on account of the curling of the leaves. With any method of treatment best results are obtained by working before much curling takes place, going over the young growth as soon as the first aphids appear. For this purpose the dusting method has proven cheaper, easier and more effective than liquid spraying, using a properly made dust strong in nicotine, with sulphur added for red spider if desired. It is not possible, however, to clean up citrus aphids at one application as completely as can be done with walnut aphids. If conditions are favorable for the pest, several applications may be required in order to hold down the aphids enough to give the young growth a chance to develop. If this is necessary the ease and quickness of the dusting method are of particular advantage.

The citrus thrips is another insect in the control of which the dusting method has peculiar advantages. This insect, like all thrips, is particularly susceptible to nicotine, but is likely to require several applications of the insecticide on short notice for its complete control. Using a dust of moderate strength in nicotine the grove can be gone over very quickly and cheaply and several applications can be made on a large acreage in the time required to spray a few acres once with wet spray.

Beyond the pests mentioned, red spider, aphid and thrips, we have no definite suggestions to offer at present concerning the control of citrus insects by the dusting method. The convenience and cheapness of this method of application, however, the fact that it is so much quicker than wet spraying and that the grower can often do the work himself at odd times and with inexpensive outfit has encouraged the Walnut Growers Association to carry on their work far beyond the original object of finding a practical method of controlling the walnut aphid.

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Forty-third Year

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and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

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 Combined with California Cultivator 1916

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EDITORIALETTES

Funny! It never rains but it pours; it never pours but somebody gets wet; when they get wet they get cross.

* * *

We are referring to editorial rain, for this week is like unto last week, so here are a number of short ones with only a hint of what we would like to say.

* * *

This is fair and show season. We just came from a 15 minute look at the National Tractor Show of the West. Honestly, it is one of the prettiest staged shows we ever saw. Verdugo Woodlands has become a beauty spot and the whole show is so arranged that the seeker after knowledge of trucks, tractors, implements or farm power has the answer handed to him almost the moment he asks it. The Cultivator camera has been in action and next week will give to readers of the Cultivator some of the beauties and some of the real practical lessons from the National Tractor Show of the West. We haven't been able yet to photograph any of the brownies or fairies, but they certainly have been there.

* * *

Then, so long as it is fair season, next week's paper will have a whole

page devoted to San Joaquin County, Tulare County, San Diego County, and perhaps some other fairs. There were never so many fairs; there were never such good fairs as there are this year. And—perhaps it is because we have looked with more earnestness for the real lessons of the fairs—it appears to us that others are studying more to make the fairs of real value to California agriculture or, more particularly, to their own individual cases.

* * *

One man has said: "I never saw such pumpkins exhibited as those at the San Fernando Valley fair." San Fernando is the site of one of the state's oldest missions, and because of that and the fact that thousands of tons of hay were grown over that section only a few years ago, nearly everyone has it definitely located. But there is a new San Fernando Valley. The waters of Mt. Whitney, 250 miles away, are being spread over its soil, and the result has been shown in the fair, only a mere reference to which is made, and some of the awards given, in other columns of this issue.

* * *

Speaking of fairs reminds us of one thing we seriously object to, that is, the school of gambling which is connected with many of them. This is not peculiar to the fairs, unfortunately, for beach and other resorts have the same educational facilities. The principal feature is a wheel of fortune, dice throwing, or other game of chance, for winning a baby doll, a box of candy, a basket of fruit or other consideration of more or less value. According to the article raffled, there are anywhere from ten to 50 chances to win. In one case—a basket of fruit which would sell on the market at perhaps a dollar—one could buy one or 30 chances to secure it for ten cents a chance. If he bought the entire 30 numbers of course he got the basket for \$3; if he bought one he got it—maybe—for ten cents. The basket of fruit was only one of something like 100 different gambling outfits maintained on the state fair grounds. At least, we counted 76 separate booths, each with from one to three individuals attending. At another location there were also a large number. The "baby doll with real hair" joints were the ones which attracted literally thousands of children, and they were taking most seriously that they won or did not win the much coveted doll. The morals of the question we are not discussing at this time, but we do present it as an economic question. Future years may show the real value of the maintenance of these gambling devices. So long as they follow so largely agricultural fairs, we believe it is an entirely proper question for the agricultural legislative committee to consider. Are these institutions advancing the agricultural interests of the state?

* * *

When accompanying the Middle West farm bureau representatives on their recent coast trip, Mr. Teagarden of Placer County, this state, made a most practical suggestion as to true cooperation in marketing the products of the farm and possibly in securing some of the larger farm supplies. Growers of necessity must unite and secure someone so skilled in business matters that he can handle the proposition and make money for the cooperators. People of one community or, perhaps, a large section of the country, whose products are similar can do this, but true cooperation ceases when people of one community organize not

only to produce and market their one product but to merchandise and supply themselves with sugar, tea, coffee, and even papers of pins. The logical conclusion of such an effort is a trust which deprives others of making a living and forces in turn cooperation on the part of the merchants which will ultimately result in a trust. The farm located near a progressive town has higher value than the one near a dinky, forsaken little community center.

* * *

This demurrage business should be reciprocal. At least, that is the conclusion reached by the Yakima Valley (Washington) Growers and Shippers Association. Here it what they say to the general freight agent of the Northern Pacific: "Our association members feel that all shippers in the Yakima Valley have had a very raw deal by the Northern Pacific ordering all box cars out of the valley when the shipping season is at its height and in the face of increased freight rates. We will use our best efforts next legislature to pass reciprocal demurrage law." May they use something besides wadding in their ammunition on the legislature.

* * *

As a suggestion which may be used in settling the present Japanese question, former President Wheeler of our state university offers: "Let the ocean make peace between us." "Mutual regard," "gentlemen's agreements" and all kinds of expressions as to the admirable qualities of the "little brown men" and diplomacy in handling the international situation, all have their place, but when the Pacific is between us, there will surely be peace.

* * *

Those who live in raisinland will be interested in Fred Howard's Zante Currant article on Page 393. There is nothing whatever in the article about currants, that is, real currants, but it does describe, and most fully, the dried grape which is ordinarily passed in American markets as "Zante Currant." These grapes have been grown in the San Joaquin Valley for nearly a score of years, but when sent to the market from that section have failed to contain as much of the gravel of southeastern Europe as has the imported product. Whether this is the reason why they have not been so well received in the market, we are not certain, but there is a helpful suggestion given in Mr. Howard's article of a cultural possibility which may mean much of profit to raisin growing sections.

* * *

One thing peculiar to the Zante currant, and to many other plants for that matter, is the punishment which is required in order to induce bearing of full crops. In years gone by we have referred to the belief of some orchardists that the constitution of their trees called for iron in the sap as it circulates, hence they have driven valuable trees full of old spikes and nails in the effort to supply the iron. How much iron may be taken up or may be needed is a problem, but, plainly, sap flow which is interfered with in many a tree or plant sometimes does result in increased crops.

* * *

Raisin growers are meeting the attorneys of the department of justice of the federal government this week. As yet there has been only jockeying as to legal points. We hope the department will prove true to name. The Los Angeles Times suggests: "The government thinks that the raisin

men are profiteering in the necessities of life. Since the eighteenth amendment has been applied raisins are raisins. The administration has been patient under advances in bread and milk and meat, but if the insidious hand of the profiteer gets into our raisins there's the deuce to pay."

* * *

Some of us, who invested in Liberty Bonds at \$100 per bond and now offer to sell and find them quoted at \$85, are justified in a grouch. That doesn't help—not much, but hero's a suggestion which may: The poor folks who invested the money which they got from selling those bonds in oil stocks are still worse off, for it has been estimated that, averages considered, every hundred dollars invested in oil is today worth but five dollars. In other words, 95 dollars out of every 100 invested in oil stock has been lost. The country will be without oil in the next score of years if the estimates of experts are correct. New oil fields must be developed, so there is call for investment in legitimate oil development on the part of those who can afford it, and there is promise of return—some time. But, as a certain diminutive figure in a popular cartoon often remarks to the tall, slim fellow in the cartoon, "For the love of Mike, be reasonable!" Let's keep our Liberty Bonds and let the other fellow do the developing, at least the wildcatting.

* * *

"The biggest on earth" is again true of California. This time it's population. The state does not yet possess the greatest population of any of the states, but it does show so far the greatest increase both in percentage and in actual numbers. The announcement of the census bureau shows California's population numbers 3,426,536, which is an increase of over a million, or 44.1 per cent in the past ten years. The 1910 census showed a population of 2,377,549. Our area is 155,652 square miles, hence the average is 15.3 per square mile. California was admitted to the Union in 1850, at which time the total population was 92,579. The increase for the decade 1900-'10 was 892,496, so that this year's increase of 1,048,987 is not only the greatest of any state in the United States so far reported, but the greatest numerical increase ever made by California. Great is California!

* * *

The road hog is coming into his own. We recently saw, we believe in Kern County, that one truck driver, in the habit of remaining in the middle of the road and crowding off other machines, had received stiff sentence from the justice before whom he was tried. However, recklessness still flourishes, as is shown by the fact that last Monday in the city of Los Angeles there were 105 automobile accidents. On the same day there were 150 arrests of persons charged with traffic violation.

* * *

Manager Thomas says: "Every foot of space in barns and sheds has been taken, and to accommodate the late comers we have built new barns to cover almost every foot of available space in the great Exposition Park. It will be a magnificent showing of the livestock industry of the Southwest. Livestock is already coming and the gates open Saturday, October 2."

* * *

The course in practical fruit packing recently given to young men and women of the Placerville district of Eldorado County has shown decided results in grade of work done and in returns to the young packers. It is hoped that more work along this line will help to solve the problem of employment of Orientals.

San Fernando Valley Fair

THE "San Fernando Valley Fair and Market" was the name given a most notable display of valley products at Owensmouth, September 15 to 18. Two very large tents housed the exhibits, one of which was filled with livestock, the other with horticultural exhibits, tractors and automobiles. Among the horticultural exhibits the most striking was an enormous market basket, four feet long, filled with peaches and crowned with bunches of black grapes.

The peaches were Phillips Cling (the largest the writer has seen) and the Curry, the latter a new freestone variety of promise originating at Lankershim, the peach center of the valley. The grapes were a new variety, new at least to local territory, known as the Black Damson. They are large, intensely black in color and of good flavor. The ranch whereon they grew was afterward visited and the grapes sampled. They are a good table grape of handsome appearance.

Two booths were filled with ornamental trees, shrubs, etc., one of them having in the foreground a bluegrass lawn. Pumpkins, squashes, casabas

Get of boar, 4 swine—1, Tarzana. Produce of sow—1, Tarzana.

Duroc-Jersey Swine

Exhibitors: A. V. Austin, Van Nuys; Geo. S. Anderson, Owensmouth; Glen A. Fox, Mission Acres; Fred Knapp, Owensmouth; R. B. Schachtel, Van Nuys; Leo B. Lesperance, Van Nuys; H. M. Lord, Marian; E. F. Myers, Lankershim; Witt & Huey, Lankershim; Max Knapp, Owensmouth; Edward J. Roussey, Simi; Armour Trexler, Owensmouth; Gladys Williams, San Fernando; David Thompson, San Fernando; Hewitt Bros., Van Nuys; Conejo Ranch, Newbury Park; Mrs. R. E. Whitley, Van Nuys; E. Avery Newton, Lankershim; Karl Zinsmaster, San Fernando; W. T. Mead, Owensmouth; Loyal Dixon, San Fernando.

Senior yearling boar—1, Hewitt. Junior yearling boar—1, Newton. 2, Whitley.

Senior boar pig—1, Hewitt. 2, Newton. 3, Whitley.

Junior boar pig—1 and 2, Hewitt. 3, Zinsmaster.

Aged sow—1, Myers. 2, Austin. 3, Mead.

Senior yearling sow—1, Keystone. 2, Whitley.

Junior yearling sow—1, Whitley. Senior sow pig—1, Lord. 2, Whitley. 3, Hewitt.

Junior sow pig—1, Dixon. 2, Zinsmaster. 3, Hewitt.

Senior pig herd—1, Hewitt. 2 and 3, Newton.

Boar and 3 sows bred by exhibitor—1, Hewitt. 2, Newton.

Get of sire, 4 swine—1, Hewitt. 2 and 3, Newton.



The Banana Squash

Fine specimens of this squash were on exhibition at San Fernando Valley fair and tons of them, now being harvested, were seen throughout a trip over the valley.

and other agricultural products were lying about in profusion and confusion, for these exhibits were in the staging process, so no attempt was made to list them. Everybody was busy and all wore a smile, for it was already known on this, the opening morning, that the fair was to be a huge success, better even than anticipated by the committee in charge.—E. B.

Considering that this was the first real agricultural fair held in the valley, there was a wonderful showing of pure bred livestock. The best comment is in the awards which follow:

Poland China Swine

Exhibitors: Eastman Rancho, San Fernando; E. Avery Newton, Lankershim; Howard Cravens, Owensmouth; T. M. Edmonson, Van Nuys; H. Kubler, San Fernando; Geo. Thomason, Owensmouth; E. B. Peers, Owensmouth.

Aged boar—1, Peers on Long Smooth Jumbo.

Junior yearling boar—1, Eastman on Buster Bob. 2, Newton on Price's Long-fellow.

Senior boar pig—1 and 2, Eastman. Junior boar pig—1 and 2, Eastman. 3, Newton.

Aged sow—1, Peers on Lady Model Giantess 3rd. 2, Italian Vin. on Emblem's Lady Goods 11th. 3, Newton on Majors' Choice.

Junior yearling sow—1, Italian Vin. on May Queen.

Senior sow pig—1, Eastman. 2 and 3, Cravens.

Junior sow pig—1, Eastman. 2 and 3, Newton.

Senior champion boar—Eastman on Buster Bob.

Junior champion boar—Eastman on Korver.

Senior champion sow—Peers on Lady Model Giantess 3rd.

Junior champion sow—Eastman.

Grand champion sow—Eastman.

Grand champion boar—Eastman on Buster Bob.

Sow and litter—Peers.

Get of sire—1, Newton. 2, Eastman.

Hampshire Swine

Exhibitors: E. Avery Newton, Lankershim; Tarzana Ranch, Van Nuys.

Aged boar—1 and 2, Tarzana.

Senior yearling boar—1, Newton.

Junior yearling boar—1, Tarzana.

Senior boar pig—1, Newton.

Junior boar pig—1, 2 and 3, Tarzana.

Aged sow—1, 2 and 3, Tarzana.

Junior yearling sow—1, 2 and 3, Tarzana.

Senior sow pig—1, 2 and 3, Tarzana.

Junior sow pig—1, Newton. 2 and 3, Tarzana.

Aged herd—1, Tarzana.

Boar and three sows—1, Tarzana. 2 and 3, Newton.

Boar and 3 sows bred by exhibitor—1, Tarzana.

Get of sire—1 and 3, Tarzana. 2, Newton.

Produce of dam—1 and 3, Tarzana. 2, Newton.

Produce of dam, 4 pigs—1, Hewitt. 2 and 3, Newton.

Herd under 6 months—1, Zinsmaster. 2, Mead. 3, Newton.

Senior champion boar—Hewitt on Top Sensation 1st.

Junior champion boar—Hewitt.

Grand champion boar—Hewitt.

Senior champion sow—Whitley.

Junior champion sow—Lord.

Grand champion sow—Lord.

Berkshire Swine

Exhibitors: E. R. Maier, Santa Susana; Italian Vineyards, Guasti; California Truck Co., Los Angeles; Inglewood High School, Inglewood; C. T. Johns, Cucamonga.

Aged boar—1, Maier on Escalon May Star. 2, Italian Vin. on Choice Goods 10th.

Senior yearling boar—1, Maier on Escalon Type 2nd.

Junior yearling boar—1, Italian Vin. on Champion Type 2nd. 2, Inglewood H. S.

Senior boar pig—1, Nance.

Junior boar pig—1, Johns on Master Type.

Aged sow—1 and 2, Italian Vin. on Emblem's Lady Goods 7th and Emblem Lady Goods 2nd.

Senior yearling sow—1, Italian Vin. on Castle View Lady 3rd.

Junior yearling sow—1, Italian Vin. on Violet Penn. 2, Maier on Los Delicias Model. 3, Italian Vin. on Emblem Lady Goods 20th.

Junior sow pig—1, Johns.

Boar and 3 sows—1, Italian Vin. 2, Maier.

Junior herd—1, Johns.

Get of sire, boar and 3 sows—1, Italian Vin. 2, Johns.

Produce of dam—1, Italian Vin. 2, Johns.

Senior champion boar—Maier on Escalon May Star.

Grand champion boar—Maier on Escalon May Star.

Senior champion sow—Italian Vin. on Emblem's Lady Goods 2nd.

Grand champion sow—Italian Vin. on Emblem's Lady Goods.

Milk Goats

Toggenburg. Doe, 2 years and over—1, Kiefhaber on El Chivar Swiss Lassie.

Buck, under 1 year—1, 2 and 3, Davidson on Hebe Iago, Hebe Kibibinoki, Hebe General Wooster.

The California Vegetable Union has extended its field of operations far to the north until it has become necessary to bring its crop production department into closer relationship with the producing field. This takes the department to Sacramento, and work of extending the usefulness of the Union in that part of the state will be its principal feature. Presumably this will take Mr. Risser to Sacramento.

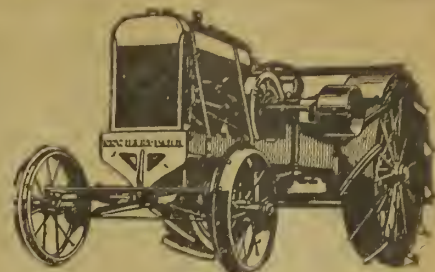
Colusa County rice growers have put in duck herders to keep the ducks on the move. Considerable damage is already reported.

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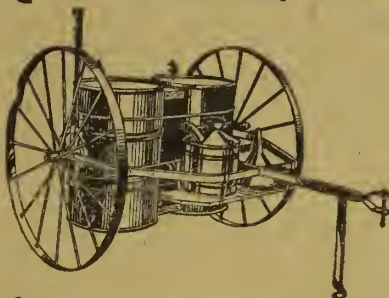
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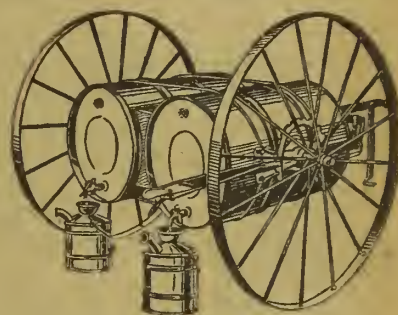
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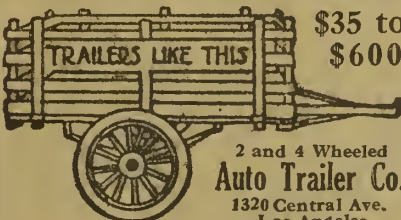
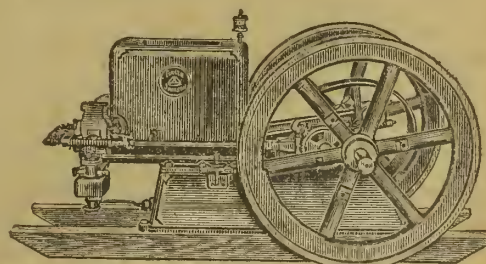
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Wipe Fruit to Remove Coating From Late Spraying

Where fruit growers late in the season have sprayed fruit so heavily as to leave a residue on it, the United States department of agriculture urges them to remove the coating by wiping or other means that will make the fruit acceptable in the market. One method recommended for apples and pears, which can be followed at a cost of a few cents per box, is to wipe the fruit with cotton gloves. It is pointed out that if heavy rainfalls do not occur after heavy late sprayings the coating that remains may disfigure it sufficiently to arouse apprehension in the minds of the consumers, even though the residue may be entirely harmless. In some cases, however, heavy late spraying has been sufficient to be actually injurious and so subjects such fruits to seizure under state or federal food and drug laws.

Where apples and pears when harvested show evidence of spray residues which have not been removed in picking, handling, grading and packing, it is recommended that such fruits be systematically wiped before being placed on the market or packed for shipment. While this precaution is applicable to all fruit sprayed late in the season, it is especially important in the more southern apple districts

where the grower is often compelled to spray late to protect the fruit against bitter rot, and in irrigated orchards of the West and Northwest where protection of apples and pears against the later broods of the codling moth is secured by spraying with arsenate of lead.

While at this season the department's specialists are laying emphasis on the importance of wiping fruit that has a residue from spraying, they also take occasion to urge that no grower should suppose fruit injury resulting from neglect of proper spraying early in the season can be corrected by belated spraying. Heavy late spraying undertaken in an effort to make up for what should have been done earlier is strongly condemned.

The practice of spraying growing fruit properly marks one of the most important steps in horticultural progress and is responsible, to a large extent, for the sound, attractive appearance of fruit now on the market, which is in marked contrast to the insect injured and disease spotted fruit so prevalent a few years ago.

District about Red Bluff in Tehama County is harvesting fine crop of prunes; hop crop is of exceptionally fine quality.

REORGANIZING

For some months officials of the California Prune and Apricot Growers, Inc., have been in conference with members of the federal trade commission, discussing matter of organizing and putting the cooperative association in a stronger position, especially with regard to any feature which might be in conflict with anti-trust legislation. The board of directors and trustees of the association recently met in San Jose and voted to change the form to a non-capital membership association. Reorganization will be begun immediately by altering the form of contract with growers now uniting with the association. The reorganization will be completed in 1922, when all of present contracts between association and 10,000 grower members expire.

In statement by the California Prune and Apricot Growers, Inc., it was said that the federal trade commission always has recognized that the prune association could not in any sense be looked upon as a monopoly because of the already large and steadily increasing Oregon and Washington prune productions.

Justifying the commission's attitude it was pointed out that the Oregon and Washington prune crop this fall will total approximately 80,000,000 pounds as compared with the estimated California yield of about 175,

000,000 pounds. Of the combined production of 255,000,000 pounds the California Prune and Apricot Growers, Inc., markets less than one-half.

FAIR PRICE FOR PRUNES

The Cultivator recently used on its little news note page: "Prices named on prunes by the Prune and Apricot Growers Association are from a cent and a half to three cents higher than last year," which was entirely correct and yet entirely wrong. It was entirely correct as to prices on fine large size "luxury class," but as to the regular food prune a price far in excess of what consumer pays. This called for comment from one of California's cooperators, also an attorney, of San Francisco, Aaron Sapiro. Mr. Sapiro writes:

"If you will compare the opening prices for 1920 prunes with the opening prices for 1919 prunes, you will find that there was an increase on so-called luxury sizes, but that on some ordinary sizes the prices are one and a half cents lower than last year. For example, on 80/90s the price is 9½ cents a pound, as against 11 cents a pound last year. Contrary to the usual accuracy of your statements, this particular item is somewhat lacking in precision."

We appreciate the correction. We are always glad to be set right

ALLOTING DELHI

Unit No. 1, comprising 1,191 acres in the Delhi Land Settlement, was opened in May last; Unit No. 2, comprising 2,832 acres, is now to be opened and application, accompanied by five per cent of the cost of the land, may now be made. Other payments on the land may be made during the next 36½ years with interest at five per cent. Another unit of 1,540 acres will not be opened until January, 1921. Walter Packard is superintendent of the tract and will give full information.

THE ZANTE CURRANT IN CALIFORNIA

(Continued from Page 393.)

Interest Keen in Valley

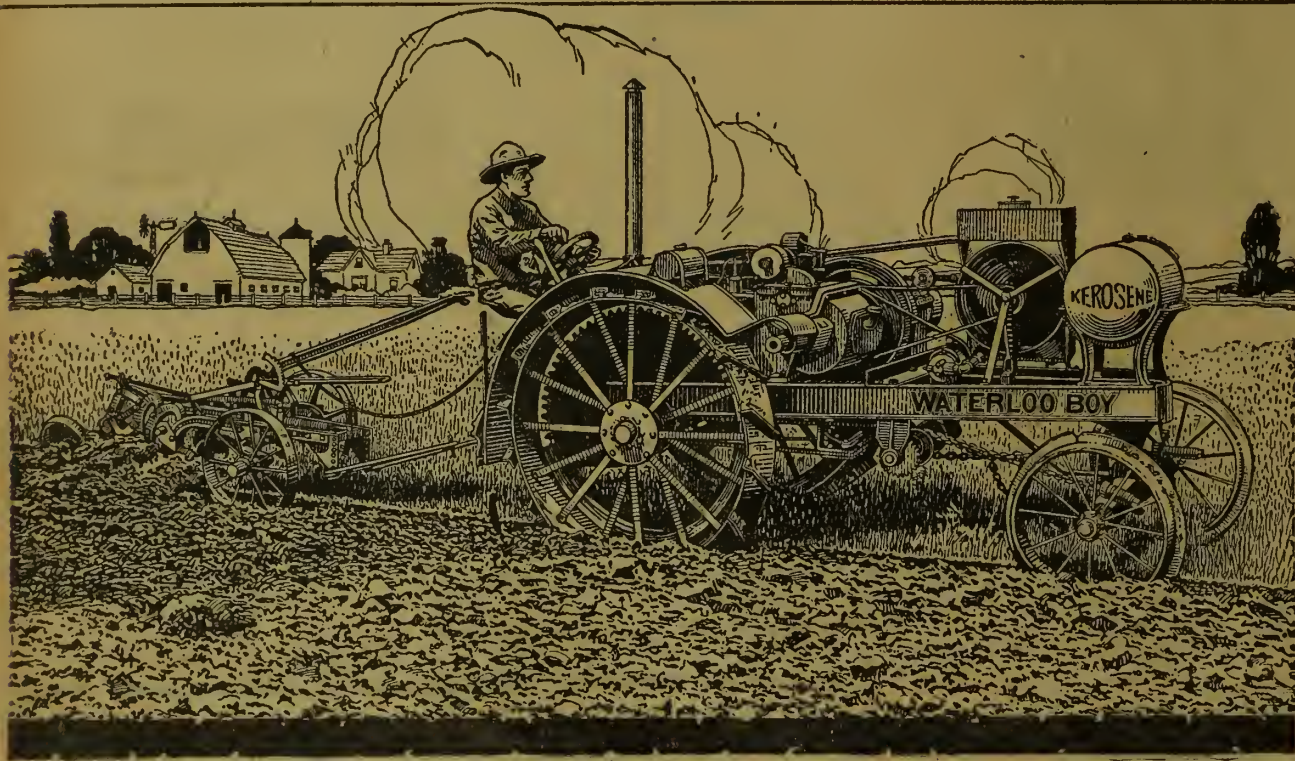
The interest in this new variety has been very keen during the past few years. This has been particularly true since it has become more generally known that the federal men in charge of experimental work have at last found a means of growing a good crop. There are, of course, several very good reasons for this interest, the most important being the fact that the fruit ripens during the latter part of July and requires only two or three days in the sun before stacking and from 10 to 15 days in the stack. This allows the grower who is producing both Thompsons and currants to use the same equipment for both crops. One other reason is that there is a feeling that with the extensive planting of the Thompson Seedless in the valley there is a danger of it being overdone. This fear may be well founded, though officials of the Raisin Association feel that there is little danger of overproduction so long as the association is maintained at its present status.

There are at present approximately 250 acres planted to the Panaritl in the San Joaquin Valley and where girdling has been practiced satisfactory crops are secured. Ten tons of fresh fruit to the acre is not at all uncommon, and when picked at 26 to 28 per cent sugar content it requires three and a quarter to three and a half pounds of fruit to make one pound of currants.

Vine Is Very Vigorous

The Zante currant vine is a very vigorous grower, in fact, much more so than the Thompson, and its lack of fruitfulness unless girdled has been attributed to its excessive vigor. The common practice by growers of the currant is to stake and trellis in the same manner as is done with the Thompson. It is also pruned to long canes, leaving short renewal spurs to secure satisfactory new wood for the coming season.

The operation of girdling is ex



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To make you the most profit, each of your different farm operations must be timely. Often weather conditions call for extraordinary effort. It is then that you can count on the dependability and rugged power of the Waterloo Boy.

WATERLOO BOY

BURNS KEROSENE COMPLETELY

It gives you dependable service at small operating cost. Its twin-cylinder engine develops full 12 H. P. at the drawbar and 25 H. P. on the belt, using kerosene as a fuel. A patented manifold converts every drop of this low-priced fuel into power. Two gallons of kerosene per acre is the average amount used when plowing.

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enough heat is maintained to insure complete combustion and full power. The radiator holds thirteen gallons of water. You don't have to stop in the field every few hours and fill it.

The Waterloo Boy is especially strong and rugged. Its various parts are designed to meet every possible strain. Every part is easy to get at. The engine runs without vibration. Its well-balanced weight provides proper traction in soft ground.

Buying a tractor is an important investment. We have a booklet describing the Waterloo Boy fully. Drop us a postal card or letter today. Address John Deere, Moline, Illinois, and ask for booklet WB-57.

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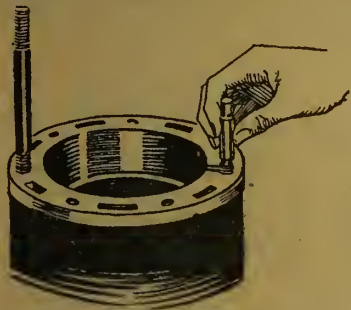
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BEES PAY

Bee-keepers can obtain from the Apiary Department of the Diamond Match Co. the finest quality of Bee-Keepers' Supplies at fair prices.

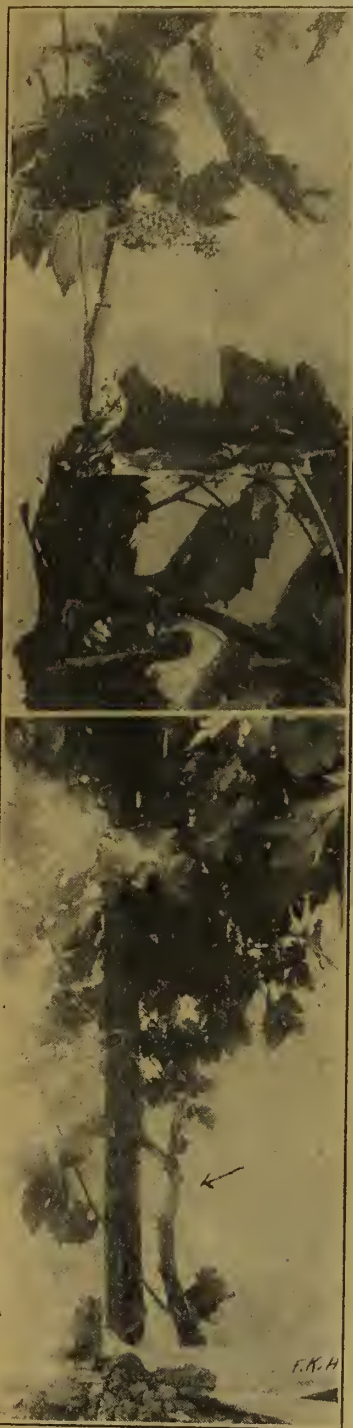
The Apiary Department, which is in charge of experienced Bee-Keepers, is one of the largest of its kind in the United States and maintains a constant excellence of product and unsurpassed service.

Write for catalogue and if a beginner for Cottage Bee-Keeping, which will be promptly mailed free.

THE DIAMOND MATCH CO.
APIARY DEPARTMENT
CHICO, CALIFORNIA, U. S. A.

Better service is assured by the advertiser if when writing you mention the California Cultivator.

pensive and requires the close supervision of the grower to be successful, and where the girdling is done on the main trunk there is considerable danger of severely injuring the vine, if indeed it is not killed outright. Continued girdling for a period of years is apparently quite harmful. Hoping to overcome this undesirable feature of the industry Elmer Snyder, who is in charge of the government vineyard at Fresno, has been experimenting with cane girdling during the past few years and finds that this method is as successful as when trunk ringing is practiced, and there is no danger of permanent injury to the vine. Mr. Snyder is also developing

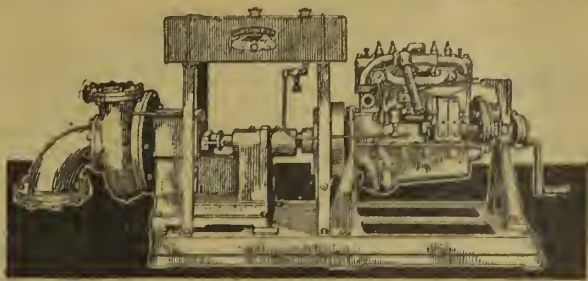


Girdling Increases Crop

Upper: A girdled cane. Note width of incision and condition of bloom, showing proper time for the operation.

Lower: A trunk incision. This grower leaves a strong shoot below the girdle to insure against the possibility of losing the vine.

a tool which promises to reduce the cost of the work of girdling. Shipments of packed fresh Zante currants to Eastern markets brought very attractive prices last season, but this season's prices were a disappointment to both growers and shippers, the fruit bringing in the East between two and three dollars per crate. Several reasons have been assigned for this, some shippers feeling that the consuming public is not yet educated to the point where it appreciates this new fruit, and also that carlots were too much to be shipped to any one point. It is possible also that the name "currant" had much to do with its acceptability to the housewife who sees or hears the word currant and thinks of jelly. Its value as a raisin grape is well established and the disappointing prices received for the fresh fruit this season will probably not retard planting to any great extent.



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121 W. Julian Street
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Distance to water below
surface of ground.....

Probable distance to water
when pumping.....

If water is to be raised a-
bove surface of ground, how
high? (Length and size of
pipeline).....

Volume of water desired
(Gals. per min.).....

(Inches).....

If you have pit, give
width..... length.....

depth.....

H.P. of motor or engine if
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Give total depth of well.....

Inside Diameter of well.....

Is well straight and true?.....

Is electric power available?.....

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Be independent. Run your pump as long as you please. You can do it with this Bean Direct-Connected Outfit.

It consists of a heavy 4-cylinder engine (Bosch High Tension Magneto) direct-connected to a Bean Universal 4-inch Pump. Handles a wide variation in head and throws a big stream. Will deliver water at either of two heads by the simple turn of a gate valve. Runs 10 hours on 6 or 7 gallons of fuel. Start it in the morning and forget it till you are ready to turn it off at night.

Send the coupon. Fill it in carefully. Let us help you solve your water problem.

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Centrifugal Pumps

TEAGUE TREES

Stand Supreme For Growth and Productiveness

You can't afford to buy anything but the best if you expect remunerative returns from your grove.

CITRUS TREES

Ours are the best that can be produced and always give satisfaction. Why take chances on inferior stock?

AVOCADOS

We still have a few extra fine field grown trees of the recommended varieties ready for immediate delivery.

FEIJOAS

Every garden should contain at least two plants of this delicious fruit. Will grow any place in California. Send for our new descriptive price list.

The R. M. Teague Nurseries

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Founded in 1889 by R. M. Teague



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By buying fertilizers on a unit basis and not a cost per box basis, you are losing a money making, labor saving, crop increasing advantage.

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Do you know how much cheaper it is to operate a

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than to keep a horse or to hire the work done?

Do you know how many things can be done on a small ranch with a

BEEMAN?

Let us tell you.

Motors Equipment & Tractor Co.
1310 So. Grand Ave., Los Angeles

Evaporator

Seeing Is Believing

Chapman's Common Sense Evaporator is now in full operation. Two at Santa Rosa and two at Modesto, turning out fifty tons prunes and grapes per day each.

Investigate now while all driers should be running.

F. C. Chapman
Modesto, Cal.

SEED FOR SALE

FROM THE FAMOUS

Hull-less Barley

Of the McNeely Ranch

Big Crop, High Food Value, and an Especially Desirable Chicken Food

Having successfully demonstrated the productive and food value of Hull-less Barley, we offer choice seed for sale at \$6.00 per bushel. It is acclimated, grows rapidly, producing from 30 to 50 bushels per acre in Tulare County. Poultrymen say it is excellent chicken feed because of absence of hulls. Small orders accepted. Dealers will find this seed in big demand. Farmers putting out small acreages will find it a ready seller for seeding purposes.

Chas. McNeely

Alpaugh, Cal.

Mariout Seed Barley

Good Clean Seed raised in Southern California from Davis Seed

Lewis J. Utt
Pala Cal.

Questions and Answers

Skin Troubles of Rabbits

My New Zealand rabbits have fur all ruffled up and they scratch and bite at it, but I cannot see any lice. Will you please tell me what is the trouble?—Subscriber, Lodi.

The first thought is that lice cause the trouble. Again, by improper feeding the moult is slow and causes irritation, urine may wet fur and cause skin irritation, or maybe some of the

following, for which we give remedies: Fleas—Rub animal with rag dipped in coal oil gently over fur; disinfect hutches with same. Do not put the coal oil in nests, however. Eruptions—small sores found in spots, causing hair to fall off. Impure air and filth are the cause; remove cause. Skin diseases—Examine skin for scales as in other animals. Sulphur and lard rubbed well into skin; second day wash with warm water and castile

soap; next day use the sulphur and lard; follow with soap and water—two applications should cure; use care in this, as mange is infectious.—W. D. W.

Ant Poison

In one of your back numbers you printed a formula for ant poison, but the paper has been destroyed and I wish you would publish it again. The ants are the common sort, a little larger than the ant which usually invades houses. We have recently moved on this place and the yard is full of ant holes and the house overrun with them.—Subscriber, Hanford.

The best control of ants is to follow the trail to their holes and pour in boiling water, gasoline, carbon bisulphide, or a solution of cyanide of sodium. The California Cultivator of August 9, 1919, shows method of placing poison in small containers on trunk of tree. This formula is now generally recognized as a standard for this pest and is made as follows: Prepare a syrup of granulated sugar, 15 pounds, water 7 pints, tartaric acid (crystallized) ¼ ounce, boil for 30 minutes. Allow to cool. Dissolve sodium arsenite (chemically pure) ¾ ounce in 1 pint hot water. Cool. Add poison solution to syrup and stir well. Add to poison syrup, honey, 1½ pounds, then mix thoroughly. Distribute as suggested above or in any container which will admit the ants and at same time not endanger children or pet stock. A very simple and effective poison is three tablespoons of honey and tartar emetic the size of a Lima bean. Mix and put in two or three saucers and place where ants are proving troublesome. We may add that there are a number of most satisfactory repellents and poisons offered in the market. An ant paste which has been advertised for years in the California Cultivator does exceptionally good work. This year's ant infestation has been so serious that in addition to using liberally of buhaach and other insect powders some have bought all types of poisons available and located around the house and other buildings.

Citrus Nursery Stock

Please tell me when is the best time to plant orange seed for stock to bud on? Is it good to give the bed a sunny situation?—Subscriber, Escondido.

The stock usually preferred is the ordinary sour stock, or bitter Seville. There are two methods of sowing the seed, broadcast or in drills, or rather trenches, eight to 12 inches wide, leaving, say, eight inches space between drills for the running of the water. This insures stockier and hardier plants than broadcasting. The seed may be planted in the spring. They are given summer's growth and lifted from the drills, or trenches, the next spring and placed in nursery row, care being exercised to discard all excepting most thrifty plants. Ordinarily these plants are left in open sunlight but some nurserymen prefer seedbed under lathhouse. Probably the greater number are so grown.

Spinach Dying

A subscriber has asked as to what makes spinach planted in August die almost as soon as it comes through the seedbed. We questioned as to whether it was not mere matter of heat of sun on unprotected seedbed. However, the question was referred to D. G. Milbrath, who writes:

"From the meager information at hand concerning that particular field, I can only venture to say that that party is probably attempting to make a winter variety of spinach grow during the hot summer months. On a small scale, I would advocate New Zealand spinach for the summer garden. Lately I saw some very fine spinach of this variety produced in Maryland and Virginia."

Layering Black Walnuts

I have tried many times to grow black walnuts and have not succeeded. Is there any preparation which the nut has to go through prior to planting, and what time to plant is best?—Subscriber, Venice.

The seed from the native Northern California Black is usually preferred for stock. These are gathered in the fall and planted soon after, by some in nursery row. However, the usual



Just a Glimpse in the State Fair Horticultural Building

Upper display is that of Fresno County. The middle shows the spirit of Los Angeles, presiding over fruits of that county. The bottom feature is that of Sacramento County with its three great arches. Photos by McCurry, Sacramento.

The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

method is to stratify. From "Walnut Culture in California," by Ralph E. Smith, we quote:

"Walnuts to be used for planting in the nursery should, after gathering, be kept in sacks or other receptacles in a cool, not too dry place until planting time. If allowed to become extremely dry after gathering the nuts germinate much less easily than otherwise. They will usually keep in good condition if tied up in sacks and piled in a cool, shady place. It may be found desirable to allow the outer hulls to dry somewhat before sacking up the nuts, especially in the case of large hybrid nuts, since if sacked and put away quite green the hulls decay and become extremely soft and mushy. Early in the winter, not much later than January, the nuts should be layered in sand or light straw earth in order to sprout them and segregate the best ones from those that germinate feebly or not at all. This is most conveniently done by constructing a frame about 18 inches deep, either above or below ground, in the bottom of which should be placed three or four inches of sand, then the layer of nuts, which may be either one or several nuts in depth, according to the available space. The nuts are then covered with three or four inches of sand, which should be washed down thoroughly between the nuts by means of a stream of water. The whole bed will thus be in a well soaked condition by the time it is done. Instead of placing the nuts directly in the bed, it is more convenient in getting them out to put them in shallow wooden boxes or flats, imbedding these in the sand as above described. If this is done it is much easier to get the nuts out for planting than if they are placed directly in the sand. Other materials may be substituted for sand, such as earth mixed with fine straw or manure, or any substance which holds moisture well, and from which the nuts can be easily removed. The bed should be so arranged that water will drain away from it and not accumulate sufficiently to rot the nuts, and it should be protected from rain if there is any danger of such an effect from that source. The nuts need to be constantly well moistened, however, to start germination, and if drainage is good there is not much danger of getting them too wet. The bed should be located in a place where it will receive the heat of the sun in order that it may not be too cold for germination, and it may be underlaid with manure if it is desirable for any reason to hasten the sprouting of the nuts. Nuts of the different species vary quite widely in respect to freedom of germination, those of the Southern California black walnut being especially quick to sprout. These also rot more easily than other black walnuts. They need not, therefore, be put into sand so early and should not be kept as wet as Northern California blacks or Royals. The latter especially need much moisture and warmth to make them sprout. For prompt and uniform germination they should be put into the sand quite early, in a single layer of nuts, and be kept well moistened and as warm as possible. Otherwise many will not sprout until the second or even third year, if they be put into the ground before starting to germinate."

As soon as the nuts are sprouting or starting their growth they may be carefully transferred to nursery row.

Killing Dodder

Noting your remarks on the destruction of dodder in alfalfa, I would like to give my experience, as it may aid someone. Dodder appeared in a patch of alfalfa which I was raising for my chickens. Having no blast torch and not wishing to search for one for so small a job, I sprayed the infected alfalfa plants and the dodder with a strong salt brine. It killed the dodder effectually while with the next cutting the alfalfa in that spot came on in good shape.—Subscriber, Anaheim.

Immense Peach Stock

What kind of root could peaches be budded on that is or would be immune to nematodes?—J. D. H., El Cajon.

We know of no stock that is more nearly immune than the others that are used for peaches and can find no one who does. Very little, if any, work has been done along the line of re-

sistant stock investigation, and from a knowledge of the stocks available we would venture the opinion that little difference will be found in the sorts used for peaches.—E. B.

Making Sorghum Syrup

Would like to know if there is a bulletin printed on how to make sorghum molasses. If so, where could one get one?—Subscriber, Escondido.

Write College of Agriculture, University of California, Berkeley, and ask for Circular 198, "Making Syrup from Sweet Sorghum."

Seed Wheat

An inquirer wishes to know as to planting wheat grown on his own place for past two years. The question was referred to Geo. McLeod of the agricultural department of the Sperry Flour Co., and he answers: "If the inquirer is satisfied with the variety of wheat he is sowing, and if it is free from smut and withered grains, nothing would be gained by exchanging it for other wheat. Any variety

of wheat can be made better by selection and grading. All seed wheat should be cleaned in order to remove the immature kernels and foreign grains. If this system is followed out from year to year a variety of wheat will gradually become better even though it is planted on the same soil."

EXODUS OF MEXICAN LABOR

A consular report from Mexico states:

"One manifestation of an awakened spirit in the peon class has been a steady exodus of laborers with their families to the United States during 1918 and 1919. This movement now (March, 1920) has assumed such importance as an economic problem that the government is concerning itself with ameliorating industrial conditions in favor of this class of people."

A vacancy in the office of deputy county horticultural commissioner of San Luis Obispo County calls for examination of candidates. Harold E. Allen is commissioner of that county.

ANNUAL OF LEMON MEN'S CLUB

(Continued from Page 395.)

cellence of its organization manifest in its frost fighting equipment and the methods of going into action when the need comes.

On the ranch there are some 400 employees to care for the 390 acres of 27 year old and 550 acres of four to 12 year old lemons, 75 acres of 20 year old and 160 acres of 30 year old walnuts.

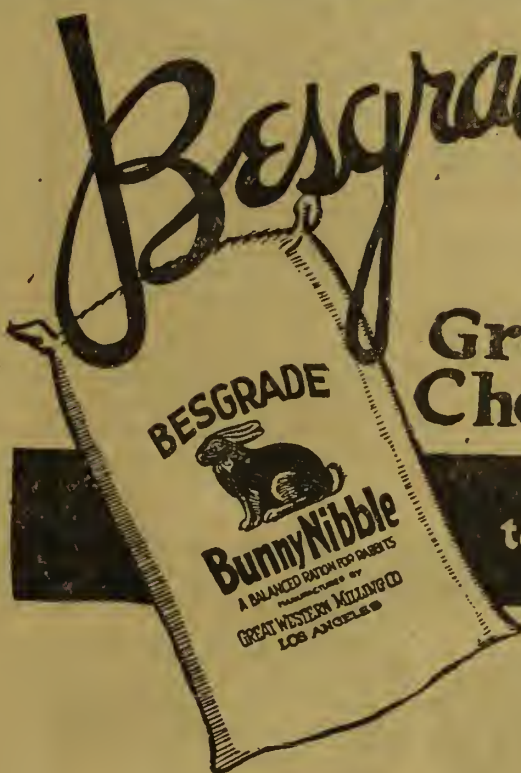
But the lemon grower who took in all the lessons of a great day of practical talks in practically managed orchards by practical men will not be able to put all the lessons into practice at once; neither can the poor newspaper man who would tell all of one great day in one short story.

The California Cooperative Canneries, with headquarters at San Jose, advises that the application for a complaint against that concern to the federal trade commission has been investigated and dismissed.

Besgrade Bunny Nibble

Grows Rabbits Cheaper & Better

these testimonials prove it



ROLLED barley and alfalfa will grow good rabbits, but Besgrade Bunny Nibble will grow bigger and better rabbits in much less time and at less cost per pound.

Besgrade Bunny Nibble costs more than rolled barley, per pound, but is much cheaper per unit of digestible nutrient.

It is a "Clean and Good" feed, containing just the correct amount of protein, carbohydrates, fat, etc., in the most digestible form to insure the most rapid and healthy growth. It is especially good for feeding to nursing does.

More care and science in feeding rabbits should be the aim of every rabbit breeder. It will not take long to prove that such methods are more profitable than haphazard methods of feeding unbalanced rations where the rabbit gets more of one food element than it can assimilate and not enough of another.

If the same care in feeding balanced rations were followed as is used in breeding pure bred more profit would result.

Years of experience in the manufacture of balanced rations is back of Besgrade Bunny Nibble. It is a feed you can absolutely rely on because it is guaranteed.

Trial Offer

For the convenience of rabbit breeders who are unable to secure Besgrade Bunny Nibble from their local dealer, we will ship by parcel post a 25-lb. sack for \$1.60, or a 10-lb. sack for 75c, f.o.b. Los Angeles. Postage will be added and feed shipped C. O. D.

If your dealer can supply you your price would be lower, as he does not have to collect for postage or handle for mailing.



Great Western Milling Co.

Los Angeles, Cal.

GREAT WESTERN MILLING CO.,
956 McGarry St.,
Los Angeles, Cal.

Gentlemen: Please send me one

.....(size of sack) sack of

Besgrade Bunny Nibble for \$.....
It is understood that postage will be added to this cost and feed sent C.O.D.

Name

Address

.....

.....

.....

Sugar Beet Growers

SUGAR beet growers from various sections of California gathered in Hilgard Hall, Berkeley, last week and discussed possibilities of greater development of sugar beet growing or, as stated by the farm bureau which called the meeting:

"The general purpose referred to a more comprehensive development of the sugar beet growing industry of the state, the need for a departmental organization of growers, a better understanding of economic conditions affecting the sugar beet industry, the acquiring of highest grade beet seed supply, and more uniformity and equity in growers contracts. Attention was called to the fact that growers in Utah, Idaho and Colorado beet raising sections were successfully cooperating for better growers contracts with sugar companies and that ultimately an interstate organization among growers might be expected. The interest of the California Farm Bureau Federation in the beet growing industry, it was explained, referred primarily to the giving of service which would enable growers to get together for the betterment of the industry in all its phases.

Professor R. L. Adams of the division of farm management addressed the conference on the general subject of production and conditions under which growers in the state are operating. A review of growers contracts in force in the state was presented, together with comparisons on returns to the farmer.

During the discussion the following chart was presented on the blackboard. Based on existing contracts in the state, this chart compares returns per ton for beets to the grower in different sections of the state. For convenience two grades of beets are considered (beets containing 15 per

cent and 20 per cent sugar), and a scale of two prices (10 cents and 15 cents per pound) of sugar presented. The figures in the chart columns indicate the returns per ton received by the growers under the different forms of contracts.

	Sugar in Beet 15 per cent.		Sugar in Beet 20 per cent.	
	Price of sugar per lb. 10 cents	15 cents	Price of sugar per lb. 10 cents	15 cents
Southern California Factories.....	\$13.33	\$19.16	\$17.77	\$26.65
Union Sugar Company.....	10.00	15.00	10.00	15.00
Spreckels Company	10.00	15.00	13.00	18.00
Alameda Company:				
Outside sliding scale.....	10.75	15.75	13.50	18.50
Outside flat rate.....	9.50	9.50	9.50	9.50
Local sliding scale.....	10.00	10.00	13.00	13.00
Local flat rate.....	11.00	11.00	11.00	11.00
Utah-Idaho Sugar Company.....	13.33	18.01	17.78	26.68

Without discussion in detail it will be noted that for the same grade of beets material difference in price is often obtained by the grower at the present time.

Following the address by Prof. Adams a general discussion of prevailing contracts and practices ensued. Among other matters the discussion indicated:

(a) That growers preferred payment for beets on a sliding scale based on sugar content in the beet and the variable price of sugar.

(b) That scale weight at delivery points was desired in preference to weighing of beets in cars.

(c) That growers' sugar testing laboratories were desirable to better learn field and selling conditions.

(d) That effort should be made for using uniformly clean and viable seed and seed free from morning glory and obnoxious weeds.

(e) That more uniformity in wage

scale for standard culture operations be sought.

(f) That information for growers be obtained with reference to European sugar supplies and stock on hand.

(g) That departmental organization properly financed be perfected in counties through the county farm bureau and through the state farm bureau federation.

(h) That a uniform growers contract for the state be presented.

The following resolution was presented by Mr. Dougherty: Moved that the secretary request an immediate investigation by the American Farm Bureau Federation relative to the status of sugar production in beet sugar districts of Europe for the year 1921. Duly seconded and carried.

The following resolution was adopted by the conference: "Moved that this body be and represent the beet growers department of the farm bureau and that it take charge of the beet growers' interest, draw up a beet growers' contract, and be retained and held together until county and state organizations of sugar beet growers are fully perfected, and that other counties not now represented be solicited to have representation and take part in all activities."

The conference then took up the consideration of a uniform growers' contract for the state, special consid-

eration being given to sliding scale contracts in force in Southern California. It was duly moved and carried that the contract form in present use by the American Beet Sugar Company be adopted with the following modifications and additions:

Paragraph 2 of the contract to read as follows:

2. Recleaned seed free from obnoxious weed seeds and of not less than 80 per cent germination, will be furnished by the company at — cents (\$—) per pound, and none other shall be used. Seed furnished by the company shall not be planted upon any land not covered by this contract; and seed furnished and not planted shall be returned in good order to the company and the grower credited therefor.

In paragraph 4 of the American Beet Sugar Company contract the word "Southern" be eliminated.

An added paragraph 10 to be inserted as follows:

It is mutually agreed that for the support and maintenance of the—county farm bureau beet growers department there shall be deducted by the company an annual assessment charge in the sum of 5 cents per ton on all beets delivered by grower and such sum after deduction shall be paid into the treasury of the—county farm bureau beet growers department. (Any sums deducted as above and remaining in the treasury at the close of the season of 192—, shall be prorated to the grower on the basis of tonnage of beets delivered.)

An added paragraph 11 to be inserted as follows:

Disagreement between growers and factory in the fulfillment of this contract or any portion thereof shall be arbitrated between duly appointed representatives of the—county farm bureau beet growers department and factory representatives.

It was moved by Hart that the American Beet Sugar Company contract as above reviewed and amended be the contract form adopted as expressing the sentiment of the committee (conference) present, and that a committee be appointed to take up the acceptance of this contract by the American Beet Sugar Company at Oxnard, and also get into touch with other beet sugar companies for its acceptance and adoption by such companies for the 1921 season. Motion duly seconded and adopted.

The chairman upon recommendation of delegates appointed the following committee: Fred J. Hart, Salinas; Chas. Donlon, Oxnard; A. W. Haley, Newark; Alex. Main, Lompoc; Clarence Dougherty, Artesia.

W. H. Heileman presided at the sessions of the conference.

POTATOES AND COVER CROPS

By Ernest Branton

TIME was when potato growers produced two crops a year in the same soil. The first crop was planted in March, harvested in late June or early July, cured for a few weeks and replanted (from spring seed) in July or August. Of late years they have found double crops do not pay so well as single crops alternated with cover crops.

Some plant an occasional field to alfalfa and allow it to grow from two to five years before turning under. The next year potatoes do not seem to be specially benefited but in the second and following years the alfalfa shows its value. In sewer farm districts more fertilizer is not often needed and rye is grown for the humus it adds to the soil, surpassing in this respect any other cereal crop. On the Oleson potato fields near Van Nuys in the San Fernando Valley, and the McSweeney fields near Alhambra in the San Gabriel Valley, a winter crop of Melilotus Indica is the main reliance, though other crops are somewhat used and some experimental work is carried on each year.

On the McSweeney ranches over 400 acres will be put in melilotus beginning about the first of September and continuing as fast as available water supply will allow soil to be brought into proper condition. All cover crops have been proven of value to succeeding potato crops. Rye has brought good results but melilotus is favored because more succulent and therefore more quickly assimilated. Not all the

9-16 Heider 12-20

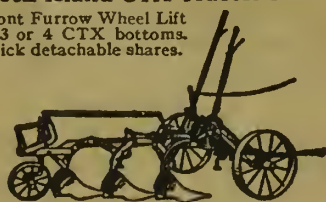
Model D
9-16
with Rock
Island No.
9 Power
Lift Plow.



Rock Island
No. 38 One-Man
Tractor Disk



Rock Island CTX Tractor Plow
Front Furrow Wheel Lift
2, 3 or 4 CTX bottoms.
Quick detachable shares.



Everywhere you will find the Heider solving the shortage of man power on the farm. Thousands of Heiders have worked every kind of soil in America and a score of foreign lands. A ready power for plowing, disking, harrowing, seeding and harvesting. A dependable belt power for silo filling, operating threshers, etc.

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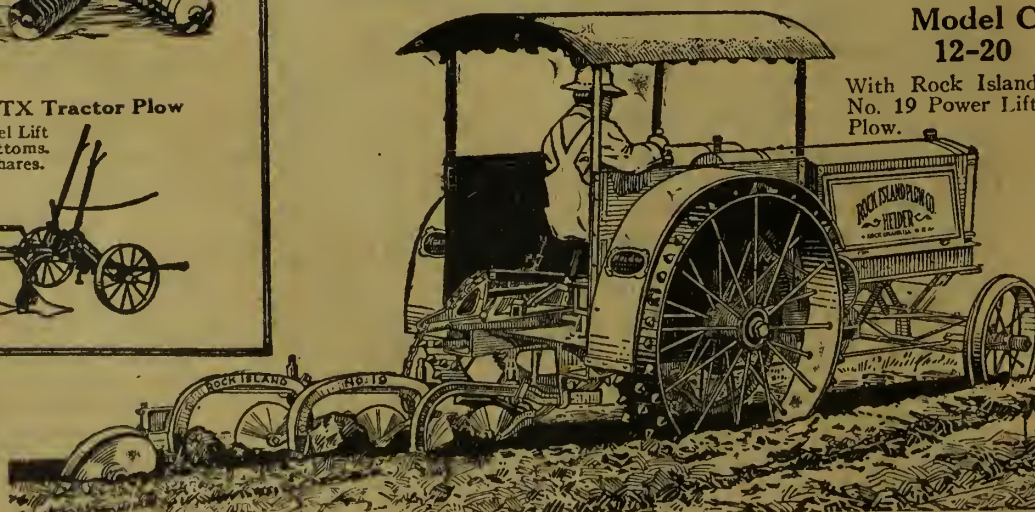
That's the big record of performance back of the Heider—your assurance of a reliable, economical tractor—12 years' success in the field is your guarantee.

No Clutch, Transmission Gears or Bevel Gears

Famous Heider friction transmission eliminates these gears—it means no expensive gear-stripping—all three units are in one—15% to 20% fewer parts. With the Heider friction drive there is no jerking, no jumping, no vibration. It is a steady power—like electric power. Gives 7 speeds forward and 7 reverse, all with one motor speed and one lever for traction or belt.

Model C
12-20

With Rock Island
No. 19 Power Lift
Plow.



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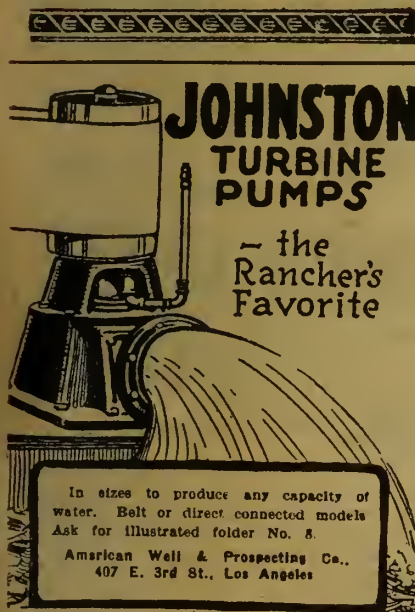
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(California)

*A grade
for each type
of engine*



cover crop acreage noted goes into potato fields for much of these ranches is in citrus orchards, but melilotus in September is the program throughout. All cover crops are supplemented with commercial fertilizer. One alternating crop, tried for the first time this year, is a variety of corn known as "Eureka Ensilage." Up to present date it has made the largest growth of any yet tried on this ranch. The potato grower does not rush the season with cover crops for Mr. McSweeney says his best crops of White Rose potatoes come each year from planting from March 15 to 30, surpassing in both yield and quality those planted earlier. This year the summer planting began July 19.

COTTON QUARANTINE STRENGTHENED

(Continued from Page 397.)

of agriculture disinfects an average of 90 cars per month, live steam being the method used in disinfecting.

The possibility of the introduction of cotton pests through the medium of second hand gins and cotton harvesting machinery was considered, and these commodities will only be admitted to California under very strict measures of disinfection. Second hand cotton picking bags and burlap that has been used in any connection in the ginning or manufacture of cotton or cotton seed by-products were shown to be a material danger to the cotton industry, and will be prohibited entrance to California. The bringing into California of emigrant movables by train or automobile was admitted to be a menace and measures were adopted for close inspection and, if necessary, disinfection of these articles.

That there was keen interest in the meeting was evidenced by the number and prominence of those present in the different branches of the cotton industry, all of whom indorsed the action taken.

The several cotton interests were represented by H. B. Atha of the Arizona Egyptian Cotton Company; Ralph Murphy, a Salt River Valley cotton grower; W. H. Knox of the Arizona Cotton Growers Association; S. H. Hastings of the Southwest Cotton Company; A. F. Osterloh of the Goodyear Tire Company; E. M. Fowler and A. W. Turner, cotton brokers; K. D. Oliver, manager of the Imperial Valley Growers Association; W. E. Keller of the Globe Mills; and Geo. P. Clements, manager of the agricultural department of the chamber of commerce.

The state of Arizona was represented by E. W. Hudson, chairman of the commission of agriculture and horticulture, Andrew Kimball of the commission of agriculture and horticulture, and Don C. Mote, state entomologist of Arizona. Lower California was represented by O. A. Pratt of the federal horticultural board.

California was represented by G. H. Hecke, director of agriculture; Frederick Maskew, chief quarantine officer; L. A. Strong, deputy quarantine officer; C. H. Vary, deputy quarantine officer; Harry S. Smith, entomologist in charge of pest control, and D. B. Mackie, field entomologist. F. W. Waite, county horticultural commissioner of Imperial County, represented the county of Imperial. Harold Pomeroy of the Kern County horticultural commission represented Kern County, and W. B. Camp the U. S. department of agriculture.

BULLETIN ON ALFALFA CATERPILLARS

A new farmers' bulletin of more than ordinary interest to Southwest farmers is Farmers' Bulletin No. 1094, "The Alfalfa Caterpillar," written by V. L. Wildermuth, entomological assistant, cereal and forage insect investigation. Mr. Wildermuth has been located at Tempe, Arizona, for a number of years and is probably more familiar with the insect pests which feed upon Arizona crops and plants than any other man in Arizona. The yellow butterfly or alfalfa caterpillar is the most destructive alfalfa enemy that Arizona farmers have to contend with. This bulletin, which represents the study of this insect for a period of several years, is of much value. It may be obtained from the U. S. Department of Agriculture, Washington, D. C., upon request.

FAIRBANKS SCALES



*Your Weights Measure
Your Farm Profits*

THE RESULT of your every day work, be it much or little, is valued upon your farm scale.

Every cent of money—every minute of time—each ounce of energy—put into your work finally is checked by your scale.

Important to have an accurate Fairbanks Scale for wagon and stock use!

For 90 years Fairbanks Scales have been the world's standard of accuracy—a prestige maintained by quality built in at the factory.

Easy to install—at small cost. Once present, this scale becomes the standard in your neighborhood by which all other weights are judged.



Make Your Fruit Trees Bear to Capacity

Fruit growing is no longer a matter of chance. Experience has shown that when fruit trees are fed right they bear to capacity.

Bradley's Standard Fertilizers

"THE WORLD'S BEST BY EVERY TEST"

give your fruit trees the plant food they need for greatest production. They help to produce a heavy set of fruit and the new wood needed for the next crop. They keep the fruit growing.

Get the benefit of our sixty years of experience by using Bradley's Fertilizer.

See our local agent for further information or address

The American Agricultural Chemical Co.

P. O. Box 675 CALIFORNIA WORKS Los Angeles, Calif.

Our works at Nadeau Park are the most complete Chemical Fertilizer works west of the Mississippi.

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

The Los Angeles Show

Details of the program of the great Los Angeles Livestock Show will be given in our next issue. Judging dates, even the hour at which judges will be working in their different classes, will be given. That number will not only give details of the judging of livestock but of events at the kennel show, rodeo, milk goat, poultry and rabbit exhibits. The show will contain the finest collection of animals

yet gathered in the Southwest. As a bit of advance information we may say that on opening day, Saturday, October 2, the rodeo, horse racing and amusement events will all take place in front of the grandstand. Sunday there will be a parade of livestock with all barns and grounds open to the public.

Monday, October 4, judging will begin on Holsteins, Aberdeen-Angus,

Guernseys, Percheron horses, saddle horses, Tamworth and Yorkshire swine and milk goats.

Judging dates and hours for Tuesday and other days will be given in detail. There will be pages which will make the Cultivator of almost equal worth with the regular program to be distributed on the grounds. Livestock judges appointed to date include:

Beef cattle, F. W. Van Natta, Fowler, Indiana; dairy cattle, Prof. H. H. Kildee, Ames, Iowa; horses, Prof. E. A. Trowbridge, University of Missouri, Columbia, Missouri; Jersey and Ayrshire cattle, Geo. E. Platt, Los Angeles; Duroc-Jersey, Berkshire and Poland China swine, Prof. J. I. Thompson, Davis; sheep, Hampshire and Tamworth swine, C. R. Doty, Los Angeles; goats, C. H. Bowman, Los Angeles. Poultry judges include E. E.

Emerson, Burbank; Guy Goodacre, Compton; J. L. Harrison, Pasadena. Louis Salisbury, Pasadena, judges rabbits. Pigeon judges are J. H. Blumenburg, Huntington Beach, and R. W. Wales, Altadena.

Thirty boys and girls pig clubs have entered their swine. There has been a special barn provided for pig club displays, which will be in charge of farm advisers. The youngsters will exhibit Duroc-Jersey, Berkshire and Poland China pure breeds and a number of fat swine.

Exposition Park is easily reached from all parts of Los Angeles. The automobile entrance is from Figueroa Street. Free parking space is provided for several thousand machines. Numerous five cent street car lines run from all railroad stations to the show grounds. General admission to the show is 50 cents.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

October 19-21, A. J. Stalder, Riverside.

Herefords

November 4, Pacific Coast Hereford

Breeders' Association, Sacramento.

November 5, J. H. Cazler & Sons, Sacramento.

November 6, H. M. Barngrover, Sacramento.

November 18, Finner Ranch Company, Sacramento.

Shorthorns

September 30, Wilotta Ranch, Suisun.

Poland Chinas

September 27, Hugh C. Shinn, A. J. Elliott and Alex D. McCarty, Tulare.

October 6, Kings Co. Poland China Breeders Assoc., Hanford.

Berkshires

October 8, Southwestern Berkshire Congress, Exposition Park, Los Angeles.

Duroc-Jerseys

October 27, E. Avery Newton, Lankershim.

General Livestock

September 15-18, Chas. L. Schufeldt, Mgr., Owensmouth.

One of the new factors in the up-building of Durocs in California is found at the William V. Mong breeding establishment at Whittier, and known to the swine breeding public as "Your Duroc Farm." Mr. Mong has entered the pure bred swine breeding field with the fixed determination, first of all, to cater to the wants of his neighbors and their neighbors. At the head of this herd is the junior yearling boar My Pattern, sired by Col. Cherry King, first prize aged boar at the International, 1919. On August 24 he measured 68 inches length, 38 inches height, 64 heart girth, 66 flank, and tipped the scale at 545 pounds. Three of the leading sows are safe to his service for fall litters. Prominent among the brood sows are Great Wonder's Belle, daughter of Great Wonder. A young boar and gilt of her March 17 litter, sired by Winsor's Giant Orion, are slated for exhibition at the fall fairs.

One of the features of Duroc interest at the state fair was the banquet given by the state Duroc Breeders Association for its members and a limited number of guests. Plans were discussed for general promotion work and much enthusiasm aroused. With the capable assistance of Field Secretary Anderson, the Duroc breeders are in line for great advancement in the near future. At their business meeting V. F. Dolcini, Davis, H. C. Witherow, Live Oak, and H. M. Berglund, Dixon, were elected directors for the northern district. The central district will elect three directors at a meeting to be held during the Fresno fair. The three directors for the southern district will be elected during the week of the Los Angeles fair.

Bassett Bros., Hanford, won at the state fair the two silver cups offered on Poland China barrows and the silver coffee set for greatest number of futurity ribbons. Hugh Shinn, Tulare, won silver trophy offered by the Poland China Journal for the best four gilts under one year bred by exhibitor.

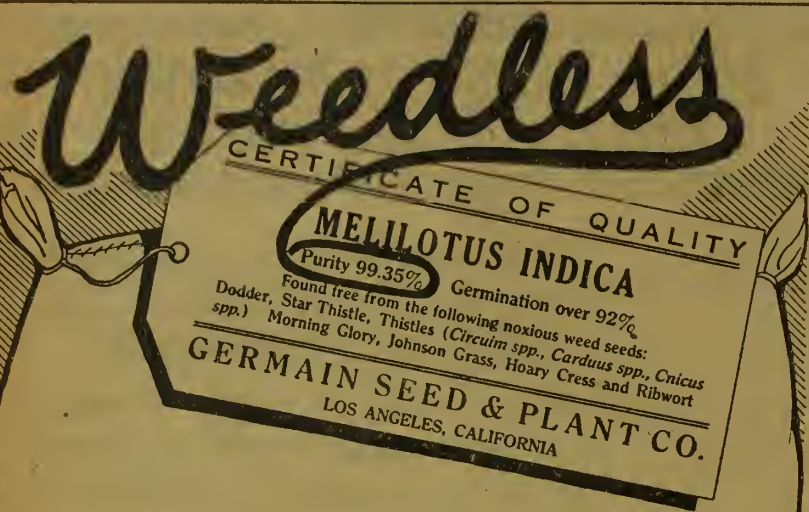
Plans for the auction sale of prime cattle at Cottonwood are being held in abeyance awaiting the arrival from the mountains of various herds. Some of the cattle in this section are a little late in their return to home ranges,

and it was deemed advisable not to attempt a sale at this time with the stock available. J. E. Hewston, field representative of the California Cattlemen's Association, called a conference of stockgrowers of the Cottonwood district and it was unanimously agreed that the entire plan of auction sales of prime cattle was on trial in California and that success was impossible unless really fat cattle were put up at auction. Mr. Hewston pointed out that buyers would soon cease going to such auction sales if feeders and dairy cattle were put in as has been the case in some recent sales.

Encouraged by the success of their recent public sales of registered Berkshire breeding stock, the Southwestern Berkshire Congress is announcing a bred sow and open gilt sale for Thursday, October 7, at Exposition Park. This offering is of a character to interest the breeder, the pig club boy or the rancher.

In this sale are 215 bred sows, selected because of their useful character and coming from established herds with a reputation to be kept up through their offerings at public and private sale. The ten younger gilts to be sold open are excellent material for boys pig club work or for being developed into good brood sow material for well established herds. A breeder's guarantee goes with every animal in the sale.

Announcement is made of a combination sale of breeding stock from the well known herds of E. Avery Newton at Lankershim and H. Christiansen at Arlington. For the con-



No danger of raising a crop of weeds when you plant Germain's high-test Melilotus Indica seed. Each bag carries a certificate of quality, a replica of which is shown above.

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POMONA—Western Wholesale and Brokerage Co.

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EXETER—D. H. Rowland

RIVERSIDE—E. L. Koethen

SANTA ANA—Newcom Bros.

ANAHEIM—Anaheim Feed & Fuel Co.

FILLMORE—Fillmore Wholesale Co.

SAN DIEGO—Harris Seed Co.

WHITTIER—L. Landreth & Co.

ORANGE—T. L. Faris

REDLANDS—Redlands Oil Co.

VAN NUYS—Van Nuys Feed & Fuel Co.

COVINA—San Gabriel Valley Milling Co.

SAN JOSE—Arthur Cann



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Ideal Orchard CULTIVATOR

Few implements are used more in California than the Orchard Cultivator. Davenport's Ideal represents sturdiest construction, light draft and rigid framework. Either spring tooth or rigid standard. Not a horse killer, but a real implement with no waste material or dead weight.



DAVENPORT'S

Riding Attachment For Walking Plows

You can make a riding plow out of any steel or wood beam walking plow by attaching the Ideal. We have both walking plows and attachments in stock.



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DR. HESS
Instant Louse Killer
Kills Lice

For Use On Your Poultry

Seize the hen and dust Instant Louse Killer into the feathers. The handy sifting top can make it convenient to use. Sprinkle it in the nests, on the roosts and floors. Put Instant Louse Killer in the dust bath occasionally—your hens will do the rest. This means louse prevention.

FOR STOCK

With one hand stroke the hair the wrong way, with the other sift in the Louse Killer. Especially good for lousy colts.

GUARANTEED. The dealer will refund your money if it does not do as claimed.

1 lb. 30c, 2 1/2 lbs. 60c (except in Canada)

Dr. HESS & CLARK
Ashland Ohio

venience of the buying public the sale is to be made at Pomona at the Lookingbill and Vezey Union Sale and Stock Yards, with Col. W. C. Lookingbill in charge. The sale is to be made on October 27, and is to be featured as "a pre-breeding season sale." It will consist largely of yearling and two year old tried sows and promising gilts of breeding age and representing standard big type blood with first prize and grand championship honors to its credit.

Guy H. Miller of Modesto reports Register of Merit tests recently completed by Gladys of Venadera and Signora of Venadera, both daughters of his old herd sire, Altama Interest. Gladys of Venadera produced 508 pounds and Signora of Venadera 525 pounds of butter fat in the year. Both cows were milked but twice daily and were with the milking herd throughout the year.

CONSIGNING TO NATIONAL DAIRY SHOW

Toyon Farm Association is consigning ten remarkably strong individuals to the dairymen's sale to be held in conjunction with the National Dairy Show at Chicago in October. This show is the greatest event in the dairyman's year. The Toyon consignment is headed by Sir Pietertje Ormsby Mercedes 43d, senior herd sire and the only bull enjoying the distinction of having been bred to three 30,000 pound cows. A young bull sired by Chima-cum Spring Farm King Pontiac and from a first prize junior four year old cow with a ten months record of 904 pounds of butter, completes the male entries for the sale. The eight females consigned include a two year old daughter of Sir Pietertje Ormsby Mercedes 43d, two two year old daughters of Sir Korndyke Ormsby Piebe—one finishing her year with better than 900 pounds of butter and the other with better than 800 pounds, both from over 20,000 pounds of milk; a remarkably large two year old daughter of Sir Johanna Ruth Fayne, sire of the present holder of the world's record for one day's milk; a four year old cow with 703 pounds butter made in 268 days to date of her present long time test; a five year old with 900 pounds butter as a junior four year old now finishing her year with over 1,000 pounds butter.

DAIRY CATTLE CONGRESS

The eleventh annual dairy cattle congress will be held in Waterloo, Iowa, next week, September 27 to October 3. This congress was established for the express purpose of advancing the best interests of dairying and the breeding of dairy cattle.

Entries in the five dairy breed classes have been received from Montana, Indiana, Michigan, Missouri, Texas, Kansas, Ohio, Illinois, Iowa, Minnesota, New Jersey and Colorado. Many other states will be represented when the final entry date arrives.

Judges are: Jerseys, Prof. J. A. McLean of the University of British Columbia.

Ayrshires: L. S. Gillette, Fostoria, Iowa.

Brown Swiss: Howard C. Barker, secretary of the Ohio Holstein-Friesian Association.

Guernseys: Prof. J. B. Fitch of the Kansas state agricultural college.

Holsteins: C. H. Davis of Yakima, Washington.

LEGISLATIVE COMMITTEE

The agricultural legislative committee of California met recently in Sacramento and determined as to a number of measures or provisions in the legislation to be recommended. The committee definitely and emphatically condemned the single tax measure and the anti-vivisection movement. The alien land law report was deferred until a meeting to be held in October. A committee to investigate as to budgets of the college of agriculture, state department of agriculture, state board of agriculture, state board of forestry, superintendent of weights and measures and market director, was appointed. This committee consists of George W. Pierce, Fred Bixby, Aaron Sapiro, L. B. Scott and J. L. Nagle.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Embargo on Gasoline

Could the United States put an embargo on the exportation of gasoline and distillate to protect the farmer, tractor, truck and automobile user?—Subscriber, Pasadena.

The constitution of the United States provides that congress shall have power to regulate commerce with foreign nations and among the several states and with the Indian tribes. Under this clause it was determined by the United States supreme court very early in the history of the nation that every subject falling within the legitimate sphere of commercial regulation may be partially or wholly excluded from foreign commerce when such may be demanded by the safety or by the important interests of the entire nation. It is within the legislative discretion as to what it may operate upon.

Cattle Mortgaged

Children by a former marriage give their mother certain cattle. Her second husband mortgages these cattle without her consent or signature. Is the mortgage valid?—Subscriber, Jamestown.

The cattle are clearly her own separate property and the mortgage placed thereon is invalid unless she by some means estops herself from claiming its invalidity. Such means in the case of the bona fide mortgagee would consist in permitting the mortgage to remain without taking any action to remove. She should promptly notify the mortgagee of the true ownership of the property and that she does not consent to the mortgage, so as to allow him opportunity to regain his money.

Damage from Eucalyptus

What is the rule regarding eucalyptus trees along adjoining property? There is a line of trees adjacent to my walnut grove, which unquestionably acts to the detriment of my property. What, if any, is my remedy?—Subscriber, Los Angeles.

It has been held in several cases that such trees constitute a nuisance for which two remedies are available. Either cut off the roots by digging a trench along the line of your property or bring action to enjoin the owner of the eucalyptus trees from permitting the roots to extend into your lands.

CALIFORNIA AS A BOXED APPLE STATE

By F. W. Read, California Standardization Service

Few people realize the importance of California as a boxed apple state. Of the total number of cars shipped in 1919 California ranked second, Washington being the only state in the Union to exceed it. According to the federal bureau of markets, California was followed in the number of cars shipped in 1919 by Oregon, Idaho and Colorado in the order named. From Washington 19,760 cars of apples were shipped in 1919, and of this number 2,257 were taken by New York City and 1,366 by Chicago.

The bureau of markets, over a period of years, has been compiling the number of carloads of the principal fruits and vegetables unloaded at the large market centers of the country. This information is very valuable as indicative of the consuming capacity of the larger terminal markets. The figures show that California shipped 4,147 cars in 1919 and of that number 539 cars were unloaded at New York City, or about 76 per cent of the California apples unloaded at the ten principal market centers of the United States. It would seem, therefore, that New York is by far the most important outlet for California stock. Chicago received 66 cars of California apples in the same year, Cincinnati 31, St. Louis 24, Philadelphia 21, Pittsburgh 16, and Kansas City 12.

California is a more important apple state so far as volume is concerned than is Oregon, Idaho or Colorado. This fact emphasizes the importance of proper standardization work. If our stock is going to meet the sharp competition from other states it is essential that apples moving out of California be graded strictly according to the California standardization law and that every car maintain the reputation of this state for quality, grade and pack.

CALIFORNIA PEARS O. K.

Because there is lime in various spraying solutions, especially those carrying arsenate and sprayed on pears in the codling moth campaign control, some inspectors of the federal department of agriculture have felt that the discussion aroused called for condemning some pears which were entirely harmless. Director Hecke made a trip East to get a line on marketing conditions, the requirements of the U. S. department and the Eastern trade. The state department is now cooperating officially with several branches of the federal department and even closer cooperation will result from conferences which have been held.

Among other matters which came up for consideration at a joint conference between the secretary of agriculture, the chiefs of the various bureaus and the director of agriculture of California was the question of pest control as carried on in this state. It developed that some objection had been raised in one or two receiving markets in connection with the spotted appearance of the fruit as the result of spraying for the control of codling moth. This spotted appearance is largely due to the use of a lime spreader on the fruit. In order to maintain the confidence of the Eastern markets it was agreed as essential that all fruit present as clean an appearance as possible upon reaching the consuming market.

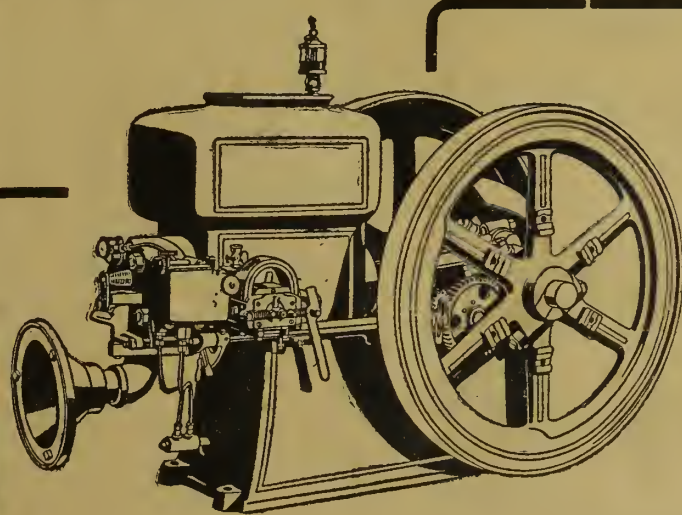
FROGS

One of the perplexing features of prune drying which every prune grower has to confront is the fact that a small percentage of his dried prunes prove to be "frogs." A writer in the San Jose Mercury, A. W. Hudson, discusses method of lowering this percentage as follows:

Each prune drying season brings up again the same old question of "frogs" (or "bloaters" or "chocolates"), and also the time honored admonition from the wiseacres to "keep the water boiling and have the dip very hot." I have seen acres of these hot dipped prunes, and every prune a "chocolate." This condition is simply the effect of too high a temperature in the dip, which coagulates the juice just under the skin of immature prunes, encasing the fruit in a film of dark brown jelly, thus hermetically sealing it and effectually preventing evaporation of the interior juices, which soon ferment, and the result is "frogs" or "bloaters."

For proof of the above, break the skin of any "chocolate" prune which has not had time to ferment, and you will plainly see the brown film just underneath. Cut a little deeper and you will find the flesh of the prune in a clear, natural condition, but, being sealed by the film, it will soon ferment and the prune is spoiled.

A caustic dip at the scalding temperature of 160 degrees will suffice to remove the bloom and check the skin (the entire benefit of any dip) and will not injure the prunes. Even green prunes thus dipped will dry and not bloat. With a thermometer it is not difficult to regulate the temperature, not nearly so difficult as to regulate the people with whom old errors persist. The pity of it is that hundreds of tons of prunes are spoiled and thousands of dollars unnecessarily lost through persistent ignoring of these simple, easily proven facts.



Hercules Engines

ANNOUNCEMENT:—Anticipating your needs we entered our orders early and have just received several car loads of Hercules Engines. For the first time in nearly two years our line of sizes is complete and we will be able to make immediate shipments for a brief period only. Our advice is—Buy now!

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Pumps - Engines - Motors - Machinery - Supplies

LOS ANGELES: 228-238 Central Ave.

SAN FRANCISCO: 50-60 Fremont St.



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LIVE STOCK
SHOW**

**EXPOSITION PARK
LOS ANGELES
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The Greatest Combination of Educational Live Stock Features and Program of Amusement Events Ever Held in Los Angeles in one single show.

**BLOODED Beef Cattle, Dairy Cattle
STOCK Swine, Sheep, Goats
Poultry, Pigeons, Rabbits**

\$50,000 CASH PRIZES AND PURSES

Every Minute Attractions to
Educate—Divert—Amuse

EQUESTRIAN EVENTS—BIG HORSE SHOW—RODEO, Running Race Classics, Kennel Show, Pet Stock Exhibits, Amateur Boxing, Fashion Parade, Trick Riding, Trick Roping, Relay, Hurdle and Chariot Races, Famous Santa Catalina Island Marine Band—Surprises Galore.

OPEN FROM 8 A. M. TO 8 P. M.
ADMISSION 50c.

ALL ROADS DIRECT

Southwestern Berkshire Congress Sale

Sale to Be Held at Exposition Park

Thursday, Oct. 7, 1920

**25 Bred Sows and Bred Gilts
also 10 Gilts of Early Spring and
Summer Farrow**

These offerings are selected from the leading herds of Southern California and are of a character to strengthen Berkshire interests wherever they may go. They represent best of blood lines, they are true to type, and they are guaranteed to be precisely as represented by the individual breeder and by this association of breeders.

GOOD MOTHERS—EASY FEEDERS—MARKET TOPPERS

Remember that a Berkshire sow and litter make a fine foundation for a future business herd.

**Bastanchury
Better
BERKSHIRES**
LA HABRA, CAL.
E. N. WHITTEMORE, MGR.

The boar is 60 per cent of the herd. We showed the 1st prize aged boar at the state fair this year. We have some of his pigs, both sexes, for sale at reasonable prices.

CLARK, HUNTER & CLARK

The Livestock Auctioneers

Sales made any time and any place. Write for sale dates, we can fill them.
Clark, Hunter & Clark Modesto, Cal.

Delayed Fair Notes



TUNNEL was burned out and caved in. Malls came through sometimes two days late. This accounts for a great mass of matter regarding state fair not reaching us in time for last week's paper. Its value as news has passed but there are a number of interesting points made by writers of the Cultivator staff, so we make the best of this delay by giving readers a later look-in at the state's greatest fair. We start with comment on the dairy classes:

DAIRY CLASSES

The Holstein Show, by C. L. Hughes

As a whole the showing of Holsteins may well be rated as one of the best yet seen at Sacramento. A number of the classes hardly showed the strength of the last few years, but the large number of exhibitors, especially owners of small herds, furnished a feature that indicates plainly the widespread interest in the breed. The Holstein judging attracted the largest crowd that has ever surrounded a cattle show ring at this fair, and it was an interested crowd that showed appreciation of the splendid cattle before them.

A feature of the show was the strong representation made by Stanislaus County breeders who had a total of something like 55 head in the various classes, winning a liberal number of top places and contending strongly in other classes.

Reversing the usual custom, the females were shown first, and Judge John L. Smith was called upon to open the show with the class of mature cows. Holmes won first and second handily with Ida Lotta, Winifred Burke and Mona Fobes, there being little to choose between two good ones. Allana Farm's Johanna Homestead Belle was a strong third, with Beeman's entry in fourth place and Davis' entry fifth.

In the three year old class Cornwell showed two excellent heifers that won first and second handily. The first prize winner, Ciruela Walker, showed consistent development since last year when she was first as a two year old. Third place was taken by Bonita Pontiac, the Santa Anita Rancho entry, which did not ship well to the fair and was not showing in her best form.

The two year old class uncovered the strongest class up to this time, and in the first prize winner, the Allana Farm heifer, Josephine Johanna Oak De Kol, furnished the senior and grand champion. This heifer was junior champion at San Francisco last fall and is one of the most pleasing types. She is not a large animal, neither is she deficient in size, and the fact that she has been milking since last January is a point greatly in her favor. Beeman's Bernice Na Dean De Kol was a strong second, with the Santa Anita entry in third place, Holmes' entry in fourth place, and Jane Garden Farm in fifth place with a wonderful heifer that was showing to the greatest disadvantage because near calving.

In the senior yearling class Jane Garden Farm produced an outstanding winner in Jane Garden Dirkje Korndyke, with Beeman's entry in second place, Santa Anita in third and fifth positions, and the Holmes entry in fourth place.

In the junior yearling class Santa Anita Rancho made a clean sweep of the first four places with a group of heifers that would do credit to any show, with Azevedo Bros. in fifth place.

The senior heifer calf class brought a wonderful lot of youngsters, and yet with 27 entries the judge was able to find quickly an outstanding winner in Addie Creamcup Pontiac Burke, owned and exhibited by Clay Stammerjohan of Turlock. This 12 year old boy selected and bought this heifer himself, fitted her, has now shown her four times without defeat, and when he carried her up to the junior championship in this show he received one of the most popular decisions of the entire show and a full measure of applause from the large crowd which had watched him show his heifer like a veteran. Allana Farm was in second place with Higdon in third and

fourth positions with two good daughters of King Korndyke Pontiac 20th, and the Santa Anita entry fifth.

The junior heifer calf class brought out another very strong group in large numbers and top honors fell to the Allana Farm entry, Miss Johanna Ormsby Hengerveld, with Higdon's entries in second, third and fifth places, and the entry of Katie Stammerjohan in fourth place. This girl, sister to the youngster who showed the junior champion, can also be congratulated for winning so high a position in a very large class and showing against veterans in the show ring.

The aged bull class brought out Merci Lad Korndyke Burke, the Santa Anita bull that is widely regarded as one of the best types California has yet produced. Startling with first place in this class, he went up to the grand championship without serious difficulty. Second place went to Cornwell's Sir Johanna De Kol Rag Apple, a bull that has made substantial improvement during the past two years. Holmes was a strong third with Segis Pontiac Abbeckerk, with Scudder's entry in fourth place and Benoit's entry fifth.

The two year old class was headed by Beeman's Dean Fayne Segis, a bull of remarkable size for age and one that promises to develop into an individual of rare excellence. Six Brothers Dairy took second position, with Barry's entry in third place and last year's junior champion in fourth place.

The senior yearling class uncovered the junior champion in Prince Bonnie Walker, exhibited by Higdon. This youngster was no mean contender for grand championship honors. Benoit's entry was second and Holmes' entry third.

In the junior yearling class the Santa Anita entry, the \$41,000 King Korndyke Pontiac Acme, was an easy winner, although the judge had his little joke in this class and had the ring-side talent guessing for a minute or so. York landed a good youngster in second place, with the Scudder and Barry entries finishing in the order named.

The senior bull calves brought a large class of youngsters before the judge, and the Azevedo entry, King Tora Pontiac Prilly, won first place handily over Dean Tule Segis, the Beeman entry. Allana Farm furnished a strong third in Admiral Pietertje Mechthilde, with Santa Anita in fourth place and Allana Farm fifth.

The junior bull calf class was distinguished by numbers and a wide spread in quality between the top and bottom. There were a number of calves in this class that had no place in a show ring, although the money places and down beyond it for several places had a splendid lot of calves. Anderson & Fogarty took first in this class on a well put up calf of real show quality, with Holmes in second place, Azevedo third, Higdon fourth and Davis fifth.

As remarked before, one of the most pleasing features of the show was the large number of exhibitors, and the awards show that the prize winners were quite well distributed through the various herds. A feature of the show was the string of young things exhibited by W. J. Higdon, most of which were the get of the \$12,000 bull, King Korndyke Pontiac 20th. The get of this bull won first in calf herd and first in get of sire, and the second prize breeder's young herd were mostly of his get. This group was a center of attraction all during fair week.

The Guernsey Show, by R. P. Royce

Five herds, including three of the largest owned in California, made up the best showing of this breed in California. The Brant Rancho of Owensmouth was out in full strength with a herd considerably strengthened since last year. The aged bulls could not take the measure of the veteran ten year old, May King of Fern Ridge. This bull is a remarkable example of constitutional vigor. He was champion last year and seems to have improved, at least he won his class and paraded through to the purple. Lollow Hill Farm, Colton, copped off the junior champion with a topy calf that looks to be a good prospect for future honors. The aged cows again bowed

to last year's champion, Princess of Meadowbrook, that carries her 12 years as lightly as many five year olds. Her desirable type and extreme quality carried her by all competition. The junior champion was found in the Junior yearling, Rosie E. King of Hollow Hill Farm. A. B. Humphrey had out a full herd, and while his cattle did not come in for any firsts they furnished plenty of competition for the winners. W. E. Tomson of the University of California made the awards.

The Jerseys

The feature of the Jersey division was the remarkable winning of the Fortini herd. With only seven head he won nine firsts, both grand championships and the senior champion bull. There is a real story back of the Fortini exploit that can't be told at this time. Suffice it to say that this breeder, comparatively a new figure in Jersey circles, having made his first show last year, fairly set the old timers by their ears. It is doubtful if a better fitted lot of Jerseys has been seen at Sacramento in years, and it was largely the superior fitting that won for him.

The aged bull, Dairy Maid's Gay Prince, led all the rest on his type, quality and condition. He is a masculine headed fellow with width and depth, a strong top and a hide that is a delight to handle. Thorp won the senior yearling class and his Biddy's King of Mossdale was later made junior champion. Traynham won the junior yearling class and Fortini took the next two classes.

Fortini's aged cow, Croyden's Estelle Fox, was sent to the top of her class over a strong field. C. E. Barrows was in the lead with his three year old. Fortini had the two year old class, the senior yearling and the senior heifer calf. Barrows had the junior yearling and Miller won the junior heifer class. The judge picked the lovely little calf, Isolda of Tintagel, for junior and grand champion over the aged cow. Miller won the two young herds and the get of sire. He likewise was in front with his five cows.

W. E. Tomson of the university rated the Jersey classes.

The Milking Shorthorns

Five California breeders staged a show of milking Shorthorns that in many respects can be rated as one of the best ever held in the West. Over 60 animals made up the show. A striking feature of the exhibit was the marked dairy type all through the classes. No longer are breeders bringing out individuals that would find favor in some beef shows. One of the most attractive classes of the show, and a really remarkable class it was, was the aged cows. This class was led by the beautiful red Bellevue Daisy, sweetly feminine in front, keen in the neck, fine at the withers, with a straight top and capacious middle. She swung a large udder of fair conformation and excellent quality that was supported by an ample vein system. Her type and quality carried her through to final honors. The junior champion female came from the same herd and was the junior yearling, Gypsy Girl.

Top bull honors went to the same herd on the aged bull, Westward Ho, a bull that shows marked dairy conformation. The junior champion bull was furnished by Thos. Harrison of Santa Rosa in Count Tickford. Alexander and Kellogg and Thomas Harrison divided all the first placings.

John L. Smith of Washington made the awards.

The Ayrshires

E. B. McFarland of Steybrae Farm, San Mateo, was the only exhibitor of Ayrshires and therefore was awarded all places. Next year it is hoped that other Ayrshire breeders will be on hand. This state owns some very excellent herds and splendid promotion work could be accomplished with concerted action.

BEEF CLASSES

The beef classes outshone any former state fair exhibit.

The Shorthorns

The 1920 show was generally conceded to be the strongest ever made at Sacramento. The showing was confined exclusively to California herds

and the nine exhibitors had bred most of the entries. Nearly all of the classes were well filled, but the younger things were out in greater numbers.

The five two year old bulls were led by the red, Imp. Scottish Lord, shown by Glide. He is a bull of scale, with even lines, not overly impressive about the head and hardly as nice to the touch as one would like. The Pacheco entry, Dalmeny Count, a roan, lacked the scale of the winner, but his general setup would have carried him through had he been better balanced from his hooks back. The Blackhawk entry was easily the typeiest bull in his class but was handicapped on age, he being practically a senior yearling. This youngster is a real show bull. He is especially attractive in front, carries himself with style and is one of the smoothest calves that one could wish. Had he carried a bit more finish he would have been the undisputed choice for champion—and there were many who felt that he could have carried the blue with ease and grace. Bond showed a thick, smooth son of Sir Type that had friends for a higher rating.

The senior yearlings were limited to two, Glide's Cheerful Count pleasing the judge over the Dibblee entry. The junior yearlings were topped by the thick roan Ormondale calf. Glide was second with the white, Spicy Count, over Amanda's Dale, shown by Pacheco. Ormondale landed next with a full brother to Little Sweetheart, and Carruthers was fifth.

The senior calves made a particularly good showing. Pacheco was out in front with a beautiful white youngster that had size, smoothness, thickness, quality and balance, coupled with a good front. He was later made junior champion. Glide was second with a roan calf of a bit different type over two cracking good calves shown by Dibblee. George Dierssen, making his first show, was lucky to get his calf placed above the attractive roan, Count Glory Jr. Barring a slight raise at the tail, the sixth calf had little to object to and could very handily have stood several notches higher.

Bond led off the juniors with roan calf of most pleasing type, a deep, thick, soggy youngster put up on correct lines. Dibblee was second over two Murphy calves that lacked the condition of the leaders. The fifth place fell to a late calf that looked small with the others.

Throughout the judging of the bull classes the judge, Professor C. M. McCampbell of Kansas, turned toward those individuals with scale, and on several occasions the ringside felt that he sacrificed type in order to get size. The same idea was carried through the female classes.

The aged cows, shown with calves, yielded undisputed leadership to the wonderful Little Sweetheart. Back again after her sensational career of last season, she appears equal to duplicating her former triumphs. She has matured a bit more and the fact that she is now a matron has in no way left an impression. The judge declared that in his opinion she was 50 per cent better than when at her best last year, and added that she could hold her own in any show. Second rating fell handily to Pacheco Lass 80th because of her scale and thickness over Mayfield Victoria.

The two year old class was one of the strongest of the show. Bond was forward with Ormondale Mald 2nd, a red. She is beautifully fronted, very smooth and even in her lines, with plenty of spread in the crops and carrying her balance throughout. Glide furnished the second rating with Village Lassie, a roan whose scale and thickness appealed to the judge. Blackhawk Roan Lady, of short age, was given third over the extremely thick and deep King's Countess. The last named had friends for second. A full sister to the grand champion and very much like her in front, was fifth.

The six senior yearlings were led by the smooth, well covered roan, Village Rose, shown by Glide. The beautiful white, Pacheco, a winner in her class last year and of rare type, was faulted by the judge on her handling. Glide was third with a red and white over an attractive heifer shown by Carruthers that was hardly as far along as she should have been. The fifth place was allotted to a Pacheco



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100 Milk Cows in This Sale

Their first individual offering will include approximately 100 head of cows and heifers in milk, of splendid type and breeding, many with large official records and out of high record dams. There will also be about 30 bred and open heifers, and about 20 bulls in the sale.

Females Bred to High Record Bulls

The females in this sale are bred to SIR PIETERTJE ORMSBY MERCEDES 43RD, son of Sir Pietertje Ormsby Mercedes and Aaggie Wayne Peep, whose yearly records for five years exceed the total of any other cow; SIR AAGGIE MEAD, son of Sir Aaggie De Kol Acme out of a 1200 lbs. daughter of the 1142 lb. cow Aralia De Kol; a son of the 33 lb. cow Bonnie Lass Pauline; and a 30 lb. son of Johanna Bonheur Champion.

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In this entire offering there are only three cows with blemished udders; no female of breeding age will be offered unless she is believed to be safe in calf; every animal is positively guaranteed to be a breeder; EVERY ANIMAL IS TUBERCULIN TESTED BY A FEDERAL VETERINARIAN AND SOLD SUBJECT TO RETEST BY THE BUYER.

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King Korndyke Pontiac Mead

Average of his Dam and Sire's Dam (Both Former World Record Holders)

At Average Age of 4 yrs. 2 mo. 10 dys.	1062.64 lb. Butter
Semi-Official, 365 Days	21173.75 lb. Milk
Official Test, 7 Days	31.91 lb. Butter
	615.60 lb. Milk

His Sire—King Korndyke Pontiac 20th

His Dam—De Kol of Valley Mead 2d

Four of his seven nearest Dams have held World's Records

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entry that was not as even or level on top as the others.

The junior yearlings did not make as strong a show as was offered in other classes.

The seven senior heifers rather upset pre-show "dope" in the manner in which they were finally rated. Sultan's Dale, a white, was of sufficient caliber to step out in front because of her scale, thickness, evenness and balance, and lovely character. These same qualities carried her through to junior championship. Village Ruhy, another white, was second for Dihlee over a thick roan from the Glide herd, and a stall mate was left in fourth. Blackhawk was fifth with a white calf that appeared a trifle upstanding. Carruthers was sixth with a highly attractive, well balanced little lady that was a regular hock. She undoubtedly could have stood higher had the judge fancied the type she represented.

The ten juniors made up the largest class of the show and were headed by another Glide entry.

The group classes were better filled than at any former fair and competition ruled fairly keen all the way through. The aged herd naturally fell to Glide, and Pacheco won the top honors in the younger herds. Blackhawk Ranch won the coveted get of sire class with the get of Roan Radium. It is of interest to know that the entire Blackhawk show herd represented the get of that hull.

The Herefords

The Hereford men were jubilant. They came forward with three times as many entries as were shown last year and for the first time in the history of the fair they were out with a larger number than their Shorthorn friends. And they had a right to be proud over the showing they made. There have been many larger shows that could not boast of the quality that the seven California and two Nevada breeders had out. It was the best Hereford show yet held at Sacramento and the breeders declare that it only indicates what they expect to do next year. Throughout the placing the judge, C. M. McCampbell, insisted on scale combined with quality.

The six aged hulls conceded first place to the massive Beau Rosemont, shown by Rule. This bull combines scale, thickness, smoothness and character to a degree that cannot fail to please. He was quite outstanding. The Morgan hull from Nevada was a smooth fellow, hardly so thick as the third hull, but stood a bit squarer and walked better and was leveler on top, and was not so much on the pony type. However, the third place was easily filled over the two polled bulls from the Emmons string.

The two year old class provided the opportunity for the Cazier entry, Beau Blanchard 76th, to make his debut before Western breeders, and the universal verdict indicated that all were agreed with the judge when he sent him to the front. He is a typical son of his noted sire. Impressively fronted, with a head full of character and an attractive horn, level on top and carrying his width to the rear and down into his quarters in a manner to cause wide comment. Indeed, few better quartered bulls can be found. When he fills a trifle more at the heart he will correct about the only apparent point open to mild criticism. Jacks was second with a son of Woodford, well fitted, thicker and with more bone than the polled fellow in third. A son of Woodford 1st, shown by Barngrover, was placed fourth on his scale over the other Jacks entry.

Only two senior yearlings came forward in class, and the larger, heavier boned and thicker quartered Barngrover entry was handed the blue.

The four junior yearlings were topped with Jacks' entry, that had more scale than the Nevada calf. Gahle was at home in third place over the Ogden entry with a plainer head and lacking scale.

The six senior calves furnished plenty of competition, but the good front, covering, stronger bone and greater stretch won for the Gahle calf over the lower set Barngrover entry that was smoother at the tail. The third calf had the factor of size, a stronger top and straighter legs. The last two calves lacked the size of those above them.

The baby class was strong and it was with the winner that the judge

found his junior champion in the corking good son of the two year old winner. This youngster is hard to get away from. He has about everything a good calf should have, save a bit more condition. Few nicer lined, smoother or better balanced calves have been seen out this way.

An interesting situation developed when the championships were tied. Sire and son came together for the purple, with the sire so outstanding that the decision was inevitable.

Generally speaking, the female classes were better balanced than the bull division, and the classes were better filled. A most unusual sight at Sacramento was the line up of nine aged cows. Miss Dale, twice a winner at Los Angeles, topped the lot by virtue of her size, balance and thickness. Cazier was second with Mischievous A, a more compact sort whose smooth covering placed her above Rose Donald. The fourth allotment went to the Gahle herd over the Jacks entry because of a lack of smoothness in the last.

Seven two year olds admitted no other top than Bocaldo Beauty, representing Jacks. She is remarkably thick, with exceptional spread of ribs, extreme depth, very mellow to the touch and with sweet character to burn. She never stopped going until she was declared the grand champion. A stall mate, Gay Princess, hardly so large or deep, but herself thick, fitted properly into second. Two half sisters contested for third with the Gahle entry, landing through her width and handling. The fifth, a poll, was a trifle too high in the air to please.

The Briggs herd, making their first show, furnished the top senior yearling in Miss Era 14th, whose depth, covering, quarters and heart offset a top none too level. A Nevada entry of slightly different pattern was second. The third place fell to a Barngrover entry over one from the Gahle herd because of her better top, although she had hardly as pleasing front. A smooth headed one from the Emmons lot was a trifle plain and not so thick.

It was generally thought that the junior yearlings staged the best show of the day. Nine cracking good ones, with slight margin between top and bottom, gave the judge some work. The lovely little Ruth Domino, that was grand champion as a calf at Denver, led out in front and was later made junior champion. She is very thick and deep with width to balance, and she has two good ends. She had friends for final honors. Rule was second with a little lady that kept things interesting for awhile for the winner and never left matters in doubt as to the red rating. Her balance, stronger top and neater head placed her next to the top. Jacks was third over a Snyder entry that had the size but lacked the even balance of the one above her. Cazier was fifth with a very nice young thing that was a trifle small.

With equal numbers and almost as good quality all down the line, the senior calves were not far behind the yearlings. Cazier took both top places, Carnation 4th going above Nevada 5th on account of her size. Both calves are the right sorts and are thick and smooth. The third and fourth calves hold promise of development. The fifth calf was a poll that lacked the class and fitting of those above her.

Seven juniors made up a good class with Jacks winning with the lovely little Dainty Dare. Briggs was second with a thicker and wider and nicer headed calf than the one shown by Cazier, although the latter was smoother at the tail.

The battle for the grand championship was between the two Jacks entries. Each had friends, but the thickness and nice handling of the senior champion was sufficient to place her above the one with the better head and heavier quarters.

The group classes were a distinct improvement over former shows, with honors fairly equally divided.

Aberdeen Angus

James Marwick of Santa Barbara was the only exhibitor of the Angus cattle and was represented by four head that he recently imported from Scotland.

Fat Cattle

The Kern County Land and Live stock Company had the only entry in

the car lot classes, showing a top lot of well finished Hereford steers.

Blackhawk Ranch, Diablo, showed the winning steer in class for one year old and under two. Kern County Land and Livestock Company was second and fourth and J. A. Bunting of Mission San Jose was third. In the under a year class G. W. Emmons of Danville was the only exhibitor. The Blackhawk entry was later made champion.

SWINE

J. Bennett made comment last week in effect that "Improvement in the showing made by all breeds was very noticeable in all swine classes."

The Poland Chinas

The show this year was distinctly one of real big types and in quality would compare very favorably with any show in the country. In point of numbers the Polands were first with 276 head on the grounds.

In the aged boar class, Big Timm owned by Fred Ross, Hanford, was easily first and the choice of many of the breeders present for grand champion. King George Big Bone, owned by Johnnie Glusing, Winton, a very typy senior yearling, was the choice of the judge for that coveted place. The reserve senior champion was the good junior yearling boar, Headlight, shown by Marshall & Son, Sebastopol. The reserve grand champion, Navy Boy, shown by Gatewood & Stevens, Fresno, was junior and reserve grand champion and one of the greatest individuals in the show.

Among the aged sows and junior yearlings, Alex. D. McCarty was the heaviest winner, taking first in both classes and senior and grand champion on Liberty Girl 3rd. J. F. Lehman, Lodi, won the first in the senior yearling class and reserve grand champion on Evergreen Hutch.

Bassett Bros., Hanford, the heaviest winners in the show, had the junior champion on a very typy spring gilt, with Hugh C. Shinn, Tulare, the junior reserve on his senior gilt.

Taken as a whole, the show was such a great improvement over last year that the breeders feel very much encouraged over the prospects for the future of the breed.

The Poland China Futurity

The futurity shows at the various state fairs have done more to stimulate interest among breeders and cause them to exhibit than any other one feature. The California futurity classes were well filled with the exception of the junior yearling. As in the open classes, the showing was on a much higher plane than ever before. Bassett Bros. were the heaviest winners, with Alex. McCarty second and A. J. Elliott third.

The outstanding class of pigs shown should result in a showing next year that will be the equal of any futurity show in the country.

The Durocs

The Duroc-Jersey show was a close second in point of numbers, with 230 head on the grounds, and by far the greatest lot of hogs ever exhibited. Great credit for the success of the show is due Field Secretary L. J. Anderson and the directors of the state association.

In the aged boar class the Brant Rancho, Owensmouth, took first on May Rose King. Falfadale Farm, Peris, took first and reserve senior and reserve grand champion on the senior yearling, Great Orion Sensation.

V. F. Dolcini, Davis, took first in the junior yearling class with Choice Wonder 3rd, an extremely smooth and mellow boar that was later selected for senior and grand champion. Diamond Bar Ranch, Spadra, took first in the senior pig class on an extremely typy youngster by Ireland's Orion Reformer.

W. T. Hollingshead, Orland, took first in the junior pig class on High Sensation, and later was awarded junior championship on the same pig.

Among the sow classes Diamond Bar Ranch took most of the ribbons on one of the greatest lots of big sows ever shown. Queen of Pathfinders added another purple ribbon to her long string of grand championships. Orion Sensation Lady was reserve grand champion.

Tu-Tock-A-Nu-La Ranch won first in the senior sow pig class on Tu-Tock's

(Continued on Page 414)

MAMMOTH DISPERSAL SALE

Rosamaines Rancho

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Riverside, California

October 19 - 20 - 21, 1920



Part of Barns at Rosamaines Rancho. (Inset) The Bottomland Pasture.

Owing to the ill health of the managing owner, Mr. A. J. Stalder, Rosamaines Rancho, one of the foremost livestock breeding plants in the west, will be sold at public auction to the highest bidder, and its splendid herds of livestock dispersed.

Tuesday, October 19

At 9 A. M., sharp, the dispersal will open with the sale of that portion of the Rancho on which the buildings are located.

THIS PARCEL consists of 235 acres of the most productive land in California; 100 acres are bottomland pasture that carries regularly from 100 to 150 head of cattle, abundant shade and water, and green feed the year round. This land will raise practically any crop grown in California; 60 acres of the balance are in a fine stand of alfalfa, and 40 acres in corn for the four silos.

Improvements on this parcel cost over \$200.00 per acre at normal costs, not a dollar spent for show, and by all who know the property it is regarded as one of the most practical and efficiently laid out in the state.

Two motor equipped pumping plants furnish an abundance of water from never failing wells.

All buildings are electric lighted and sewerred, and buildings are all in good condition, most of the barns practically new.

TERMS ON THIS PARCEL: One-third cash, balance in six equal annual payments, interest at 7 per cent, 2 per cent discount for cash on deferred payments.

PARCEL NO. 2 contains 397½ acres and adjoins the balance of the Rancho on the north. This is cropped regularly and is first class vineyard, orchard, or alfalfa land with an abundance of cheap water.

TERMS ON THIS PARCEL: One-half cash, balance in four equal annual payments, interest at 7 per cent, 2 per cent discount for cash on deferred payments.

ROSAMAINES RANCHO is 45 miles east of Los Angeles, 12 miles west of Riverside, 3½ miles south of Wineville.

OIL PROSPECTS—All of the land adjoining on the north and west has already been leased for oil, and wells are actually drilling within two miles. Leases on either cash or royalty basis have been offered for this Rancho but owners decided to sell unincumbered.

On the Same Day Following the Sale of the Rancho

We will begin the dispersal of the livestock and equipment, selling on this day

90 BIG RED GRADE SHORTHORN COWS
50 REGISTERED DUROC-JERSEY HOGS

18 REGISTERED PERCHERON MARES AND STALLIONS
A SMALL HERD OF GRADE DAIRY HEIFERS
1800 WHITE LEGHORN HENS AND PULLETS
THE IMPLEMENTS AND EQUIPMENT

consisting in part of one almost new 12 foot McCormick Combined Harvester; one Typhoon Ensilage Cutter; one 20 h.p. motor; one Osborne Binder; Beet Drill; plows, discs, rollers, rakes, mowing machines, harness, double trees, lead bars, chains; a complete Acetylene lighting plant; and a large number of other items.

**Wednesday and Thursday
October 20-21**

We will disperse the splendid herd of registered Holsteins,

150 Registered Holstein Cows, Heifers and Bulls

KING PONTIAC NETHERLAND SEGIS 3D, the senior herd sire, has 27 A.R.O. daughters with records up to 29.91 lbs. butter in 7 days for a senior 3 year old. He has about 60 living daughters and about 30 females in this sale are bred to him. He is by a proven son of King of the Pontiacs and out of the twice 34 lb. cow, Gerben Abbekerk Maid.

SIR ORMSBY SKYLARK RAUWERD, the junior herd sire, is by Sir Ormsby Skylark, sire of the world's record cow, Duchess Skylark Ormsby, and is out of a 34 lb. dam sired by a half brother to King Segis. He is a show bull, and although only 20 months old at time of sale there will be at least 50 females in calf to him.

Only Nine Animals Over 6 Years Old

In this entire herd there are only nine animals 6 years old, or over, and there are only twelve over 4 years old. It is a beautiful herd, and the production records are exceptionally good. There are 50 females in the sale with official records up to over 34 lbs. butter in 7 days, and a considerable number are now on yearly test and making excellent records.

105 Descendants of Gerben Abbekerk Maid

Gerben Abbekerk Maid, the famous twice 34 lb. cow, will be in this sale, along with seven of her half sisters by the same sire, and besides that there are 105 of her sons, daughters, grandsons, granddaughters, great-grandsons and great-granddaughters in the sale. The famous cow herself is only nine years old, has nine living sons and daughters, and sells safe in calf again.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RE-TEST EXCEPT AS ANNOUNCED AT SALE.

Catalogs free on request. Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, California.

Auctioneers:

Rhoades & Rhoades, Los Angeles

150—Registered Herefords—150

AT PUBLIC AUCTION

NOVEMBER 4-5-6, 1920

State Fair Grounds

Sacramento, Cal.

Thursday, November 4

45—Registered Herefords—45

In this offering the Pacific Coast Hereford Cattle Breeders Association will endeavor to place before the public the most select lot of breeding Herefords yet offered in a western sale ring.

Top animals from some of the most noted western herds will be chosen for this sale and buyers will find a wealth of quality from which to select. Detailed announcements will appear later.

Sale under auspices of

PACIFIC COAST HEREFORD CATTLE BREEDERS ASSOCIATION

J. I. Cazier, Pres., Wells, Nev. J. A. Bunting, Sec'y, Mission San Jose, Calif.

Friday, November 5

NEVADA HEREFORD RANCH

will make its first individual public sale offering of

55—Registered Herefords—55

featuring daughters of the great breeding bull Harris Standard 2nd, bred to the \$10,000.00 Grand Champion BEAU BLANCHARD 76TH.

There will be choice cows with calves at foot, and a large number of Standard heifers in calf to BEAU BLANCHARD 76TH. Here is a group of high class cattle that combine a splendid measure of good breeding, good type, and good health, and can conservatively be rated as breeding foundation material of the first rank.

Owners: J. H. CAZIER & SONS, WELLS, NEVADA.

Saturday, November 6

Another offering of well bred Herefords, including cows with calves at foot, and a large percentage of good heifers.

50—Registered Herefords—50

This offering permits the buyer a very desirable selection of young females of good breeding, with calves at foot by good sires, or bred to well bred bulls.

Owners: BARNGROVER & WRIGHT, SANTA CLARA, CALIF.

All of the above cattle are guaranteed breeders and sold tuberculin tested with individual certificates delivered to buyers.

Catalogs Free on request. Management

California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneer, Col. Ben A. Rhoades In the Ring, John A. Bunting

Pointers on Hog Cholera

REALIZING the seriousness of an outbreak of hog cholera which manifests itself in its most virulent form and spreads very rapidly at this time of the year, it is extremely important that all persons interested in the breeding of hogs or pork production should possess the necessary information to enable them to take proper precautions to prevent the spread of this disease. It is prevalent in some localities in this state.

The cholera is caused by a germ so small that it cannot be seen by the use of the most powerful magnifying apparatus in use today. The organism gains entrance through all the natural openings of the body and through wounds or abrasions. Food, if not contaminated by the germ, never produces the disease. Avoid the possibilities of hogs becoming exposed to the germ and they will remain free from the disease.

How Cholera Manifests Itself

There are times when the symptoms presented by a hog affected with hog cholera are not sufficient to enable one to recognize the presence of the disease when it first makes its appearance. Occasionally it takes such a rapid course that it is not suspected until a dead hog is found.

The acute form, which is the most common one of the disease, may be recognized or suspected by the following symptoms: The temperature of the sick hog will range from 104 to 107 degrees Fahrenheit. (Normal temperature is not over 104 degrees Fahrenheit.) It will steal away from its mates and bury itself in the bedding and will be disinclined to move about when disturbed. It will have a very small appetite, or at times will come to the trough and sip or drink a quantity of the liquid part of the food and make a pretense at eating. Sometimes when the body temperature is high the animal will drink large quantities of water.

Respiratory complications are quite common and the animal will cough frequently. When a pneumonic condition presents itself the animal will show difficulty in breathing.

The skin very often shows large red or purplish patches on the abdomen between the thighs, behind the ears and in some instances all over the body. However, the last two described symptoms are not constant.

When the chronic form of hog chol-

era presents itself, the animal will become emaciated, have digestive disturbances, such as alternating diarrhoea, constipation and chronic pulmonary disturbances. It may have a fairly good appetite and in time will apparently recover, but will not usually be thrifty. Such animals often harbor the germs permanently and expel them from time to time in the excretions, thus exposing susceptible hogs to the infection.

Post Mortem Appearance

On making a post mortem examination the skin should first be examined for red or purplish areas or crusty patches resembling dried blisters. These lesions are usually found on the skin over the abdomen between the thighs, under the arm pits, and occasionally all over the body. The discolored areas may be small specks or they may have become confluent. Of the internal organs the lymph glands as a rule are enlarged and reddish or purplish in color.

The inner surface of the bladder frequently shows many small reddish spots, but sometimes it presents a diffused redness.

The kidneys, after removing the thin membrane which covers each of them, show small reddish or dark brown specks, oftentimes giving them the same speckled effect as that of a turkey egg. These specks are not always numerous and are sometimes overlooked.

The inner surface of the large intestine, particularly in the region where the small intestine joins the cecum, may show reddish spots, diffused redness, and sometimes small button shaped ulcers.

As a rule, the inner surface of the stomach presents a large diffused, deep red or reddish brown area. Occasionally the diffusion does not present itself and spots of the above mentioned color on the inner surface of a fresh normal stomach should not be confused with the appearance presented in hog cholera.

Prevention

Preventive measures are the only logical means of combating hog cholera. They may be carried out as follows:

First—Avoid exposure of susceptible hogs to the germ which causes the disease.

Second—Hogs when exposed to hog cholera should at least be injected with anti-hog-cholera serum, which will protect them through the period of exposure.

Third—Produce permanent immunity in the hogs by administering virus at the same time protective serum is injected.

This last procedure is risky business if the products used are not of the highest quality and properly administered.

Accident

When losses are experienced after healthy hogs are injected with serum and virus, the veterinarian who administered the products is sometimes blamed, when either the serum or the virus is responsible for the fatalities. Again, the reverse is sometimes true. The serum and virus may be of the most excellent quality and be handled and administered by a veterinarian unfamiliar with the important steps of procedure. When this is the case disastrous results may be the reward of the best intentions.

When the owner of hogs is obliged to have them immunized he should thoroughly inform himself on all the factors involved in the procedure that may produce unfavorable results before anyone, directly or indirectly concerned, is charged with being responsible for any ill effects that follow the operations.

Recovers from Hog Cholera

It is not advisable to attempt to save hogs noticeably sick with cholera, for the reason that only a few recover and they, as a rule, henceforth remain unthrifty. The healthy hogs in the exposed drove are the ones that should be given care and attention.—S. O'T.

COMPARE

—Then Buy

Play safe. Compare several of the leading makes of cream separators, point for point—before you act. Any dairyman can choose right if he follows this plan. The danger comes in accepting claims which do not "square up" with performance.

If you start in to seriously consider comparisons, here are some of the commanding features that you'll quickly note about the United States—the separator that holds and sustains the world's record for close separation:

- 1—Perfected Disc Bowl a marvel of close skimming, easy cleaning and assembling.
- 2—Crank or power can be attached on either side.
- 3—Fewer revolutions of crank make turning easy.
- 4—The only practical and reliable Bell Speed Indicator.

Be your own judge and jury—you are the one who pays. We'll be glad to send you all of our booklets; write

Vermont Farm Machine Corporation

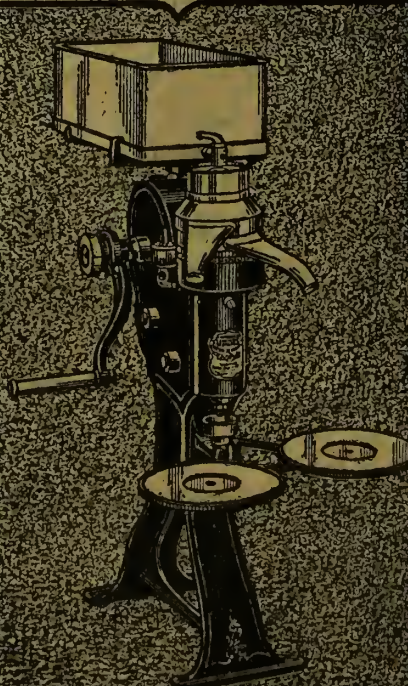
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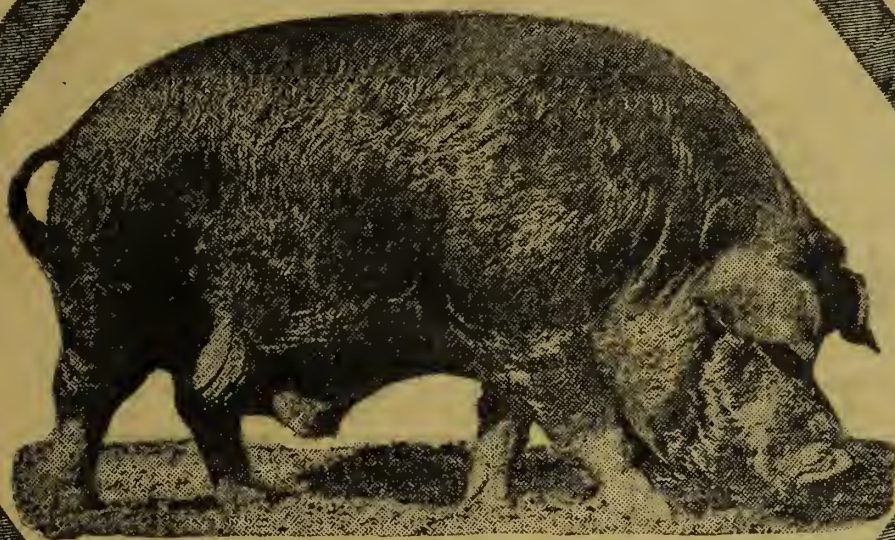
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See Our National Show and State Fair Champions
At the Los Angeles Livestock Show, October 2-10



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Diamond Bar Ranch

F. E. Lewis, Owner and Manager

R. K. Walker, Hog Dept.

Spadra, Los Angeles County, California

DISPERSAL SALE

103 Registered Shorthorns 103

74 Females---29 Bulls

WILLOTTA RANCH

Owned by William Pierce

Suisun, California

Thursday, September 30, 1920

At 12 o'clock Noon

For years this well known herd has been a dependable source of supply for good range bulls, and buyers will now have an opportunity to purchase the regular breeding, heavy milking, healthy females that constitute this good herd.

30 Cows with Calves at Foot

These cows have been handled strictly under range conditions, and their condition on sale day, considered in connection with the splendid, well grown, vigorous calves at foot, will tell the story of how well they do on range feed. These females and the other 44 head of females in the sale, afford a most timely opportunity for range men and established breeders to secure Shorthorn females that will prove most profitable investments.

20 Husky Red Bulls

These are the sort that have made WilloTTa Ranch so favorably known among rangemen of California. Strong, rugged fellows, with plenty of scale and bone, right at home on the range, and most of them ready for service this fall.

Every animal guaranteed to be a breeder; every animal over six months old tuberculin tested and individual certificate furnished to buyer.

WILLOTTA RANCH is 2 miles west of Fairfield-Suisun, on Main State Highway between Davis and Benicia.

SALE STARTS PROMPTLY AT NOON

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. Geo. W. Bell, Tulare



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Complete With Traveling Feed Table and Blower

ALFALFA	CORN ON THE	KAFFIR CORN
BEAN STRAW	COB	SORGHUM
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a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

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TRADE MARK REG. U.S. PAT. OFF.

will clean it off without laying up the horse. No blister, no hair gone. Concentrated—only a few drops required at an application. \$2.50 per bottle delivered. Describe your case for special instructions, and Book 8 R free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; allays Pain and Inflammation. Price \$1.25 a bottle at druggists or delivered. Liberal trial bottle postpaid for 10c. W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

DELAYED FAIR NOTES

(Continued from Page 411.)

Pathfinder Girl and later was awarded junior champion on the same animal.

Falfadale Farm took first in the junior sow pig class on Miss Defender Sensation, junior reserve champion.

Judge Weaver's decisions as a whole were very satisfactory.

The Duroc Futurity

The same high standard of excellence shown in the open classes was noticeable in the Duroc futurity, although several of the best pigs on the grounds were not eligible for the latter show. However, Judge Weaver had no difficulty in finding plenty of good pigs to take all the prize money offered. Practically every breeder present signified his intention of showing in the futurity classes next year, and judging by the great showing made this year the 1921 show will be by far the greatest show ever held in the West.

The Berkshire Show, by B. S. Bennett

The Berkshire show at the fair this year was conceded, both in quality and number, to be the greatest of any of the previous shows. Several new exhibitors were seen for the first time, including Anchorage Farm, Italian Vineyards, D. J. Bastanchury, Superior California Farm Lands Co. and J. G. Throckmorton, all making very creditable showing. Most of the classes were large and the competition so keen that had the judge placed any one of two or three animals first there would have been little cause for criticism.

The grand champion boar was found in the Humphrey entry, Escalon Big Joe, with Enhancer, shown by Castleview Ranch, and Royal Longfellow, shown by D. J. Bantanchury, pushing him hard for the coveted honors.

In this class ringside opinion was divided, many favoring the Castleview entry, and as these three boars will meet at Los Angeles and Riverside the result will be awaited with much interest.

The senior yearling sow, Grape Wild Rose 6th, was easily first in class and was later made grand champion, although pushed hard by her dam, Grape Wild Rose. The judge in commenting on these two animals said they were two of the most magnificent specimens of the breed he had ever seen.

The senior sow pig class was not only the largest but put up the keenest competition of any of the classes, there being 25 entries, and it was some time before the judge was able to make his decision. The winner was found in Castleview Royal Duchess, exhibited by Italian Vineyards. If this young sow meets with no accident she should be a strong contender on the show circuit next year as a senior yearling.

From a breeder's point of view the most interesting part of the show was the classes for herds, get of sire and produce of dam, these classes being heavier than at any of the previous shows.

In the breed contest for fat barrow, first for single barrow went to Italian Vineyards, while A. B. Humphrey won on pen of three. In the interbreed contest Napa state hospital was awarded grand champion carlot, while Superior California Farm Lands Company won grand champion single barrow. Several judges competent to speak have pronounced this barrow an excellent example of what a barrow should be, and arrangements are being made for a higher finish and showing him at the International, Chicago.

Wilson Rowe of Iowana Farms, Daventport, Iowa, was the judge, and in commenting on the show said: "The Berkshire show here will compare favorably with any I have seen in recent years, and if any of the Eastern breeders are looking for some real competition they can find it in California." California breeders would welcome such competition.

Chester White Swine

The showing of Chester Whites was limited to the following breeders: E. E. Fulton, Fair Oaks; Harry N. Huffman, Chico; E. N. Johnson, Fair Oaks; N. H. Locke Co., Lockeford; J. Rohy Wentz, Fair Oaks. Huffman took both the boar and sow grand champions with Nero of Ancata and Wonder.

Fulton had the junior and reserve junior boar on Pedro and Silver Heart. He likewise had the junior and reserve junior champion sows with Silver Lucy and Violet. Silver Lucy was reserve grand champion sow and Titeum, shown by Johnson, was reserve grand champion boar. Wilson Rowe tied the ribbons.

Hampshire Swine

James Marwick of Santa Barbara was the lone exhibitor of Hampshire swine and was awarded all firsts and championships for which he competed.

Tamworth Swine

Four herds, one from Illinois and owned by T. L. Endsley and Son of Charleston, one owned by the Pleasant Hill Farm, Bethany, Illinois, and the herd representing the Dutch Fork Stock Farm, Eastover, South Carolina, competed with Dr. J. J. Summerfield of Santa Rosa. The Pleasant Hill Farm had both grand champions. Summerfield had the junior and reserve grand champion boar.

HEAVY HORSES AT SACRAMENTO

If there was expressed disappointment over the small showing of draft horses at the state fair, considerable consolation was afforded by the marked quality of the exhibits.

The Percherons

The Percherons had the distinction of having the largest entry list, the following four breeders constituting the show: M. Bassett, Hanford; Palo Alto Percheron Farm, Palo Alto; N. W. Thompson, Patterson, and James Marwick, Santa Barbara. The stud championship fell for the sixth time to Ithos, owned by Bassett. It is truly marvelous how this old fellow stands the gaff from year to year, but the secret of his ability to come back each year and take the measure of younger contenders is accounted for by the fact that he represents the correct pattern. He has the proper conformation throughout and is especially correct in his joints and underpinning. The legs of this veteran seem to defy the ravages of time and are proof positive that only legs and joints and feet of the proper set and quality can be expected to stand up. Perhaps he doesn't move with quite the truiness of a few years back, but he still gets away with a dash and manner that need not be criticized. It is when

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Of all livestock diseases, anthrax is one of the most fatal.

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For immunizing cattle, horses, sheep and mules.

Anthraxoids are Anthrax Spore Vaccine in pill form. Each Anthraxoid is a dose ready to be injected under the skin of the animal.

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A serum to be used when animals show symptoms of anthrax.

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standing, though, that he makes his most impressive show.

The mare championship went to the lovely yearling, Palo Alto Marigold, a black of quality and pleasing conformation, barring, perhaps, a little fineness throughout.

The judge, C. M. McCampbell of Kansas, seemed to go for quality and in the get of sire class awarded the blue to a group shown by Palo Alto over a more rugged, drafty lot entered by Thompson.

The Shires

As usual, the Blackhawk Ranch, Diablo, was on hand with a group of Shires that would be a credit to any show in America. Indeed, it is doubtful if there is a better mare than the aged Blackhawk Chessie. She is back again this year, quite as unbeatable as before. Chessie is a mare of tremendous scale combined with all the sweetness one could ask. Standing or in motion all look alike to her. When she poses herself there is wide room between her and any competition, and

when she moves at the end of the halter she carries her weight with such ease and grace and flash as to even widen the margin between her and any would-be competitor. She is the greatest mare of any of the draft breeds owned in the West and is one of the very best Shire mares now living.

The aged stallion class was won by Merritt and Bowers of Tulare with the black, General Sherman—rather long in the middle and coupling and lacking the class that has been seen at former fairs. The championship finally went to him over the younger entry from the Blackhawk establishment that was the popular choice—coming nearer to the standard that we have come to look for in the modern Shire.

The Belgians

The Merritt-Bowers Company were the only exhibitors of Belgians. Their big, drafty Stevenot was returned champion. Stevenot is a splendid representative of the modern Belgian horse of draft. He has the weight demanded and he is able to carry it in the approved manner. Mina, from the same stable, was champion mare.

The Clydesdales

O. H. Brandt of Sheelville was the only exhibitor of Clydesdales and received all awards.

STATE FAIR NOTES

A meeting of the California Cattle-men's Association was held at the state fair grounds, September 8. The meeting served to bring together a representative group of members. President Bixby presided and stated that during the past few months the membership campaign had been carried on in a vigorous manner and that now the association represented two-fifths of the cattle producers of the state and that they controlled a like percentage of the cattle. Bixby said that the association had been able to secure a ruling from the railroads of the state in which cattle were classed as perishable products and that the new rule would expedite shipment. A meeting will be held at the Los Angeles show, October 7, and the annual meeting will be held at San Francisco in December.

The students' judging contest was held Saturday, the opening day. About 50 students from the college of agriculture and the university farm school participated. Classes of beef cattle, dairy cattle, sheep, swine and horses were judged and reasons given. C. D. Cederstrom of Los Angeles was the champion judge of all classes and was awarded the California Cultivator trophy. The winners in the different classes were:

Beef cattle; Frank Clelland, B. S. Rolph, M. L. Stoner. Dairy cattle; J. A. Murdy, W. M. Stevenson, J. L. Kanst. Sheep; F. D. Baxter, L. S. Brown, N. H. McCollum. Swine; J. L. Kanst, R. K. Gard, J. A. Murdy. Horses; I. M. Noble, Frank Clelland, L. J. Banks.

At the annual meeting of the California Holstein-Friesian Association, held during the week of the state fair, the following officers and directors were elected: F. L. Morris, Woodland, president; R. L. Holmes, Modesto, first vice-president; E. Swift Train, San Francisco, second vice-president; C. L. Hughes, Sacramento, secretary. The directors are: J. E. Peck, Callexico; Earl Sturgis, Santa Anita; R. H. Condee, Chino; H. V. Bridgford, Patterson; A. R. Magruder, Ripon; W. J. Higdon, Tulare; G. W. Gibson, Williams; J. M. Henderson, Sacramento; F. W. Kiesel, Sacramento; Owen Duffy, Napa, and Delancy Lewis, San Francisco.

Following the completion of the judging the Pacific Coast Hereford Breeders' Association held a dinner at which a number of important matters were discussed. The meeting went on record favoring a livestock show at either San Francisco or Oakland. A resolution commending the work of Secretary Chas. Paine was passed and a strong resolution is to be prepared and addressed to the next legislature in an effort to secure increased support for the state fair.

An important step was taken by (Continued on Page 423.)



A Food and Tonic Which Will Show Remarkable Results in

Fattening HOGS

In fattening hogs for market, LACTEIN is the most economical and effective agent you can use. LACTEIN produces that weight of perfect health in the hog—keeps the digestive organs in the "pink" of condition—frees the system from worms and eliminates all disease of the intestines. No danger from bowel trouble or running down by disease. LACTEIN keeps the hog so healthy, that his system gets every ounce of nourishment from the food. The result of this is easily seen—it means that the hog adds on solid, firm flesh, and this means added weight, and in turn means more dollars to you.

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Grape Wild Berkshires Dominate Classes at California State Fair

WINNING

Grand Champion Boar, Escalon Big Joe

Grand Champion Sow, Grape Wild Rose

Eight Firsts, Including Get of Sire, Big Leader, and Produce of Dam, Five Seconds and Three Thirds

PRACTICALLY OUR ENTIRE SHOWING CONSISTED OF THE BLOOD OF BIG LEADER—THE BOAR THAT IS RESPONSIBLE FOR THE MOST MODERN TYPE OF BERKSHIRES, THE SORT WITH EXTREME SIZE AND QUALITY.

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Grape Wild Farms

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Italian Vineyard Company

Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

Alex. Wilson, Supt., Guasti, Cal.

Johnson's Defender Jr.

Heads my herd of carefully selected sows. He should be seen to be appreciated. I can spare a few choice females or young stock either sired by or mated to this good boar. You will be pleased with any purchase made from me.

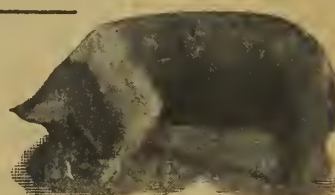
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FOR SALE---Young Hampshire Boars

Pure Bred Stock. Ready for November service. Every one a choice individual. Some recent prize winners. Prices reasonable. Write immediately.

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John A. Bunting Mission San Jose Cal.

DIAMOND G HEREFORDS

A few choice young bulls, Big, heavy-boned husky fellows sired by DON PERFECT 2nd, one of the best sires in the West. Priced right and guaranteed.

H. H. Gable Esparto, Cal.

Vaughn's Jones

Is a boar that is siring a high class of POLAND CHINAS

good enough for the most discriminating buyer. Come and investigate; can show you.

A. J. Van Cleef, Riverdale, Cal.



Our Service Meets Your Needs

Railsback service on Allwork Kerosene Tractors has just been extended to Northern California and Nevada by our recent entry into this territory as Allwork distributors. This service is an invaluable aid to farmers in realizing to the fullest extent on their tractor investment—a fact supported by the enviable reputation we have earned in Southern California.

Allwork Kerosene Tractor

The Allwork Kerosene Tractor meets every demand—economy, strength, simplicity. Many owners never have need of repairs, while the Allwork fuel—KEROSENE—delivers more power at less expense, without a special carburetor.

KILLEFER Implements

In Los Angeles County we distribute the Killefer line of implements, made-to-order for use on California farms. A complete stock of needed implements of this well-known line always ready for delivery.

OLIVER Implements

Another interesting note is that we are now distributors of the celebrated Oliver Chilled Plow Works line—including all the implements that have made the Oliver name famous throughout the world.

Visit Our Showrooms or Write for Further Particulars

M. Railsback & Co.

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Get a WADE Bean Thresher

Buy the thresher built especially for the man who wants a machine for his own crops. You do not have to

thresh with the Wade "by the day" to make it pay for itself and a good profit besides.

Built for Western Conditions

The Wade thresher is manufactured by R. M. Wade & Company, Portland, the oldest agricultural implement

house in the West. It is especially designed to meet Western conditions.

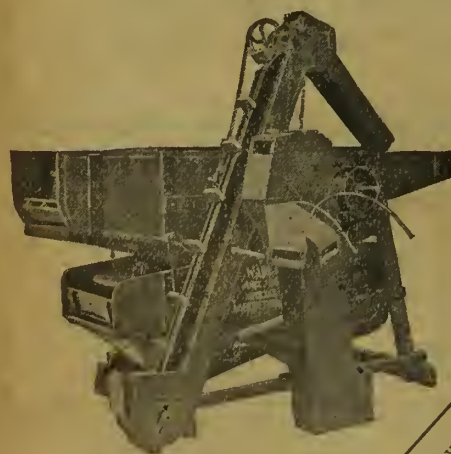
Plenty of Separation Surface

The Wade has plenty of separation surface and strong, well controlled air current. Doesn't crack the kernels. Built of best materials throughout.

Threshes beans, peas, china peas, lentils, soy beans, vetch or other legumes. Capacity 20 to 35 bushels an hour.

Write for Descriptive Folder

If your dealer hasn't the Wade, write us for literature and full information on this wonderful machine.



Use the coupon.

B. Hayman Co. Inc.

120 N. Los Angeles Street,

Los Angeles Calif.

B. Hayman Company, 120 North Los Angeles St., Los Angeles, California. Gentlemen: Please send me descriptive literature and full information on the Wade Pea and Bean Thresher, without obligation on my part.

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RELIABLE Seeds

Aggeler & Musser Seed Co.

620 So. Spring Street

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767 So. Central Ave.

Los Angeles

Cal.

Poultry at the State Fair



As usual California's showing of commercial poultry was shy at the state fair. Judge R. V. Moore said that nearly all classes other than Leghorns were strictly up to form and made extremely fine showing both in number and quality.

Superintendent Mitchell was not able to be in the active work, but was represented by his son.

Some of the finest Bronze turkeys ever seen were there. There was also a great showing of Belgian hares, cavies and pigeons.

The awards in the utility classes are:

AMERICAN CLASS

Barred Plymouth Rock

Cock—1, P. A. Bryant; 2-3, Gill & Warrick.

Hen—1, Gill & Warrick; 2-3, Cameron Bros.

Cockerel—1-2, Gill & Warrick; 3, Bryant.

Pullet—1, Roscroft Plymouth Rock Yards; 2, Gill & Warrick; 3, Bryant.

Cockerel Bred Pen—1, Gill & Warrick; 2, Bryant; 3, Cameron Bros.

Exhibition Pen—1, Cameron.

Pullet Bred Pen—1, Poppy Hill Poultry Farm; 2, Roscroft Yards.

White Plymouth Rock

Cock—1, Plymouth Rock Poultry Yard.

Hen—1-3, Roselawn Farm; 2, Howard Quality Poultry Farm.

Cockerel—1-2, W. R. Brooks.

Pullet—1-2, Brooks; 3, Roselawn Farm.

Pen—1, Brooks; 2, Howard Farm; 3, Plymouth Yard.

Partridge Plymouth Rock

H. W. Barnett was the only exhibitor of Partridge Plymouth Rocks.

Silver Wyandotte

Cock—1-2, John K. Brown; 3, Frank Blackwell.

Hen—1, Blackwell; 2, Brown.

Cockerel—1-2, Brown; 3, H. D. Poisal.

Pullet—1, Brown; 2-3, Poisal.

Pen—1-2, Brown.

Golden Wyandotte

Manuel Roberts was the only exhibitor of Golden Wyandotte.

White Wyandotte

Cock—1, James Whyte.

Hen—1, Arthur W. Huskins; 2, George H. Buhman; 3, James Whyte.

Cockerel—1, Whyte; 2, Thos. L. Bell.

Pullet—1-2, Whyte; 3, Buhman.

Pen—1, Jesse Moore.

Partridge Wyandotte

Manuel Roberts was the only exhibitor of Partridge Wyandottes.

Columbian Wyandotte

Cock—1, George L. Aumock.

Hen—1-2, Aumock.

Cockerel—1, Howard Farm; 2, Mrs. P. H. Chaussee; 3, Aumock.

Pullet—1, Howard Farm; 2, Chaussee; 3, Aumock.

Pen—1, Chaussee.

Single-Comb Rhode Island Red

Cock—1, Wards Poultry Farm; 2, Red Feather Pens; 3, Fowler.

Hen—1-2, Wards Farm; 3, Fowler.

Cockerel—1-2, Wards Farm; 3, G. W. Wittenberg.

Pullet—1, Paul H. Hecker; 2, S. E. Elliott; 3, Wards Farm.

Pen—1, Wards Farm; 2, Bryant; 3, Fowler.

ASIATIC CLASS

Light Brahma

Cock—1-2-3, Stuart Poultry Farm.

Hen—1-2-3, Stuart Farm.

Pen—1, Bryant.

Dark Brahma

Hen—1, A. J. Coe.

Partridge Cochins

P. A. Bryant was the only exhibitor of Partridge Cochins.

Black Langshan

Cock—1-2, James H. Crabtree; 3, Erwin Weisner.

Hen—1, Crabtree; 2, Erwin Weisner.

MEDITERRANEAN CLASS

Single-Comb Brown Leghorn

Hen—1, Mrs. M. C. Albrecht.

Cockerel—1, John D. Roberts.

Pullet—1-2, John D. Roberts.

Single-Comb White Leghorn

Hen—1, Edw. H. Buttler; 2-3, L. J. Amos.

Cockerel—1, J. W. Blackman; 2, John D. Roberts; 3, Amos.

Pullet—1-2, John D. Roberts; 3, Amos.

Pen—1-2, Amos; 3, Buttler.

Rose-Comb White Leghorn

R. G. Baxter was the only exhibitor of Rose-Comb White Leghorns.

Buff Leghorn

Cock—1-2-3, Manuel Roberts.

Hen—1-2-3, Manuel Roberts.

Cockerel—1, C. M. Newbert; 2-3, Manuel Roberts.

Pullet—1-2, Manuel Roberts; 3, Wrieden Poultry Farm.

Pen—1-2-3, Manuel Roberts.

Single-Comb Black Minorca

Hen—1-2-3, Mrs. M. C. Albrecht.

Cockerel—1-3, G. W. Wittenberg; 2, Spaulding.

Pullet—1-3, Wittenberg; 2, Spaulding.

Single-Comb White Minorca

Earl E. Sanders was the only exhibitor of Single-Comb White Minorcas.

Single-Comb Buff Minorcas

Wendell R. Mortimer was the only exhibitor of Single-Comb Buff Minorcas.

Blue Andalusian

H. E. Belcher was the only exhibitor of Blue Andalusian.

Single-Comb Ancona

Cock—1, Crabtree; 2, Manuel Roberts; 3, Albert N. Reay.

Hen—1-2, Reay.

Cockerel—1, Reay; 2-3, John J. Wangan.

Pullet—1, Wangan; 2, Reay; 3, Crabtree.

Pen—1-2, Reay.

ENGLISH CLASS

Dark Cornish

Cock—1, A. O. Johnson; 2-3, B. P. Lausten.

Hen—1, Johnson; 2-3, Lausten.

Cockerel—1-2, Johnson; 3, Lausten.

Pullet—1-3, Johnson; 2, Lausten.

Pen—1, Lausten.

Single-Comb Buff Orpington

Cock—1-3, Braemar Ranch; 2, Sequoia Farm.

Hen—1-3, Braemar; 2, Sequoia.

Cockerel—1-3, Samuel Abrams; 2, Braemar.

Pullet—1-2-3, Braemar.

Pen—1-2, Braemar.

Black Orpington

Cock—1-2-3, Sequoia.

Hen—1-2-3, Sequoia.

Pullet—1-2, Sequoia.

Pen—1, Sequoia.

White Orpington

Cock—1, Sequoia; 2, R. P. Lutz.

Hen—1-2, Lutz.

Cockerel—1-2, Sequoia.

Pullet—1-2, Sequoia; 3, Lutz.

Pen—1, S. D. Koons; 2, Lutz.

Blue Orpington

Sequoia Farm was the only exhibitor of Blue Orpingtons.

POLISH CLASS

Bearded White Polish

Cock—1, Mrs. Blanche Meredith; 3 R. G. Baxter.

Hen—2, Meredith.

Golden Polish

Mrs. Meredith was only exhibitor of Golden Polish.

Non-Bearded Silver Laced Polish

A. J. Coe was only exhibitor of Non-bearded Silver Laced Polish.

HAMBURG CLASS

Silver Spangled Hamburgs

Hen—1, A. H. Patterson.

FRENCH CLASS

White Houdans

Lutz only exhibitor of White Houdans.

Mahogany Russian Orloff

Wendell R. Mortimer only exhibitor.

CONTINENTAL CLASS

Silver Campines

Manuel Roberts only exhibitor of Silver Campines.

EGGS

White eggs—Special best dozen white eggs, Howard Farm.

Brown eggs—Special best dozen brown eggs, Lutz.

Plymouth Rock eggs—Best dozen Plymouth Rock eggs, Howard Farm; second best dozen, Lutz.

Wyandotte eggs—Best dozen Wyandotte eggs, Mrs. Chaussee.

Rhode Island Red eggs—Best dozen R. I. Red eggs, Chaussee; second best dozen, Howard Farm; third best dozen, Ward's Poultry Farm.

Leghorn or Anconas eggs—Best dozen Ancona eggs, Howard Farm; second best dozen, Chaussee; third best dozen Leghorn, Amos.

English class eggs—Best dozen White Orpington eggs, Lutz.

French class eggs—Best dozen White Houdan eggs, Lutz.

TURKEYS

Bronze Turkey

Old tom—1, Blackman; 2-3, John G. Mee.

Old hen—1, Sanders.

Yearling tom—1, Sanders; 2, Blackman.

Young tom—1-2-3, R. C. Whitworth.

Young hen—1-2-3, Whitworth.

Yearling hen—1-2-3, Blackman.

White Holland Turkey

A. J. Elliott was the only exhibitor of White Holland turkeys.

Bourbon Red Turkey

Old tom—1, J. J. Berry.

Young tom—1-2, W. E. Lloyd.

Old hen—2, Berry.

Young hen—1, Berry.

Wild Turkey

"Call of the Wild" Turkey Ranch only exhibitor of wild turkeys.

DUCKS

Pekin Duck

Old drake—1, A. J. Coe.

Old duck—1, Coe.

Young drake—1-3, Braemar Ranch; 2, Coe.

Young duck—1-3, Braemar Ranch; 2, Coe.

Rouen Duck

Old drake—1, Mrs. Emma V. Miller; 2, Bryant.

Old drake—1-2, Miller.
Young drake—1-2, Miller.
Young duck—1, Miller.

White Muscovy Duck

Old drake—1, Mrs. Bessie B. Fowler; 2, Mrs. Albrecht.

Old duck—1, Albrecht; 2, Fowler.
Young drake—1, Fowler.
Young duck—1, Fowler.

Fawn and White Indian Runner

Old drake—1-2-3, W. McGee.
Old duck—1-2-3, McGee.
Young drake—1-2-3, McGee.
Young duck—1-2-3, McGee.

Old Buff Duck

Wm] McGee, only exhibitor of Old Buff Ducks.

GEESE**Toulouse Geese**

Mrs. Fowler only exhibitor of Toulouse geese.

Embsen Geese

John G. Mee only exhibitor of Embsen geese.

Poultry Queries

Conducted by J. A. Koethen

Cholera, Perhaps

In your issue of September 4, J. B. P. of Lodi asks what causes his hens to have certain troubles which he describes. I have had hens die that way from eating rotten potatoes. There is no remedy except in very light cases, where milk will help.—Mrs. A. W. Reeves, Anaheim.

Gizzard Worms

Will you please give me information on a cure for worms found in the meat of the gizzard in chickens. They are small worms about 1½ inches long.—Subscriber, Hollister.

This gizzard worm is dispharagus nasutus, another variety of the round worm so frequently found in the intestines of fowls. The treatment recommended by Dr. Beach of the poultry division of the college of agriculture, and several times mentioned in this column, should be effective with these as well as with the intestinal worms: Mix a pound of tobacco dust with 50 pounds dry mash, and keep before the birds three or four weeks. Then discontinue the treatment for the same length of time, after which they may have it again for three or four weeks. The treatment may be continued at intervals in this way till

all signs of worms have disappeared. For those who do not care to use tobacco, oil of turpentine is a time honored remedy. Beat a new laid egg with 1 tablespoon oil of turpentine and mix thoroughly by shaking. Give a teaspoon of the mixture night and morning for a few days. Another remedy is powdered areca nut. Divide ¼ of an ounce of the areca nut into four powders and give one powder each morning while the bird is fasting, with a dose of olive oil two hours after each powder. The tobacco treatment is the only one suitable for a whole flock. The others might be useful for individual cases.

Wing-Clipping

Does clipping the wings or tails of pullets and hens to keep them from flying over fences stop them from laying?—Subscriber, Lodi.

I do not see how it could unless the feathers were clipped so close as to draw blood. Some poultrymen make a practice of clipping the wings of all chicks when they are about a week old, and they say the chicks do not suffer in the least.

GETTING THE BEST OF CIRCUMSTANCES

Rumor has it that Southern California fanciers are a bit discouraged and disinclined to undertake the staging of the usual winter shows. This is to be expected and is rather a hopeful sign than otherwise. If shows must be held at a loss and without suitable accommodation, and without any great interest on the part of anyone but the exhibitors, why hold them? Last fall I attended four shows in three months, and only one was creditable. Some exhibitors had their birds at every one, but the majority exhibited at only one. It is easy to figure how much competition there is if A shows his birds at the October show, while B's come out in December and C's in January. We have had too many shows, and some must be eliminated or fair competition is impossible.

Some day we shall have a suitable building in a suitable location where Southern California fanciers can have a Madison Square Garden show all their own and in the same place every year. That day is not far distant. Next year may see it. This year high prices of real estate and building make it necessary to find some other way.

There is a word that has been so overworked that it has become almost slang, but because it is the word that best fits the case I dare to suggest it as a slogan for fanciers. It is "Concentrate." Last year our exhibitors of fancy stock were spread over four shows, to the despair of the folks who had to write them up and the discouragement of the fanciers themselves. Why not concentrate this year on one?

THE BROODY HEN

Poultry raisers will find that with the raising of the larger breeds, for instance, Plymouth Rocks and Rhode Island Reds, they will have an excess of broody hens. All such hens not used for hatching purposes should be "broken up." This can best be accomplished by interning the broody hen in a well ventilated coop or box which has a slatted or wire bottom. Through this the air can circulate freely and thus aid in reducing the broody fever.

Hens housed in this manner must be well fed from troughs just outside the coop. Skimmilk and buttermilk, meat scraps or tankage are the essential feeds at this time as they aid in maintaining the force and vigor of the egg producing organs.

A cure from broody fever is effected in from three to seven days of such confinement. At the end of this time they may be returned to the laying contingent of the flock in order that a 50 per cent egg production be maintained.

COMMUNITY FAIR

Last Saturday and Sunday the Runnymede Community near Palo Alto held its third annual agricultural and livestock exhibit at the Weeks Poultry Farm. There were agricultural exhibits of nearly all kinds, the show, however, running largely to poultry and poultry supplies. One of the features was a chicken dinner.



Avery 6-Cylinder Tractor—Model C

A Big Success in a Small Tractor

This Avery 6-cylinder tractor is proving a big success in practically every kind of farm work. It gives to the man operating a small tractor outfit the same certainty of service that Avery owners are getting from the larger Avery machines.

This small tractor, like the larger sizes of Avery tractors, is built complete in the Avery factories. Has a powerful six-cylinder motor with extra strong crankshaft and connecting rods—especially designed for heavy-duty work. Also, centrifugal governor entirely enclosed, running in oil—high-tension magneto—thermo-siphon cooling system—selective sliding transmission—roller and ball bearing equipped, etc. Can also be equipped with a conveniently located belt pulley at a slight additional expense, so that it can be used for all kinds of lighter belt work as well as field work.

A thoroughly dependable, high-grade tractor at an attractive price, which in-

cludes regularly such accessories as platform, seat, tool-box, drawbar, air-cleaner, etc.—equipment that makers of other small tractors charge extra for.

Now is the time you need a tractor most. Now is the time to get it.

We also build another small tractor, the Avery Model "B" 5-10 H. P. size with a similar design. Ask for special circulars describing these machines or

Write for the Avery Catalog

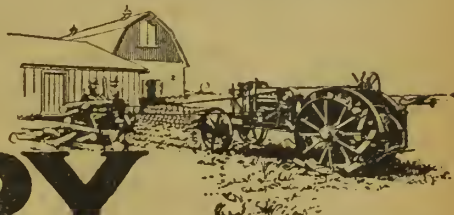
and learn about the complete line of Avery machinery, including these small models and seven larger sizes of Avery Tractors, 8-16 to 40-80 H. P. built with "Draft-Horse" Motors and "Direct-Drive" Transmissions. Also, Avery Roller-Bearing Champion "Grain-Saving" Threshers and Silo Fillers, Avery Motor Cultivators, Avery "Self-Lift" Plows, "Self-Adjusting" Tractor Disc Harrow and other Avery Tractor-operated machines.

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Motor Farming, Threshing
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Avery-ize Your Farm:
"A Good Machine and a Square Deal."

Hairy Peruvian Alfalfa Seed

Fancy. From Certified Fields Only.
Each Sack Branded, Tagged and Sealed

ARIZONA CERTIFIED ALFALFA SEED

This certifies that the alfalfa field of *Morton*

located in *Yuma Valley* has been examined by me in cooperation with other representatives of the Arizona Experiment Station and that this field is commercially pure **Hairy Peruvian**

No warranty is given as to identity, purity or viability of this seed.

J. W. Longstreth
County Agricultural Agent,
Yuma.

Yuma Valley alfalfa seed is noted for its quality. **PURITY FIRST.**

The crop this year is short, less than half normal.

Order from your dealer or from us.

\$44.00 per cwt., f. o. b.

Ton lots. Special price on request.

From the fields to
OUR WAREHOUSE

From our warehouse
TO THE PURCHASER

Yuma Valley Produce Growers Assn.

Yuma, Ariz.



The Kresky Brooder Stove

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Is NOW Ready for Delivery

Burns COAL OIL

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Perfect

Automatic Regulation

Warms the FLOOR

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Produces Pullets that Lay EGGS

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Sales of pure bred and grade cattle and hogs conducted in California and adjoining states. References: The leading breeders in the state. Write or wire for dates and terms.

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FEED—COULSON'S EGG FOOD
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"CHICKENS FROM SHELL TO MARKET."
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PETALUMA, CAL.

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HEALTH FOR CATTLE

REMEDIES FOR

Cow Cleaning,
Breeding and Abortion,
Scouring Calves,
Hog Cholera

An Insect Destroyer
A Poultry Food

**LAMBERT STOCK
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The direct selling method from producer to consumer, and a clearing house for over 35,000 subscribers. Weekly Liner rates: Single insertion 3½¢ per word; 35¢ per issue minimum charge.

Mail all classified copy to Los Angeles Office

POULTRY

Baby Chicks. We are now filling our hatcheries in preparation for the fall season which will soon be in full swing, and we can make deliveries in small or large quantities of the following kinds of chicks: R. I. Reds, Barred Rocks, White Leghorns, Brown Leghorns, Anconas, White Minorcas, Blue Andalusians and Mammoth Bronze baby turkeys. Send for our prices and place your order as early as possible so as to be sure of getting your chicks at the time you want them. Pioneer Incubators, Brooders, supplies, etc., always on hand. **PIONEER HATCHERY**, 320 S. Spring Street, Los Angeles, California.

S. C. White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Now booking orders for this Fall and next Spring delivery. Prices and terms gladly sent on request. Hatchers and shippers of Baby Chicks since 1898. **MUST HATCH INCUBATOR COMPANY**, 438 Seventh Street, Petaluma, California.

Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. **L. W. Clark**, 615 Main Street, Petaluma, California.

ATASCADERO POULTRY FARMS

ATASCADERO, CALIF.
S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write **Henry Miller, Supt.**

White Leghorn Baby Chix from heavy laying **HOGANIZED STOCK**. Safe arrival of full count, live, strong chicks guaranteed. Price list and interesting literature on application. **The Pioneer Hatchery**, 409 Sixth Street, Petaluma, California.

Raise Fall Chicks—We will have them every week. **R. I. REDS, BARRED ROCKS, WHITE LEGHORNS**. Write for special circular. See why they pay. **Stubbe Poultry Ranch and Hatchery**, P. O. Box 67, Palo Alto.

White Leghorn Baby Chicks from Extra heavy layers, all Hoganized. Booking orders NOW for fall and spring of 1921. Safe delivery guaranteed. **HICKS ELECTRIC HATCHERY**, R. 2, Box 22, Petaluma, California.

Barred Plymouth Rocks—"Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. **Charles H. Voden**, Los Gatos, California.

White Leghorns—Chicks and hatching eggs from the home of heavy layers. Spring orders being booked. Send for price list. **Curtis White Leghorn Ranch**, R. 1, Box 29, Gardena, California.

White Leghorn Chicks that grow and make fine layers, from Hoganized and trapezoid stock; 100 or 1,000 lots; booking orders for 1921. **Forster Brothers**, 2918 Otis Street, Berkeley, California.

For Sale—Pullets \$2.00; Cockerels \$5.00 each and upward. **White Leghorn, Brown Leghorn, White Rock, Mahajo Farm**, P. O. Box 597, Sacramento, California.

Eastman's Bred-to-Lay Hoganized and Trapednest Barred Rocks. FALL CHICKS. Fairmead Poultry Farm, Fairmead, California.

Day Old Chix—Barred Rocks, R. I. Reds, Buff Orpingtons, Black Minorcas, Anconas, Buff, White and Brown Leghorns. **Enoch Crews**, Seabright, California.

Thoroughbred Barred Plymouth Rocks. Mrs. M. A. Warren, 36 Little Delmas Ave., San Jose, California.

I Will Hatch Your Eggs five cents each, \$4.00 per hundred. **M. Romer**, 7304 Beach Street, Los Angeles, South 2376W.

Baby Chicks from selected egg type S. C. White Leghorn hens. **Tupman Poultry Farm**, Box 7-C, Ceres, California.

MISCELLANEOUS

Powerene is Equal to Gasoline at 5c a gallon. Salesmen and agents wanted. Exclusive territory granted. Powerene is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed, power. An amount equal to 20 gallons of gasoline sent to any address in the United States, charges prepaid, for \$1.00. **W. Porter Barnes**, Box 424A32, Santa Rosa, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the **Engineering Service Company**, 1316 Washington Building, Los Angeles, California.

I Have Cash Buyers for salable farms. Will deal with owners only. Give description and cash price. **Morris M. Perkins**, Columbia, Mo.

Hemstitching and Picotting Attachment—Works on all sewing machines; price \$2.00; personal checks 10c extra. **Light's Mail Order House**, Box 127, Birmingham, Alabama.

Avoid Law Suits by having your property lines properly surveyed and established by the **Engineering Service Company**, 1316 Washington Building, Los Angeles, California.

TURKEYS

Bourbon Red Turkeys, Buff Orpingtons. **The Ferris Ranch**, S. Reservoir, Pomona, California.

SALESMEN WANTED

Men With Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write **J. H. Yetter**, 115 North Broadway, Los Angeles.

CATTLE

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. **T. T. Miller, Hollister**, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. **A. W. Morris & Sons**, Woodland, California.

For Sale—80 head Hereford and Shorthorn Steers, coming two and three years old. **Middledale Farms**, Goshen, Oregon.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. **John Lynch Ranch**, Box 321, Petaluma.

Registered Holstein Bulls, various ages at **Nuevo Stock Farm**, Wineville, California. **E. R. Stalder**, owner.

Registered Holstein Bulls of various ages for sale. **Millbrae Dairy**, Millbrae, California.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

SEEDS AND PLANTS

For Sale—Limited Banner Strawberry Plants. These plants average 10 tons to the acre. Grown at the foot of Mount Shasta. Place orders while they last, 60 cents per dozen; 100,000 lots \$20 per thousand. **J. C. BELL**, Castella, Shasta County, California.

For Sale—Strong Mountain Grown Banner and Brandywine Strawberry plants for fall planting, two dollars per hundred by mail post paid. **B. BRYAN**, Camp Baldy, California.

Reliable Cabbage Seeds—I grow them. You want them. Let's get together. Write me for special trial offer on just what you will need. **Isaac F. Tillmuth**, 40 Podel Street, Santa Rosa, California.

For Sale—Mellilotus Clover Seed. Order now. Get my prices. **Ketscher's Nursery**, Phone 572-W, 1101 E. Fourth Street, Santa Ana.

For Sale—Winningstadt Cabbage Plants. Immediate delivery. **E. Willard**, Vinolo Station, on Santa Ana Line near Stanton, or address **Anaheim R. No. 1**.

Pumpkin Seed—Mixed Pumpkin Seed, good germination, 25¢ per lb. **Aurora Seed Mill**, Stockton, California.

For Sale, about a million cabbage plants of different varieties. **L. C. Johnson**, Pomona.

WANTED

Wanted—Experienced Rancher to operate apple and pear orchard, 6 miles from Victorville, Victor Valley; 45 acres in six, five, four, three year old trees; two good wells, eight inch concrete irrigating pipe to each row trees. In return for your operating expense after three years you get one-third interest in the entire ranch. A good and big opportunity for the right man. Three-room house 6 miles from town. Privilege to buy on easy terms. **Buenaman Ranch**, 901 East 8th Street, Los Angeles, California.

Wanted—Walnut Meats and Cull Walnuts. We have been in this business 15 years, solicit culls for cracking only, paying cash. **Fred L. Mitchell & Son**, 214 French Street, Santa Ana, California. Phone 551-M.

Wanted—Position as all-around ranch foreman by married man; specialty of pure bred swine. Address "Mc," Cultivator, Los Angeles.

Wanted—Utilitor or Beeman. Must be reasonable in price. **S. W. Funk**, Charter Oak, California.

Wanted—Ayrshire heifer calves, within 50 miles of Santa Cruz. Address **Leighton Newcomb**, Santa Cruz, California.

Wanted—Good Ranch Hand, single man preferred. Address **C. C. McMahan**, 803 N. Spadra Ave., Fullerton.

TREES

50,000 Florida Sour Stock; 100,000 California Sweet Seedling orange seed-bed stock, 15 months old, suitable for fall planting. It will pay you to plant this fall. **SOUTHLAND NURSERIES**, 1941 East Colorado Street, Pasadena, California. Phone Colorado 6352.

For Sale—Placencia Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. **Ketscher's Nursery**, 1101 E. 4th St., Santa Ana, California. Phone 572WK.

Kadota and San Pedro Figs—Two promising early money makers for Southern California and other parts of the state. Write for particulars. **W. T. Kirkman, Sr.**, 1075 Topeka Street, Pasadena, California.

For Sale—A few thousand Peach and Plum trees. Write for prices, grade and varieties. **Imperial Valley Nursery and Seed House**, El Centro, California.

For Sale—Wonderful Pomegranate, French Prune Trees, Rooted Grape Vines. **W. M. Burton Nursery**, Box 43, Porterville.

Citrus Nurseries, **Murphy Oil Company**, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—Three thousand Mission and Manzanilla olive trees. **York Nurseries**, Highland, California.

Fruit Trees—Berry Plants scarce, order now. **Cash Nursery**, Sebastopol.

DUCKS

For Sale—10 Pekin Drakes and 6 Pekin Ducks, 6 months old, \$2.00 each. **Geo. E. Kadeleff**, L. Box 146, Springville, California.

Mammoth White Pekin Duck Eggs \$1.00 per dozen. **A. Surtman**, Petaluma, California.

BERKSHIRES

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Orland, California.

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The Only Herd of English Berkshires in the west. Bigger, better, stronger litters. More pounds of meat for less feed. Weanling pig \$35. Satisfaction guaranteed or money refunded at once.

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Grape Wild Farm—Berkshires, Guernseys. Big Type Berkshire Boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion. **A. B. Humphrey, Prop.**, Escalon, California.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. **Calac Orchards**, Martinez, California.

Real Good Berkshires, cholera immune. **Frank B. Anderson**, Box 724, Sacramento, California.

DUROC-JERSEYS

Borge's Big Duroc Jersey Hogs—Herd headed by California Golden Model 3rd. A few choice females of desirable breeding for sale at very low figures. I am offering for sale the tried boar **Dos Palos Chief** (an Orion Cherry King Jr. boar). Here is an opportunity to secure a tried sire at a very low figure. Satisfaction assured. Write at once. **Jack Borge, Dos Palos, California**.

Durocs—March, April and May farrow, the large and smooth kind. Boars and gilts by Orion's Johnson Defender. You'll Do and Gano families. Write for prices and description, or write just what you want. If I haven't it will tell you. Every pig sold must be right or no sale. Mayflower Thoroughbred Stock Farm, E. Bakersfield, California, **John Kincaid**, Prop.

Lamb's Durocs—Seven good sows with litters, twenty open gilts ready to breed, weaned pigs, two good boars. All of best blood lines. Priced right to close out the herd. Satisfaction guaranteed. **Elmer Lamb**, Ceres, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. **Harvey M. Berglund**, Dixon, California.

For Sale—6 thoroughbred Duroc Boars, 2 thoroughbred sows. Always a good stock of thoroughbred Durocs on hand. Address: **Paul Zucco**, Independence, California.

Bargains in Bred Sows and Gilts—Pathfinder and Great Wonder I Am blood. **Derryfield Farm**, Capitol National Bank Bldg., Sacramento, California.

Durocs—Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. **J. L. Stevenson**, Van Nuys, California.

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. **Hollow Hill Farm**, B. W. Shaper, Manager, Colton.

Winsor Ranch Durocs—Boars and bred gilts of our own and eastern breeding. Write us your needs. **Morris C. Allen**, Manager, Bonita, California.

December and March Duroc boars; Pathfinder breeding. **Sterling Smith**, Route 1, San Diego, California.

For the Best in Durocs write June Acres Stock Farm, Davis, California.

POLAND-CHINAS

I Would Sell My topnotcher boar by Kings Big Bone Leader; two bred sows by Long Smooth Jumbo; also spring pigs—everything big type stuff. **H. Christian**, Arlington. Write me.

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. **J. A. Crawshaw**, Hanford, California.

The Grand Champion El Profito heads our big type Poland Chinas. Letters promptly answered. **Viola L. Renwick**, Santa Barbara, California.

Tohoga Big-Type Polands—Young pigs to sell. Champion big-type breeding. **Ferguson & McKaig**, Orland, California.

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For Rent—A four room dwelling with fireplace, a good cooking stove, two iron bedsteads with springs and mattress can go with it. 5 acres of orchard and garden; rich soil and abundance of water for irrigating; free fuel and use of mineral water, pasture for cow. All this for \$10.00 a month. Party should have small truck or automobile. Address: **John T. Busch**, Busch Springs, Potter Valley, California.

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300,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book **THE HOMESSEEKER** which tells you where this land is and how to acquire it, or send \$2.00 for book direct. **The Homeseeker**, Dept. M, 336 S. Broadway, Los Angeles, California.

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On boulevard to city, only 2 miles RIT town; 110 acres rich tillage, this year 70 acres fine wheat, 20 acres corn, 5 acres beans; 5 acres oranges, lemons, grapefruit, olives, almonds, walnuts; 2-acre pepper tree grove, surrounded by great fruit farms; bungalow 6 rooms, bath, cement cellar, piped water, magnificent shade trees, big barns; good cottage, blacksmith shop, poultry house, corals for 1500 birds, new garage; aged owner has made money, retiring; quick buyer gets good pair mules, Jersey cow, lot machinery, tools, poultry, etc., everything \$14,750, easy terms. Details this and many other Southern California orange groves and farms page 91 Strout's Big New Illustrated Catalog Farm Bargains 33 States. Just out. Copy free. **STROUT FARM AGENCY**, 503 E. J. Wright-Callender Bldg., Los Angeles, California.

For Sale by Owner—20 acre orchard of young lemons; ideal location, best of soil. Oranges on this place at the time of the big freeze of several years ago were not affected; no firepots were used. There has been from 1500 to 3000 chickens on this place for the last 8 years, practically no manure has left the place. Cement pipe distributing system throughout. Both gravity and pump water. Small family orchard. Everything goes with place, including chickens, horses, several head of cows, implements, etc. All buildings practically new. One 6 room house, lath and plastered with screen sleeping porches and screen dining porch, bath and electric lights. Also one three room cottage. Price \$40,000 if taken before December 1st. If interested write **R. F. D. 1, Box 36, Escondido**, California, for further information.

For Sale or Lease—400 Acres Improved, 7 miles south of Tulare, \$125.00 per acre; 90 acres of alfalfa can be plowed up for cotton or grain. 160 acres improved 5 miles south of Shafter in Kern County, \$225.00 per acre, 54 acres of alfalfa can be plowed up for cotton or grain; cotton demonstration on two sides. 80 ACRES improved ½ mile from Rosedale store, Kern County, \$200 per acre, partly to cotton and corn now. Possession of either ranch this fall and if not sold soon will lease for crop shares or cash. Shallow water lift and pumping plant on each ranch and all are good land. Owner, **W. F. MARKS**, 1318 West Third Street, Los Angeles, California. Phone: 52471.

FOR SALE AND EXCHANGE
10-20-40-60 and 80 acre ranches, rich, level, plenty water; proven grape (Thompson seedless), fig and alfalfa land. Price right, easy terms.

FOR SALE
Some of the finest dairies in the state. **Chas. McNeely**, Alhambra, California.

For Sale—46 Acre Alfalfa Ranch, good as any in state. Part cash, balance 5 years. Ranch will pay out in five years as dairy. Will sell 60 to 75 tons alfalfa hay with ranch. You must see this place to appreciate it. Full set buildings on ranch. If interested call or write, **John Salaberry**, Chowchilla, California.

For Sale—\$5000. Clear 104 acres Mattole Valley land. 50 flat bottom, 8 bearing orchard, 14 cleared, on county road; 6 rooms and 5 other buildings; river, creek, springs, fish and deer, million feet saw-pine. **E. T. Gray**, Box 524, Arcata, Humboldt County, California.

Beautifully Located and Improved Income
10 acre mixed ranch, \$12,000. Consider city or cheaper land. **Hord**, 629 East First, Long Beach.

For Sale—Ranches, Homes, Acres, free list. **Wilson Bros.**, Santa Cruz, California.

Irrigated Alfalfa Ranches for sale. Other crops, plenty water. **C. I. Graves**, Fallon, Nevada.

Bishop Land Co. can furnish from 5 to 1200 acres of the best land in the valley. Address **Bishop**, California.

Fifteen Acres Best Pear Land, half pears and prunes, \$400.00 per acre. Box 328, Lakenort, California.

Irrigated Farms—Five acres and up. **Alex. Murdock**, Brentwood, California.

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FOR SALE—WILL SELL THE FOLLOWING IMPLEMENTS AT BARGAIN PRICES TO MAKE WAY FOR FALL PRODUCTION. THEY ARE LATE MODELS, CLEAN AND BRIGHT.

2 Heavy duty 4 disc plows
3 S-R Tractor disc plows
1 Four disc stump-puller plow
2 Deep tilling machines (16 to 18 in. deep)

1 Cunningham pulverizer (6'x18" diam.)
1 Cunningham pulverizer (6'x24" diam.)
1 California land roller 8 foot
1 Hop and Vineyard disc plow
1 Set stump-jump harrows
6 Ridging and furrowing plows

10 Four foot disc harrows
6 Sets steel drag harrows for Fordsons
1 Rotary harrow 6 ft (700 lbs.) for tractor
1 Johnson Road Scarifier

1 Disc Cultivator and Weeder, Fordson size (for killing morning glories, etc.)
Eveners—Doubletrees—Neck yokes—¾-in. Cables for attaching implements to tractors. Call or write for circulars.

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All material rebuilt if necessary, closely inspected and guaranteed to do the same work as the new material you buy at half the expense. Think it over. Carry most all sizes cylinders, Redwood, iron Tanks and all sizes windmills. Mail orders receive personal attention. Call, write office **Demmitt Co.**, 120 North Main, 15191, Broadway 1984, Los Angeles.

Tractor Bargain for Sale—12-20 Yuba, like new. This is absolutely the best buy in a used tractor we have ever offered—cost \$3200—used 21 days—price \$1800. Address: **Leonard B. Fletcher**, San Fernando, California.

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Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. **The Kruckeberg Press**, 237-241 Court St., Los Angeles.

LIVE STOCK

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

I Am Offering for Sale 800 head of 2 and 3 year old Ewes—"full wool sheep"—either in car load lots or more as may be desired, "110 head per car". For further information write: F. H. Rice, Holtville, Imperial County, California, Route A, Box 229 1/2.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

RABBITS

New Zealand Reds—Young stock. Reasonable prices. Josephine Spencer. 1915 21st St., Sacramento.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

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Farmers, Miners, Builders—people in every kind of business are saving money buying used or renewed pipe from us. We sell every kind of pipe. Send in a list of your requirements today and get our prices. We have saved hundreds of people 33 1/3 to 50% on their pipe bills. Here's a partial list of some of the miles of pipe we have in stock for immediate delivery:

8000 ft.	6-Inch Riveted	16 gauge
700 ft.	8-Inch Riveted	16 gauge
5000 ft.	12-Inch Riveted	12 gauge
1000 ft.	18-Inch Riveted	12 gauge
800 ft.	22-Inch Riveted	14 gauge
300 ft.	24-Inch Riveted	14 gauge
500 ft.	36-Inch Riveted	12 gauge
10,000 feet	light wrought iron 8-Inch pipe with cast iron collars.	

All above pipe thoroughly overhauled and inspected and ready for immediate use.

We also have large quantity standard pipe and screw casing, pressure tested and guaranteed.

Don't delay—write for our prices on your pipe requirements today.

PACIFIC PIPE COMPANY
237 Howard St., San Francisco, Cal.

COMMERCIAL AND PRODUCTIVE COTTON INTERESTS

The cotton industry of the Southwest has become such a factor in the upbuilding of that section that cotton growers, cotton handlers and others interested in the country's welfare have felt for some time there should be formed an organization which should have to do with its commercial and even its larger cultural interests. At the time of the first meeting of horticultural commissioners and others, which was to have been held in August in Los Angeles but which was recalled because of the absence of Director Hecke in the East, a preliminary meeting was held at the chamber of commerce at Los Angeles. This meeting adjourned and reconvened on September 14 at Los Angeles chamber of commerce. W. E. Keller, president of the Globe Milling Co. of Los Angeles, was made president of the organization; D. C. Mote, state entomologist of Arizona, secretary; George P. Clements of the L. A. chamber of commerce, assistant secretary. The name selected for the new organization was International Cotton League of the West. Various committees were appointed, including those on quarantine, pest control, legislation, labor, pure seed and general development of the cotton industry. In addition there was an executive committee consisting of Kenneth D. Oliver, Arthur Cardwell, A. L. Hobson, Jas. A. Pawley, Geo. H. Hecke, E. W. Hudson, Major Nicholson, A. Y. Greer and H. B. Atha. At an adjourned meeting held September 15 the following resolution was adopted:

"We, the International Cotton League of the West, in meeting at Los Angeles, California, September 15, 1920, urgently request the federal horticultural board to use their best endeavors to bring about a federal regulation making mandatory the cleansing and, if necessary, the disinfection of all railroad cars that have been used for hauling cotton seed and seed cotton, at the time and place of unloading."

The league recommended a meeting the first week in December at the call of the chairman and quarterly meetings thereafter.

A WAY TO FAME

Fame is very easily acquired. All you have to do is to be in the right place at the right time and do the right thing in the right way—and then advertise it widely.—Kansas City Star.

Household Department

MY GRAN'SON

My gran'son is a frisky lad,
With nose intensely freckled;
Not very good, nor very bad.
His conduct summat speckled.
He makes no efforts to excel,
For leadership's not wishin'.
But when he gits out in th' hills
He trims his gran'son's fishin'.

He ain't no use fer fancy lures,
Like flies an' silver spinners,
But when he's fishin' gran'son's sure
She'll have trout fer her dinner.
He'll go an' dig a mess o' grubs
From out some stump decayin',
An' make th' rest jest look like dubs
When he's his ketch displayin'.

When I am fishin' I walk light
Fer fear them fish'll hear me;
Just sneak along, keep out sight
An' don't want no one near me
But this young tyke just sloshes 'round
An' wades up through th' riffles
A-makin' all kinds of loud sounds,
But most partick'ier whistles.

What makes me sorest is when I
Have whipped some pool 'bout ketchin'
A single fish; he'll santer by
An' start in whoppers snatchin'.
His gran'ma says: "He's got th' knack!"
Knack nothin'! Luck's what ails him;
It's luck that fills his fishin' sack,
An' his luck never fails him.
—C. M. Jackson in San Francisco Bulletin.

GRANDMOTHER GOES DOWN THE MOUNTAIN

By Mary R. Reynolds in Farmers Wife



LOSE by the entrance of Big Cove huddled the rude, clay chinked log cabin. It was larger than many of the others, which one came on suddenly in sheltered nooks on the mountain, but The Outsider wondered, as she looked at its small dimensions, where sleeping place was found for all the little mountain boys and girls who called it home.

The roof was full of holes and the floor was bare and full of cracks. There were two beds in each small room, beds made of pine slats nailed together, and underneath each was a little trundle bed which was pulled out at night. The few rude and uncomfortable chairs were also of pine slat construction. There were no screens, no panes even, in the windows, and the only thing in the cabin that looked homelike to The Outsider was a row of canned fruit in a wall closet.

At an age when girls in the outside world are just entering high school, a mountain girl had married and gone as a bride to this cabin which consisted then of only one room. She had spent her childhood in poverty on the mountain, and, in poverty on the same mountain, shut away from the outside world, she was to spend most of her married life.

The days of the little bride soon became a dull, monotonous round of hard daily work varied only by the arrival of a new baby every year or two. Then even new babies, by the frequency of their arrivals, soon lost their novelty. In time two more rooms were added to the cabin, but the three provided none too much space to shelter the now large family.

Few neighbors came over the rough road that led past the cabin and there was no place to go except to a neighbor's, even if Mrs. Moore's family could have managed without her for more than a few hours at a time. Her daily life was as unvaried as the life of a woman back in the mountains can be.

Years went on; the children grew up and the older ones began to marry and go to homes of their own. Life was still unchanged for the woman on the mountain except that she now "tended" her grandchildren instead of her own children.

One day, about eight years ago, word came down the trail to Big Cove that a woman "from the outside" was going to hold a meeting in the schoolhouse "farther over" and that all the mountain women were asked to come. Here, at last, was something new and different, and Mrs. Moore, with a heart thrilled with excitement, walked the five miles that lay between her cabin and the meeting.

A home demonstration agent sent out by the United States department of agriculture and the state college had come up over the rough trails to tell and show the mountain women just how to can, a household art of which they were entirely ignorant. Mrs. Moore was one of the excited company that gathered to this won-

derful occasion.

The earnest attention given to The Outsider's every word and act would have flattered any public speaker, and most of those present by the end of the demonstration had learned at least the basic principles of canning. Government bulletins which explained just how to can in the most approved ways were given to the women to carry home and accepted by them as treasures indeed.

With a larger territory to cover than ever that which the old time circuit riders had, the home demonstration agent did not find opportunity to visit that particular mountain community for two years. When she came again it was to organize a home club, for now Alabama had enough home economics workers so each one could do more intensive work in her territory.

The first mountain home which she visited when she started out to enlist members for the club was Mrs. Moore's, and the first thing that caught her eye in the home were four yellowed and worn government bulletins hanging on the wall. They were the ones that she had given the mountain women at the meeting two years before. Afraid to leave them anywhere where the children might reach and tear them, their owner had nailed them to the wall so that they hung on a level with the eye. The neighbors were allowed to read them right there, under her eye, but she had never been able to persuade herself to loan one of these treasured gifts.

In a rude way, doing the best she could with what she had, Mrs. Moore had attempted to follow the instructions she had been given at the one demonstration and which were printed in the bulletin. The row of canned fruit to which she pointed proudly was the result of that year's efforts. Proudly The Outsider saw them.

At that time home clubs were unknown in that part of the Appalachians and Mrs. Moore listened eagerly to all the home demonstration agent told of other clubs in other parts of the state and nation, and what they meant to the women members. With a happy face, lighted by a desire to recapture the opportunities that should have been her youth's measure, Mrs. Moore asked to become a member and promised to follow all suggestions.

Such tomatoes as grew on her one-tenth acre club plot that year! In the regular garden she grew more and better vegetables than ever before and all that were not eaten fresh she canned. Early in the season she dug into her little savings and bought a canner, with which, under the tutelage of the home demonstration agent, she put up superior products. Her tins of vegetables were sold at an excellent profit that fall, and with the proceeds she bought a good cooking range, her very first.

A poultry club was then organized by the home demonstration agent and the little mountain grandmother became one of its first members. She built up her chicken yard, following directions given her by the club leader, until she had some of the best chickens on the mountain. At the same time she kept up her garden and canning work. During all this time she never missed a meeting of poultry or canning club, often walking miles to attend.

Last spring the manager of one of the largest estates in Alabama, hearing of the splendid work that this wonderful old lady up on the mountain was doing, offered to pay her expenses to the short course at the Alabama Girls' Technical Institute at Montevallo. It was necessary, however, to meet and satisfy her mountain pride before she would accept the opportunity which was offered her. Then she said she reckoned she could go, as she had one black dress saved.

So this glorious little grandmother went down the mountain and into the outside world, which she had never seen. No girl at the short course could rival her in eagerness and enthusiasm. It was the first holiday she had ever had and for the first time she rode on a train.

She went to every class given in the short course and the rest of the time she inspected the college. The letters she wrote back to her children

The Cultivator Patterns



BE SURE TO SEND SIZE

3101. An Attractive Model for Slender Figures—Cut in three sizes: 16, 18 and 20 years. Size 16 will require 5 1/2 yards of 36 inch material with 3 yards of ribbon or material 5 inches wide for the sash. Width of skirt at lower edge is 1 1/2 yard. Price 10 cents.

3152. Girl's Dress—Cut in four sizes: 6, 8, 10 and 12 years. A 10 year size will require 3 3/4 yards of 36 inch material. Price 10 cents.

3325. Ladies House Dress—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 6 yards of 36 inch material. The dress is of comfortable width at the foot. Price 10 cents.

3337. Child's Play Suit—Cut in four sizes: 2, 4, 6 and 8 years. A 6 year size will require 2 1/2 yards of 27 inch material for the dress and 1 1/2 yard for the bloomers. Price 10 cents.

3317. A New Gown—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 5 1/2 yards of 42 inch material. The width of the skirt at the foot is about 1 1/2 yard. Price 10 cents.

3339. Girl Dress—Cut in four sizes: 6, 8, 10 and 12 years. A 10 year size will require 3 3/4 yards of 36 inch material for a 10 year size. Price 10 cents.

3137. A Practical Apron Dress—Cut in four sizes: Small, 32-34; medium, 36-38; large, 40-42 and extra large, 44-46 inches bust measure. For a medium size 4 1/2 yards of 36 inch material will be required. Price 10 cents.

3340. Child's Dress—Cut in four sizes: 4, 6, 8 and 10 years. A 6 year size will require 4 yards of 27 inch material. Price 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very best NEW YORK styles, all patterns ordered are filled in NEW YORK. Therefore, we promise to deliver all patterns ordered within TWO WEEKS: we guarantee safe delivery of all patterns. Address

PATTERN DEPARTMENT
California Cultivator
Los Angeles

and grandchildren were full of the wonders that she was seeing and hearing. Perhaps the sight that fascinated her most was of the cows in the college barns being milked by electricity rather than by tired feminine hands, as they were on the mountain. However, "the big stove ten feet long with a soup pot that holds 25 gallons," "the mill hopper that they make light bread in" and "the poke stalks (asparagus) on lettuce" all came in for comment in her letters home.

Little escaped her keen eyes and she was tireless in seeing all that was to be seen, although she does confess in one of her letters that that day she had walked and looked until she had "hiccups in her legs."

When the last day came, the little grandmother wept as she thanked those who had made her good time possible, but her eyes were starry when she reached the cabin at the entrance of Big Cove and began to recount her adventures to her children and grandchildren.

All last summer she was busy putting into practice what she learned

at the short course. When the home demonstration agent visited the cabin last fall she found her in a splint rocker, rocking back and forth outside the door, singing short course songs to the newest grandchild. Proudly she displayed her thousand tin cans of tomatoes and beans which were for sale, and then still more proudly led the way to the home supply. Before her the astounded and deeply thrilled home demonstration agent saw the largest collection of canned fruits, vegetables and preserves that she had ever seen.

When they were once more seated outside, the good news was broken. Mrs. Moore had persuaded her husband to sell the poor mountain farm on which they had just eked out a living by the hardest work and to buy a little one in the valley.

The farm was bought this last winter and the Moores moved down from the mountain, which had been their home for so long. On the farm is a new farm bungalow and its mistress is the happiest woman in the valley. The home demonstration agent helped

the heroic woman pick out the furniture for the house. It was the first "store" furniture that she had ever owned, and every bit was bought with the proceeds from her club garden and chickens.

For some time it had been planned to have a demonstration orchard in the valley, and when the mayor of the town heard of Mrs. Moore's fine work and her faithfulness as a club member he offered to give her as large an orchard as it was thought she could handle. This spring of 1920 she prepared the ground and set out the mayor's gift of 35 peach trees, five apple trees, three pear, two cherry and six assorted grapevines.

The trees and vines will be cultivated according to directions given by the home demonstration agent and the orchard will be available at any time for demonstrations in fruit raising. The little mountain grandmother's general progressiveness has awakened up her valley neighbors and they are eagerly learning from her the new ways and following her enthusiastic progress as best they can.

HOUSEHOLD QUERIES

Three-in-One Dessert

Will you please publish recipe for Three-in-One Dessert, published in the Cultivator several years ago. It is a cream pie baked in the crust. When frosted it is cake; when served with a pudding sauce it is a pudding.—Subscriber, Santa Ana.

We remember publishing this "Three-in-One" recipe, but our recollection as to the time is no more definite than our inquirer's. We index many of the most called for recipes but it is not possible to index all. We have spent several hours looking through old files of the Cultivator, but have not yet been able to find it. Have any of our readers saved this recipe? If so, we will appreciate very much their sending it in and will extend subscription credit.

Syrup from Muscat Grapes

About the time that sugar became so scarce there was a recipe in the Household Department for making syrup from Muscat grapes. I lost my Cultivator that had it in. Will you please reprint.—Subscriber, Fallbrook.

In the Cultivator of October 12, 1918, we gave directions for cooking with grape syrup, making cookies, etc., in which Mrs. Linda McNeil spoke of gathering thoroughly ripe Muscats and making syrup from them which was very satisfactory as a sugar substitute; also of making syrup from peaches, adding while yet boiling half as much granulated sugar as syrup. This we hardly think is the recipe referred to by our subscriber, as it gives no method of making and counteracting the acid of the grapes. Our state university has published two bulletins on methods of making grape syrup in a commercial way, which are, of course, too complicated for household use, but do give some hints which the housekeeper may follow. For instance, these bulletins state that ripe grapes contain about seven per cent of tartaric acid which is best reduced by adding calcium carbonate to the grape juice. No proportions are given, but the bulletin states that an excess does no harm, as both the calcium carbonate added and the calcium tartrate formed are insoluble and may be removed from the juice (strain juice through cloth). If our inquirer is in a hurry she might experiment on a small scale, adding calcium carbonate and tasting, then filtering or straining the juice before boiling down to syrup. The Cultivator will request information from the state university and give in this department as soon as received.

Crush grapes, boil and strain to remove juice as for jelly making, add calcium carbonate as suggested, strain again and boil down to syrup. Common baking soda will counteract acid but remains in the juice in soluble form.

Have any of our readers found satisfactory way of making such syrup? We shall be glad to publish and give subscription credit for suggestions received.

Error in Recipe for Eggless Cake

Recipe for eggless cake given in Cultivator of September 11 omitted soda and baking powder. We are repeating entire for convenience of Cultivator housekeepers.

An eggless cake: One cup sugar, one heaping tablespoon any kind of shortening. Cream with the hands. Add one cup sour milk with one teaspoon soda stirred in, six tablespoons cocoa, two cups flour sifted with ½ teaspoon baking powder, pinch salt, teaspoon vanilla. Beat hard and bake in loaf.

Frosting: One cup powdered sugar, one tablespoon cold coffee, teaspoon vanilla and just enough milk or cream to work smooth. Beat well and spread on cake. I leave cake in tin and cut as we use it.—Mrs. W. E. Brown, Callipatria.

Pickled Red Cabbage

Can someone tell me how to make pickled red cabbage?—Subscriber, Watsonville.

Select a firm head of cabbage, cut in half and shred fine a sufficient amount of it to measure about two cups. Place the cabbage in a bowl and add 2 onions, chopped fine, 1 green

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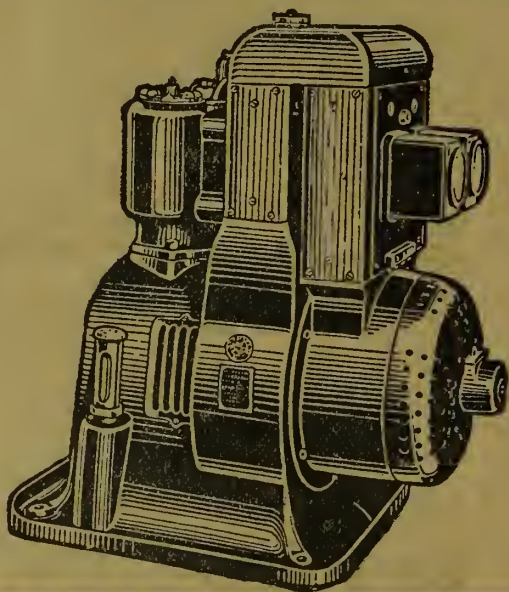
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pepper chopped fine. Now place in a saucepan 1 tablespoon bacon fat, ½ cup vinegar, 1 teaspoon salt, 1 teaspoon white pepper, ¼ teaspoon mustard. Heat to the boiling point, then pour over the cabbage, chill and serve.

HINTS FROM HOUSEKEEPERS

How we do enjoy reading the dear old Cultivator!

The Household Department is the first page I always seek, knowing full well from my experience of the past few years that I will be rewarded by finding something useful and helpful for the housekeeper, besides a jolly good uplifting story and poem thrown in the bargain.

Then each month the housekeeper can learn when and what to plant in her vegetable and flower garden besides other items of interest.

Let's give three cheers for our dear old Cultivator. Long may she live to help, comfort and cheer the hearts of all who will but seek her pages.

I am a firm believer in this old adage, "Some like roses white, some like roses red, but give me mine before I am dead." In plain facts, don't wait until someone is dead before you give your roses (words of cheer); they will appreciate them more while they are living.

I am sending a few suggestions and recipes which may help someone if you care to print them.

To Can Tomatoes Whole

Have ready your cans, tops and rubbers and two kettles and a teakettle of boiling water.

Be sure to select tomatoes slightly underripe and free from decay. Peel and cut out all green or hard parts; put them in your first kettle of boiling water. This cools the water. Now watch and as soon as the water is thoroughly boiling again fill your sterilized jars with the whole tomatoes, add one teaspoon of salt on top, fill to overflowing with boiling water from teakettle and seal at once.

Note—Do not scald tomatoes before peeling; use good sharp knife instead.

Second kettle of boiling water is to let your glass jars stand in while filling. Turn glass jars on side and put into boiling water, turn over and over quickly and glass will never break. I find it better to use just enough tomatoes to fill one or two jars at a time, then they will not be cooked too much, which makes them soft and mushy.

Tomato Catsup

To make tomato catsup that will not sour and at the same time Hooverize on vinegar, scald and peel ripe tomatoes, cook until soft. Let stand in warm place until they are sour, not moldy, but a good sour to the taste. Now press through sieve, and to one gallon of the tomatoes add two tablespoons salt, two tablespoons mustard, one of allspice, one of cinnamon, one teaspoon black pepper, one of ground cloves and one red pepper pod chopped fine without seed. Simmer an hour or more, until as thick as you like and put in jars, jugs or bottles and seal. Jugs and bottles can be corked tight and paraffine poured over. This makes the catsup plenty "spicy." I prefer about one-third or one-half gallon more tomatoes added to that much spice.

This is a good way to utilize tomatoes that are too ripe and soft to be canned whole.

I used about four tablespoons of vinegar to mix the spices before adding them to the tomatoes.

Mock Orange Marmalade

Take two cups carrot, cooked and put through meat grinder, 2 lemons, 1 orange, juice and ground up rind of each, and 1 cup sugar. Cook this mixture slowly until of consistency of marmalade in a covered receptacle (avoid burning). If made in quantity it should be sealed in hot sterilized jars because of the vegetable nature of the product. This is a very successful way of using old, woody carrots to a distinct advantage.

I used several of the cucumber pickle recipes in your recent issues, and liked them fine, only I Hooverized on the sugar and used one-third to one-half Karo syrup, either the dark or light, but not the new maple flavor.

Does anyone know how to can, preserve or pickle casaba?

Thanking you for all the help you have been to me, I will close, wish-

ing you the best of success.—Mrs. H. R. De Hoff, Oxnard.

ON THE TOILET TABLE

By MARTHA

An excellent cucumber wash for the complexion is made by heating the juice of fresh cucumbers to the boiling point, skimming and bottling. One teaspoon of this juice should be applied to the face night and morning, letting it dry on.

A fine nail polish is made of three parts of French chalk to one part of pulverized pumice stone. A little of this polishing powder is sufficient to give a nice luster to the nails.

If you live on a farm and make your own butter, you can make the nicest ointment for your hands by boiling a pint of fresh unsalted butter until it is reduced one-half, then adding a few drops of perfume. This keeps the skin soft and smooth.

An excellent lotion to keep the hair in curl or waves is made by soaking a few quince seed in warm water a few hours. Wet the hair with this and curl or wave it and let remain until dry.

One of the most useful articles one can have on the toilet table is a bottle of boric solution, easily prepared by dissolving one-half ounce of granulated boric acid in one pint of boiled water. To remove pimples, wash the face at night with Castile soap and warm water, then add a little of the solution to water as hot as can be borne. Dip a cloth in the water and apply to the face. This remedy has been found very beneficial and there is nothing better for the eyes if they are red and sore. This solution applied with a soft cloth after the bath will check perspiration and destroy the odor, and to sterilize hair brushes and combs, wash and dry them, then put three parts of the solution in one part water, dip the bristles in the water, let remain half an hour, then dry again.

To keep all articles of brass, silver and glass bright and shining, rub with a mixture of coal oil and whiting after they are washed clean. Then polish with a piece of soft flannel and they will shine like new.

COMMUNITY SINGING

Community singing is to receive a real impetus in California this year through the efforts of the extension division of the University of California, according to Director Leon J. Richardson, who today announced plans whereby the extension division can cooperate with any community in preparing, aiding, and presenting programs of national music.

Clubs, schools, community organizations or other bodies wishing to give an entertainment in the music of any nationality—America, England, Scotland and Ireland, Russia, France, Italy, Germany, Spain, the Orient, Scandinavia, Poland—may apply to the extension division, which will send a lecturer to the community to give an interesting illustrated talk on the life and customs, arts, and music of the folk of the particular nation.

Aid is also given in the preparation of the musical program. Local talent may be trained along lines suggested by the university extension division. If desired, soloists selected from among the best musicians in California may be assigned by the extension division to assist the community and to take the more prominent parts in the song festivals.

AUTO OPERATES MOVING PICTURES

An electric generator which can be attached to an automobile and supply enough current to run either a motion picture or stereopticon machine and to light a small hall is the latest innovation in the program of the University of California extension division to furnish movies to the remotest town, school or church in the state. It is now possible for any organization in the state to have its picture show at its meeting place whether there are proper electrical connections or not.

Some 233 motion picture reels on varied topics of wide interest are now available at the University of California extension division for use throughout the state. The films include industrial and scenic views from all parts of the world, an interesting assortment of motion pictures of the war, and on general topics.



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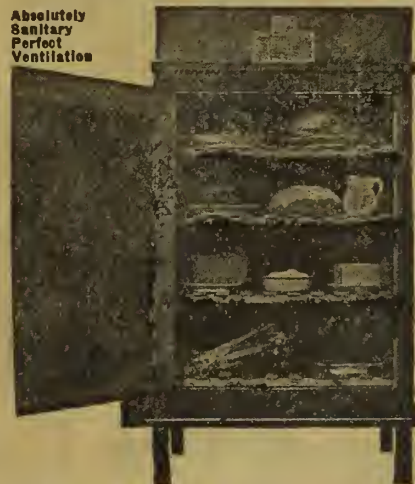
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Large beautiful Catalog free John Lewis Childs, Inc. Floral Park, N. Y.

Los Angeles Markets

Los Angeles, September 22, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 70 cents.

Dairy Exchange price last week on extras:

Sept.	15	16	17	18	20	21
'20	71	71	71	71	71	71

CHEESE

Brokers' prices:

California flats, 31@33.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 67 per dozen; case count Prod. Exch. closing price 64 per dozen; pullets, Produce Exchange closing price 58 per dozen; pewee pullets, 45

Dairy Exchange prices last week on extras:

Sept.	15	16	17	18	20	21
'20	66	66	67	67	67	67

POULTRY

Price to consumers: Hens, lt., 29; heavy, 32; colored, 35; broilers, 38@42; roasters, 38; old roosters, 14; fryers, 34; ducks, old, 23; ducklings, Pekin, 3½ up, 25; chickens, 23; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47.

Belgian hares, live, 15@19; old, 9.

LIVESTOCK

Los Angeles, Sept. 21.—Weighed and delivered off cars without food or water: Hogs (hard-grain): 125 to 175 lbs., 16.50; 175 to 225 lbs., 17.50.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, Sept. 21, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, market steady. Local: Early and White Rose, fancy No. 1's, mostly 1.00 and 1.25 per lug; 100 lbs. sacked No. 1's, mostly 2.50. Stocktons: Burbanks, quality, generally poor, 3.00@3.25 sacked. Sweet potatoes, lug, 1.10@1.40.

Onions: Local White and Yellow, lug, 75@1.00; 1.50@2.00 per 100 lbs. sacked. Stocktons: Whites, 2.35@2.60 cwt.; Browns mostly, 1.75@1.90.

Garlic, lb., 12@15.

VEGETABLES

These are the actual prices obtained Sept. 21 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 10@12; Limas, 9@10.

Beets: Doz., 35@45.

Cabbage: Supplies moderate, market steady, movement good, wide range in quality. Best mostly 3 per lb.; per field crate, best 2.50@3.00.

Carrots: Doz., 35@45; sack, 1.25@1.50.

Celery: Doz. bunches, 80@1.00; cr., 3.00@4.00.

Corn: Local, best 1.35@1.50 per box.

Cucumbers: Market steady; local, best, lug, 60@75.

Egg Plant: Lb., 4@6.

Lettuce: Field crs., 1.25@1.50.

Peppers: Bell and Chilis, lb., 3@5.

Squash: Local summer, lugs 85@1.25;

Hubbard, lug, 2.75@3.25.

Tomatoes: Local lugs, best mostly, 50@65.

Turnips: Per doz., 35@50.

DECIDUOUS FRUITS

These are the actual prices obtained Sept. 21 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal. Bushel boxes: Bellefleurs, 1.60@1.75. Local: Various varieties, 50@1.00 per lug; Jonathans, fy. large sizes, 3.00@3.25.

Bananas: lb., 11@12.

Cantaloupes and Melons: Cantaloupes

—Market steady, supplies liberal, quality and condition wide range. Local:

Tiptop and Paul Rose, pink meats, standard crates, best 1.75@2.00. Watermelons,

lb., ¾@1½.

Figs: Bx., 1.00@1.25.

Grapes: Muscats, Malagas, 6½@7½;

Tokays, 8@9; Cornichon, 8@10.

Peaches: Local, best, lug 2.25@2.50;

new fy., high as 3.00.

Plums: Lb., 5@8.

Pears: Bartlett's, best, lb., local, mostly

6@8; Northern mostly, 8@10.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 3.00@3.25; special packed brands, 3.75@4.25.

Lemons: Market dull, wide range in prices. Local stock: Packed, 3.00@3.50; loose, 1.25@1.75; lug, mostly 75.

Oranges: Supplies moderate, market strong. Valencias: Packed special brands, 126's, 150's and 176's, 7.00@7.25. Local packed, second grade, 4.00.

HONEY

U. S. bureau of markets: Movement limited, market unsettled, prices slightly lower account slump sugar market and financial stringency. Carloads f.o.b. usual terms: White Sage Orange, 18½@20. Extra light amber sage, 17½. Light amber sage, 16; light amber alfalfa, 15@17½; Beeswax: 38@44.

BEANS

California Lima Bean Growers Association, September 20.

The association has not yet commenced to quote and sell new crop Limas and baby Limas. The current market as indicated by quotations of independent

shippers has apparently shown a steady though not rapid decline during the past two weeks and stands now on the basis of about 9 cents on regular Limas and 8½ on baby Limas, f.o.b. coast. The harvesting is proceeding quite rapidly under favorable weather conditions and will be completed earlier than usual if present favorable weather continues for two or three weeks longer.

GRAIN AND FEEDS

Grain Exch. prices bid Sept. 21:

Barley: Carlots, on track, 2.07½@2.16½.

Bran: Kansas, 49.00@51.00.

Milo: Carlots, 3.16½@3.23; No. 3, Eastern Milo, blk., 2.35.

Corn: Blk., Yellow, No. 2, 2.72½.

Wheat: Utah-Idaho, S. B. delivery, 57.50@59.00.

HAY

Alfalfa Growers of California, September 22:

A number of our members have expressed the opinion that the association was accountable for the slump of several dollars in the alfalfa market about six weeks ago. This is not the case, but we admit that we did not consider it advisable under the circumstances to attempt resisting the decline; we felt safe in assuming that it would not be serious and that prices would soon adjust themselves again on a sound basis, which they did. The temporary decline was the result of outside growers forcing their hay on the market in excess of the current demand. Before the existence of the association, such an instance to attempt resisting the decline; naturally have assumed much larger dimensions, and would have led to glutting and demoralization of the market. The association is of course only able to direct distribution of marketing production of its members, and the extent to which it can be determining factor in the stabilizing of the market and in preventing unjustified declines is therefore dependent on the amount of marketing acreage in the association. Not a few of our members seem to be of the opinion that the association should all the time try to crowd up prices, but such a policy of "get all you can" would be as short sighted on the part of the growers as the "skin the farmer" policy of buyers proves short sighted in the long run. Your management considers as the most important task of the association that of protecting the grower against prices which are below cost of production, next to obtain for the grower remunerative prices, and after that to maintain these remunerative prices. It is plain that prices can only be maintained remunerative to growers in the long run, if they are in the same way also kept remunerative to our customers, the hay users and dealers. This is at the same time the only way in which a permanent solution can be found of the serious problem of the state, and nation wide shortage of the milk, butter, etc. production. To fully accomplish this in our state, our association must have more members and you can therefore do nothing that benefits you more than to bring into the association those of your neighbors who are still outside of it. According to the state horticultural commission there is now an embargo against all shipments of alfalfa from Utah and certain parts of Idaho and Colorado on account of the weevil. A. W. Scott's market report shows that the alfalfa weevil has also been discovered in Washoe and White Pine Counties, Nevada.

There were approximately 930 tons of hay of all kinds received on the Los Angeles tracks the week ending September 18 and 310 tons held over as against 1200 tons the week before.

Fancy dairy

No. 1 dairy alfalfa

Standard Dairy

Stock alfalfa

San Francisco Markets

San Francisco, Sept. 21, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations:

Extras

Dairy Exchange prices extras this

week and year ago:

Sept. 14 15 16 17 18 20

'20 ... 69 69 67½ 68½ .. 68½

'19 63 63 .. 64½

CHEESE

Dairy Exchange quotations:

Jack, full cream

Jack, half skimmed

Cal. Y. A.

Ore. Trips

Cal. Flats

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras

Extra Pullets

Undersized

Dairy Exchange prices, extras this

week and year ago:

Sept. 14 15 16 17 18 20

'20 ... 71 71 70½ 71½ .. 72½

'19 61½ 62 .. 67½

POULTRY

Wholesale prices are:

Broilers, 42@45. Colored fryers, 2 lbs.

to 3 lbs., 38@43, market firm. Colored

young roosters (smooth), 3 lbs. to 4 lbs.,

43@45; stags, 25@27. Old roosters

(colored), 20@23, market firm. Leghorn

hens, 3 lbs. and over, 28@30. Large

colored hens, 38@42, market firm. Young

Pekin ducks, 28@32; old ducks, 23@25;

young geese, 28@32, market easy.

Dressed turkeys: Young, large, 60@65,

market firm; old, 40@45; live turkeys,

young, 50@60; old, 43@50, market firm.

Live Belgian hare, 18@22; dressed, 25@30.

Squabs, large, 55@60 lb., market firm.

Pigeons, 3.00@4.00 dozen, market firm.

LIVESTOCK

Western Meat Company prices are: Cattle: Grass steers, No. 1, weighing 1000 to 1200 lbs., 9@9½; do, 1200 to 1400 lbs., 8½@9; do, second quality, 7@7½; thin, 5½@6.

Cows and helpers: No. 1, 7½@8; second

quality, 6@7; common to thin, 3@4.

Calves: Light weight, 10@11; medium,

8@9; heavy, 7@8.

Lambs: Milk, 9@10; yearlings, 7½@8.

Sheep: Wethers, 7@7½; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 15; 150

to 225 lbs., 16½; 225 to 300 lbs., 15½; 300

to 400 lbs., 14½.

The California Farm Bureau Market-

ing Association reports sales:

Modesto, September 7

No.	Av. Wt.	Dock	Price
8	181		\$15.50
6	265	20	15.30
92	198	20	15.10
33	189		15.10
17	147		14.80
14	385	280	12.80
2	415	330	11.80

Two cars, 19 consignors.

Tegner, September 8

45	213	..	15.25
18	194	..	14.75
7	268	..	14.75
7	253	..	12.75
36	135	..	12.10

Two cars, 27 consignors.

Sacramento, September 11

73	204	..	16.00
58	233	..	15.60
41	177	..	15.55
70	248	..	15.20
12	394	..	14.10
12	303	120	13.55
50	152	..	13.55
25	112	..	11.80
12	238	150	10.50

Four cars, 17 consignors.

HIDES

Hides: No. 1 heavy, 55 lbs. up, 15 per lb.; medium, 45 to 55 lbs., 15c; light, 30 to 45 lbs., 15c; native bulls, 12c; center

branded hides in all grades 2c less base

price and No. 2 center branded 3c less.

No. 1 wet salt kip, 15 to 30 lbs., 16c;

No. 2 do, 15 to 30 lbs., 14c; No. 1 wet salt

calf, trimmed, 24c; and do, untrimmed,

19c; No. 2 calf, 2c lb. less. The price of

No. 2 hides will be 1c less than the price

of No. 1.

No. 1 dry, 16 lbs. and up, 25c; kip, 7

to 15 lbs., 26c; calf, under 7 lbs., 28c;

dry stags and bulls, one-third less than

dry hides; dry glue hides, kip and calf,

one-third price or less, according to quality;

pickled hides and skins, 3c less than

dry flint; dry salted hides and skins, 9c

less than dry flint.

Pelts: Long wool, 9 to 12 months, 1.50

up; medium, 6 to 9, 75@1.25; short, 3 to

6, 40@70; shearlings, good, 1 to 3, 10@15;

do, shaved or damaged, up to 10c; lambs,

large, long wool, 50c up; lambs, small, 15

@30; milk lambs, 5@15.

POTATOES AND ONIONS

Potatoes, per cental: Delta, 2.25@2.50;

choice, 2.75@3.00; sweets, 4½@5 lb. for

No. 1.

Onions: New reds, 50@60; yellows, 1.75

@1.25 cwt.; brown, 1.25@1.35; Garlic, new,

10@12½.

VEGETABLES

Wholesale selling price:

Artichokes: Doz., 25@1.00.

Beans: Lb., Strang, 7@9; Lima, 12@14.

Carrots: Lb., 2.

Cucumbers: 35@50.

Cabbage: Lb., 1@2.

Celery: Doz., 30@40.

Corn, 2.00@4.00.

Eggplant: Livingston, lug, 75@1.25.

Lettuce: Doz., 30@35.

Okra: Bx., 1.00@1.25.

Peppers: Bells, bx., 50@75.

Peas: Lb., green, 8@12½.

Rhubarb: Lug, 1.75.

Spinach: Lb., 4@7.

Squash, Summer: Sacramento, lug, 50

@65.

Tomatoes: 35@75 lug; fy., Stone 75@

1.00.

FRESH FRUITS

Apples: Gravensteins, fancy, 2.25@3.00;

B grade, 1.75@2.25; Bellflowers, 1.50@1.75;

Rhode Island Greenings, 1.50@2.00; Jonathans, lug, 2.50.

Avocados: Florida, doz., 7.00@9.00; Cal.

Blacks, doz., 1.50@2.00.

Bananas: Lb., 10@11.

Berries: Strawberries: 8-oz. baskets,

60@75 per drawer; 12-oz. basket, 1.00@

1.10; raspberries, 70@80 per drawer; black-

berries, 40@50.

Cantaloupes and Melons: Turlock cantaloupes, standard, 50@75; do, Modesto

Pink, 1.00@1.50; ponies, 75@1.00; flats,

40@50; Sacramento, 50@60 per lug; cas-

sabas, 75@1.00 per crate; watermelons, 1c

per lb.; honeydew, 75@1.00 per crate;

Muskmelons, 50@75 per large crate; Pers-

ians, 1.00@1.50 per crate.

Figs: Double, 1.00@1.25; single, 60@85;

White, 50@1.00.

Grapes: Black, 1.75@2.00 per crate. Seed-

less, 2.00@2.25; small lug, 75@1.25; 2.00@

2.60 per big

10.00, 1em. 1.00-3.05.
Boston: 7 or. Val. 4.05-7.40.
Philadelphia: 3 or. 3 lem. Val. 1.65-
8.40, 1em. 1.00-3.25.
St. Louis: 1 or., 1 lem. Val. 4.10-7.45,
1em. 2.35-3.15.

STATE FAIR NOTES

(Continued from Page 415.)

the Poland China breeders at a meeting held the week of the state fair when it was decided to raise the annual dues from one dollar to \$15. The money will be used in breed promotion work. At the same meeting an additional amount near \$500 was subscribed. The following officers were elected for the ensuing year: George V. Beckman of Lodi, president; J. F. McSwain, vice president; H. K. Dickson of Bakersfield, secretary-treasurer; J. F. Lehman of Lodi, A. Buckland of Fresno, H. L. Graham of San Fernando and R. J. Yates of Orland, directors.

* * *

One of the pleasant affairs held at Sacramento during the week of the state fair was the annual dinner given by the Western Berkshire Congress. The breeders present felt that they had made marked progress during the year, and the general opinion was expressed that the coming year would find the breed nearer the goal that has been determined upon. At the meeting it was announced that the resignation of the field representative, Bruce S. Bennett, had been tendered and accepted.

* * *

At the annual meeting of the California Jersey Cattle Club the following officers were elected: Judge Peter J. Shields, Sacramento, president; J. E. Wherrel, Riverside, vice president; Professor V. C. Bryant, secretary; N. H. Locke, Lockeford, treasurer. Other members of the board of directors are: E. Greenough, Merced, and S. F. Williams, Chico.

LIVESTOCK NOTES

Judging teams representing 11 high schools and consisting of 131 boys were entered in a judging contest held the opening day of the fair. Each school was represented by a team of three boys. The Lodi school was awarded first place, Esparto second, Napa third and Kingsburg fourth.

Harry L. Redd, one of the most successful Holstein herdsman in the West, formerly with W. J. Higdon of Tulare and more recently with E. D. Barry Jr., Daggett, has just accepted a position with the Jane Garden herd, owned by Fred W. Keisel of Sacramento.

William A. Ward of the firm of Easton and Ward, owners of the Blackhawk Ranch, Diablo, has just returned from a trip to the British Isles in search of Shorthorns. Ward states that cattle values are on a very high level in England and Scotland and that it is almost impossible to make selections at private treaty. E. Lovell, manager of the Blackhawk Ranch, who accompanied Ward, remained in Scotland in the hope of being able to select a shipment from the October sales. Ward declared that the showing made at Sacramento was in many respects better than the leading shows he attended abroad.

Announcement has been made of the formation of a Milking Shorthorn calf club to be inaugurated in the community around Brown's Valley. This will be the first club of the kind to be started in this state.

It is expected that within the next few weeks the first Hereford calf club to be established in this state will be in operation at Esparto. The choice of Herefords was made in view of the fact that several of the best herds in the state are near that community.

George Phillips, shepherd at the university farm, Davis, has recently returned from an extensive visit to his old home in Scotland. Phillips brought over an extensive shipment of sheep for the Anoka Farms of Wisconsin and also a select lot for his own account.

The big sale of the well known Rosamaines Rancho to be held October 19, 20 and 21 has probably attracted more attention than any sale held in this state in years. The entire rancho, which is regarded as one of the most modern breeding plants in California,

together with the complete herd of Holsteins and all the ranch equipment, will pass under the hammer on the above dates. The arrangements for the mammoth sale are in charge of C. L. Hughes of the California Breeders Sales and Pedigree Company, Sacramento, and the auctioneer will be Col. Ben A. Rhoades of Los Angeles. Hughes states that he is receiving inquiries from all over the country and attributes the wide interest to the desire of many Eastern livestock men to operate in this state because of our many superior conditions.

When the Wilotta herd of Shorthorns, owned by William Pierce of Suisun, is sold September 30, it will mark the passing of one of the oldest herds owned in this state. Years ago this herd was conducted under the name of Rush and Pierce and during its active life was counted one of the strong collections of the breed. The herd has always been maintained at Wilotta Ranch and now that the land is in such demand for fruit growing it is no longer practical to attempt to keep the herd together. A feature of the herd that is proving of interest is the unusual amount of King Edward blood to be offered. King Edward was owned by T. S. Glide of Davis and is generally credited as being responsible for greater amount of improvement in the Shorthorn industry of this state than any other bull. The sale will be managed by the California Breeders Sales and Pedigree Company, Sacramento.

The livestock interests of this state will be interested to learn that William Cox, for a good many years in charge of the Herefords owned by the Hereford Corporation of Wyoming, is now in charge of the William Briggs herd near Dixon. Cox is a thorough cattleman and with the class of cattle he will have to work with will doubtless prove a factor in the Hereford business of this state.

J. E. Thorp of Lockeford was awarded a special prize at the recent San Joaquin County fair for having the best score of livestock entries.

R. L. Holmes of Modesto won the county supervisors' challenge cup at the San Joaquin County fair, offered for the best livestock exhibit.

The University of California recently sold the yearling Percheron stallion, L'Aiglon, to a buyer from the Hawaiian Islands. This colt was bred by the animal husbandry division and was sired by Aiglone and out of the mare Poule of Paicines. He is a dark gray of excellent stamp and is one of the best yearlings seen in this state for a number of years.

THE LAST RESORT

"There's one thing left. If this business venture of mine fails I know what I shall have to try next."
"What's that?"
"I shall have to begin writing plays for the moving picture people."

AVOCADO ASSOCIATION TO HAVE AN AVOCADO LUNCHEON

The California Avocado Association will hold its semi-annual meeting on October 9 at Hotel Pasadena (the east side of the Hotel Green), Pasadena.

This meeting will differ somewhat from former meetings as it will last only one day, and they will serve an avocado luncheon instead of the usual evening dinner. This lunch will be the main feature of the day, being a complete meal with avocados served in every course. It will also include several speeches by well known avocado men who will give short talks on subjects of general interest to growers.

There will be a display of fruits and trees in the lobby of the hotel from 10 a. m. until 4:30 p. m.

All interested in avocado growing in any way are invited.

At a recent meeting of the directors the following program for the year was adopted: Increase membership to 400; continue study of varieties; advance department of budwood selection; simplify and encourage keeping individual tree records; complete listing of avocado trees planted in California; list fruit supplies and market opportunities; consider steps towards establishing marketing center; recommend standard shipping carrier; extend educational campaign; urge revision of university's correspondence course in avocado culture; continue cooperation in experiments by citrus by-products laboratory; devise cooperative plan to discourage stealing of fruit.

FIRST ANNUAL FRUIT GROWERS AND EXHIBITORS' MEETING AT STATE FAIR GROUNDS

At a meeting of fruit growers and exhibitors, held under the auspices of the state department of agriculture in the assembly room of the main agricultural building at the state fair grounds such interest was displayed that it was decided to make it an annual event. There were approximately 75 persons present who listened intently in spite of the musical accompaniment from the various exhibits in the building. The meeting was called to order by Director Hecke of the state department of agriculture. President George C. Roeding of the state agricultural society gave an address of welcome in which he outlined some of his hopes and aspirations for the state fair and called attention to some of the very effective work which has been done.

Addresses were made by those who placed the ribbons on the feature and fruit exhibits, also by R. N. Wilson, secretary of the agricultural legislative committee, who spoke briefly on the progress being made and of the general plan and scope of the work being carried on by this most important organization.

AN IMPROVEMENT

"Do you think the world is improving?"
"Of course. You hardly ever hear of a young girl who speaks pieces nowadays."

STATE JERSEY BREEDERS

The California Jersey Breeders Association held its annual meeting on the fair grounds at Sacramento, September 7. President Thorp presided. Dues were raised to \$2 per year. Treasurer reported balance on hand of nearly \$100. Guy Miller presented matter of annual meeting of the A. J. C. C. and suggested that a national association be urged to place a representative in the West. Mr. Fortini presented matter of accredited dairy herds in California. Chairman appointed committee to take up matter with Drs. Harding and Iverson. Messrs. Fortini, Smith and Bryant were appointed.

The following officers were elected: President, Judge Peter J. Shields; vice-president, J. E. Wherrell; secretary, V. C. Bryant; treasurer, N. H. Locke; directors, S. F. Williams and E. E. Greenough.

It is felt that only such judges for the state fair should be selected to judge Jersey cattle as are approved by the American Jersey Cattle Club. Guy H. Miller, Judge P. J. Shields and J. H. Sawyer were appointed committee to present this to fair management. It was agreed that members of the association should furnish at least 30 heifers ranging in age from six to 15 months to colonists at Delhi at a price not to exceed \$165 per head. Messrs. Thorp, Fortini, Coppini, Wherrel and Greenough were made committee to take this up with management of the state land settlement.

In our anxiety over the shortcomings of the other fellow, few of us realize that he is just as worried over our shortcomings.

WEATHER REPORT

San Francisco, September 18, 1920.

Stations	Rainfall			Temp.	
	Wk.	Season.	Norm.	Max.	Min.
Eureka	1.07	1.67	.71	72	56
Red Bluff	.00	.31	.25	94	66
Sacramento	T	.00	.15	92	66
San Francisco	.00	.00	.02	82	58
San Jose	.00	.00	.17	90	56
Fresno	T	.14	.60	90	70
San Luis Obispo	.00	.00	.14	90	56
Los Angeles	T	.00	.00	82	64
San Diego	.00	.00	.06	74	64

RAILSBACK SERVICE

Unusual activity is in evidence among the implement and tractor dealers of Southern California in the shifting of many of the well known lines and the establishment of branch houses and new dealers. Most noticeable, perhaps, is the rapid growth of the L. M. Railsback Company, which has just taken the distribution of Allwork tractors for the California, Nevada, Lower California and the Hawaiian Islands. This company is also distributor for Los Angeles County for the entire line of the Oliver Chilled Plow Works, Killefer Mfg. Co. deep tillage tools and Hardie Mfg. Co. sprayers. "Railsback Service" is the slogan and carries with it all that the phrase implies. Parts departments will be maintained in Los Angeles and Sacramento for the tractor; and expert service men will be on hand to give their aid to the dealers handling the Allwork tractor. It will not be necessary for farmers to lose any time in making repairs of either tractors or implements as parts and men will be available at short notice. A large sales organization has been built up and will keep in close touch with farmers' needs, and deliveries will be prompt.

Young Trees

YOUNG TREES

or bearing trees will not thrive unless protected from pest and disease.

NICOTINE-SULPHUR (dust)

keeps them free from Aphis, Thrip, Red Spider and other pests.

THE American Beauty Dust Sprayer

is unequalled for the work. Kill the pests and save the vigor of your trees.

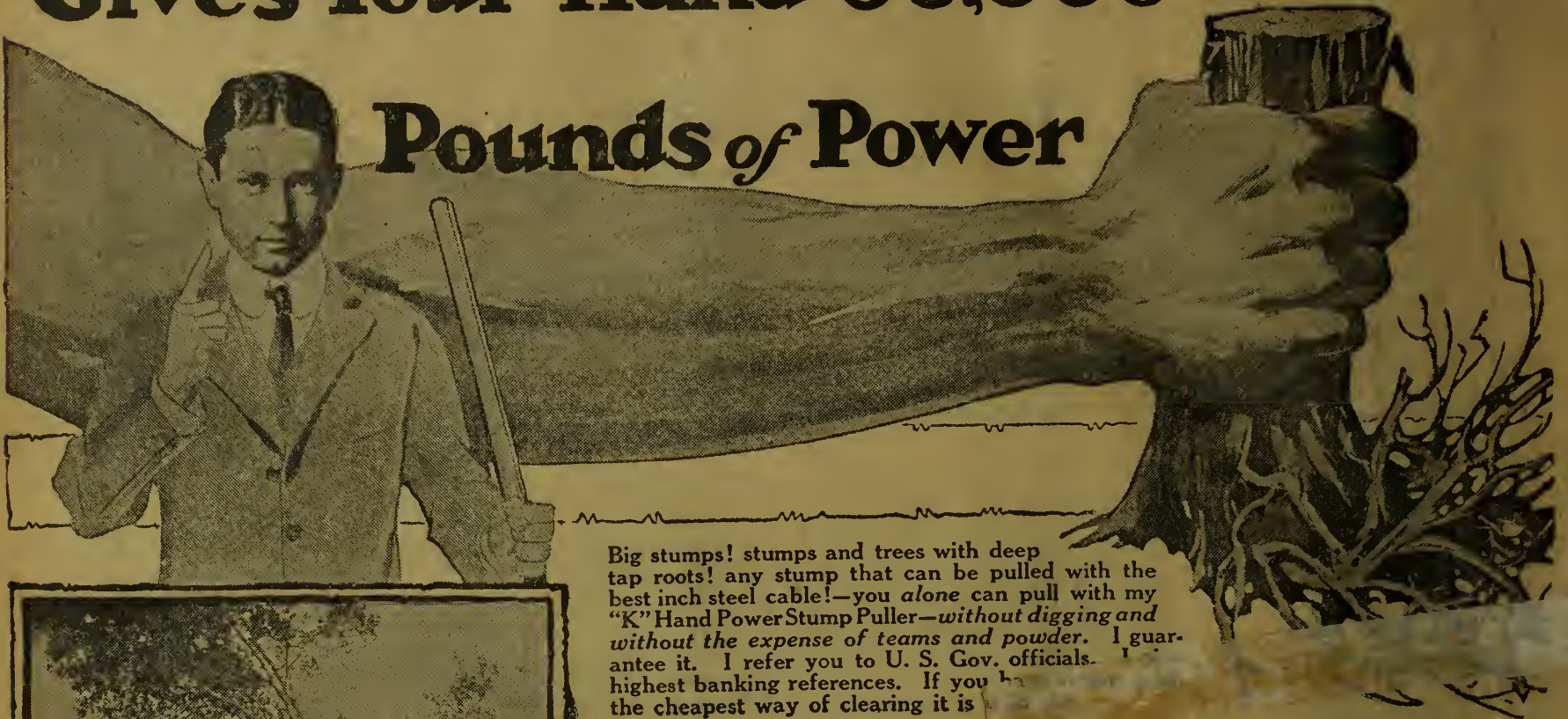
The California Sprayer Co. 6001-11 Pasadena Ave.
Los Angeles, Cal.



My K Hand Stump Puller

Gives Your Hand 96,000

Pounds of Power



Big stumps! stumps and trees with deep tap roots! any stump that can be pulled with the best inch steel cable!—you *alone* can pull with my "K" Hand Power Stump Puller—without digging and without the expense of teams and powder. I guarantee it. I refer you to U. S. Gov. officials, highest banking references. If you have the cheapest way of clearing it is

HAND POWER Stump Puller

Frank Hance, a one-armed farmer of Bowie, Md., pulling a double silver maple 3 ft. 8 in. in diameter at the ground, with deep tap roots. This is an easy pull for the "K," as the cable can be hitched high and the leverage is consequently greater.

How the "K" Pulls Biggest Stumps

The "K" works on the leverage principle of the ordinary lifting jack, except that the power is applied on a cog-wheel instead of a standard. 100 lbs. push on the lever develops a 48-ton pull on the stump—all an inch steel cable will hold. One man operates it alone—no teams to pay for—no walking.

A Mechanical Wonder

Made of finest steel—guaranteed against breakage. Weighs only 171 lbs.—easily carried or hauled about on its own truck wheels. Has two speeds—60 feet per minute for hauling in cable or for small stumps—slow speed for heavy pulls. Works equally well on hillsides and marshes where horses can not work

Owners Praise It

H. Sinclair of the Dept. of the Interior, a U. S. Gov. official, writes: "The stump puller is a wonder."
Ernest Thompson Seton, author and naturalist, declares the "K" "a great success."

Hundreds of owners write in, telling of pulling six- and seven-foot stumps, of pulling faster and pulling bigger stumps than by any other machine.

Special Offer We are making a special offer to get a "K" Stump Puller introduced in every neighborhood. Write us today for full information and for free book on Land Clearing and about our Wonderful Drag Saw.

The Fitzpatrick Products Corp.

Box 17 99 John Street, New York
Box 17 182 Fifth St., San Francisco.



H.G. Hunzicker of Foster, Wash., pulling a 24-inch fir stump with deep tap roots out of hard ground, without using powder or cutting any roots.

Tear Out and Mail Today
The Fitzpatrick Products Corp.
Box 17 99 John St., New York
Box 17 182 Fifth St. San Francisco
Send me full particulars on your special offer and your free booklet on Land Clearing.

Name _____

Address _____

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles

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San Francisco

Vol. LV

October 2, 1920

No. 14



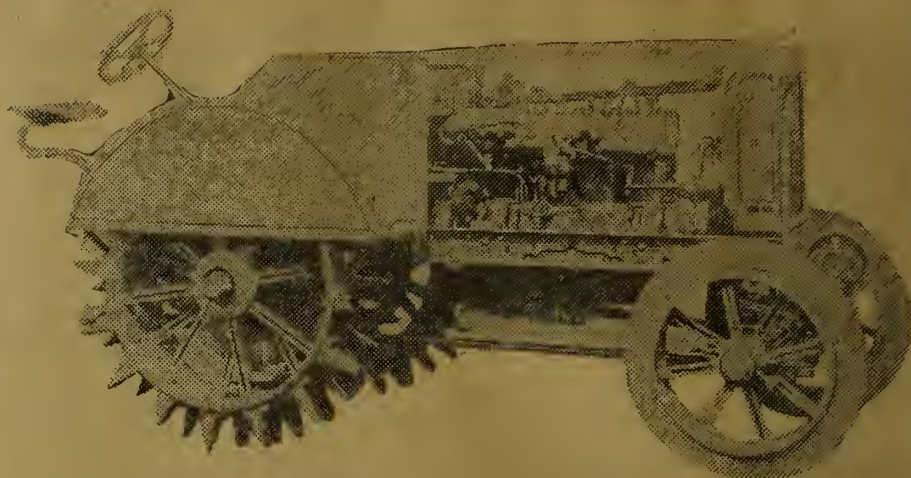
- LOS ANGELES -
LIVE STOCK SHOW
EXPOSITION PARK
OCT. 2ND OCT. 10 -



There is a Tractor Built Especially For California

It is the

Allwork KEROSENE TRACTOR



This is the powerful 14-28 horsepower tractor that has met with such a remarkable reception in sales. It is built low—only 55 inches high, 50 inches wide, weighs only 4,500 pounds, has five bearing crankshaft, is regularly equipped with fenders for closeup orchard work and is designed and made to burn kerosene. No special carburetor is required.

Experience in California, north, central and south, under varying soil and climatic conditions has proved that the ALLwork is the one successful kerosene burning tractor.

Dealers Will Find the ALLwork Tractor a Ready Seller

A year ago the ALLwork tractor was introduced into California and 66 were sold the first month. Today, one year later, in spite of the steel shortage 431 ALLwork tractors have been sold in California, a record that speaks for itself. Months of factory expert investigation in California finding out what would best meet California conditions have been rewarded with a steady flow of orders from farmers, ranchers and orchardists who wanted a low, powerful, kerosene burning tractor with a short turning radius AND TRACTION IN ALL SOILS.

And ALLwork tractors are so well made as to require very little service. Many owners have never made a call for service. The scientific design and quality of materials and workmanship are largely responsible. The ALLwork has Timken bearings, oil enclosed governor, swinging drawbar and three speeds forward and reverse.

Bankers know the ALLwork tractor is a good investment and will finance any responsible dealer or farmer.

Dealers have found the ALLwork just the tractor the western rancher has long been wanting. Backed by the unexcelled Railsback Service, ALLwork tractors make friends everywhere and invariably ALLwork owners buy additional ALLwork tractors when more power units are required.

Railsback Service is now extended to Northern California and Nevada. This means the highest degree of earnings with your tractor through thoroughly efficient Service. We have been appointed factory distributors for the ALLwork Kerosene tractor for Northern California and Nevada as well as Southern California.

Leading Lines of Implements With ALLwork Tractors

Farm and tractor implements of the latest design, which are supreme in their respective classes, are to be found in the display rooms of the L. M. Railsback Company. This firm has been extremely fortunate in having the opportunity to handle, and offer to its customers, tractors and implements and other types of farm equipment which are recognized for their quality and unusual serviceability.

Each of the lines which we carry offers the best in its particular sphere. This is proved by the service these implements are rendering on large and small farms throughout the country. They are noted for their substantial construction and all-around serviceability and economy and include the complete lines of Oliver and Killefer Implements. Visit our show rooms or write for further particulars.

L. M. Railsback Co.

Los Angeles, California

Implement Division:
115-119 S. Los Angeles St. Phone 67466

Tractor Division:
234 N. Los Angeles St. Phone 12569

MARTIN J. KOPPEL

Manager for Northern California and Nevada
Temporary Address, Travelers Hotel, Sacramento, Cal.

L. M. RAILSBACK COMPANY REPRESENTING

ALLWORK TRACTORS
Northern and Southern California,
Nevada, Arizona, Hawaiian Islands
and Philippines.

KILLEFER FARM IMPLEMENTS

Service — parts and the complete
Killefer line in Los Angeles County.

OLIVER PLOWS

Los Angeles County

Oliver Sulky Plows
Oliver Gang Plows
Oliver Disc Harrows
Oliver Listers
Oliver Spike Tooth Harrows
Oliver Spring Tooth Harrows
Oliver Cultivators
Oliver Culti-Packers
Thomas Rakes
Thomas Crown Mowers
Black Hawk Spreaders
Black Hawk Planters
Steel Wheel Trucks
Hardie Sprayers
Superior Drills
Winona Wagons
Asplnwall Potato Machinery
Knapp Orchard Plows

California Cultivator

Vol. LV, No. 14

Los Angeles, October 2, 1920

One Dollar Yearly

The Los Angeles Livestock Show

By R. P. Royce

DURING the next eight days the gates of the third annual Los Angeles Livestock Show will swing wide to the public, and all who avail themselves of the opportunity (and every man, woman and child in Southern California should capitalize the opportunity) will find that a few days spent

about the judging rings and stalls of this most complete show can be definitely turned to their individual advantage.

The time has arrived in our agricultural development, especially in this southern part of California, when we must recognize the fact that, re-

(Continued on Page 448.)

EVENTS OF A GREAT WEEK

THE Los Angeles Livestock Show opens at Exposition Park today and continues nine days.

This show had its beginning in the Liberty Fair of 1918, held under the auspices of the sixth agricultural district of California, the first notable attempt to display locally pure bred farm animals.

Encouraged by the outcome of that show, public spirited citizens of the South organized the Los Angeles Livestock Show and put on a successful exhibition last year. The excellence and number of entries was a revelation.

This year the men and women backing the movement are giving more than \$100,000, their time and talent, in staging a comprehensive educational show which has for its main object the stimulation of the pure bred industry in the West.

Officers of the Livestock Show are: E. W. Murphy, president; Clinton E. Miller, first vice president; Harold H. Braly, second vice president; Albert M. Paul, treasurer; C. R. Thomas, secretary-manager. The directors are: J. C. Adams, Geo. R. Bentel, Fred H. Bixby, Harold Braly, George M. Brown, Harry Chandler, T. H. Dudley, R. L. English, Herman J. Hauser, Chas. H. Hill, P. D. Howse, H. A. Jastro, R. H. Jeffries, F. E. Lewis, Geo. Lichtenberger, Clinton E. Miller, E. W. Murphy, Albert M. Paul, Walter M. Ross, R. H. Whitten, Frank Wiggins, H. B. Woodhill.

Thirty boys' and girls' pig clubs have entered 76 swine. A special barn is provided for these exhibits and the display is in charge of farm advisers. Duroc-Jersey, Berkshire, Poland China and fat swine are represented.

The show will open on Saturday, October 2, with a great parade on Los Angeles streets, followed by nine full days of events both educating and diverting. Elaborate preparations are being made to stage the daily entertainment features which include running races, rodeo, horse show, fashion parades and surprise events going on every minute.

We cannot find place to mention all the great events, but we give outline which will be of value, especially to those who wish to attend the judging of the different types of cattle. There has been great pressure for additional space, and Manager Thomas has been building greater barns and making provision for every possible emergency. The entire list of exhibits and the livestock events will fill every minute of the time from 1:30 on Saturday of this week until the closing of the gates Sunday night, October 10.

The kennel show opens on Saturday and continues three days. The poultry, rabbit and pigeon show will open on Tuesday and continue until Sunday. The judging and feature events will occur as follows:

SATURDAY, OCTOBER 2

1:30 P. M.—Parade of some of the entries on Los Angeles streets. Band concert, Rodeo, Horse Racing and Amusements in front of grandstand.

SUNDAY, OCTOBER 3

9:00 A. M.—Barns and grounds open to public. 1:30 P. M.—Band Concert. Kennel Show. 2:30 P. M.—Grand Serpentine Parade of Livestock. 3:30 P. M.—Rodeo and amusements.

MONDAY, OCTOBER 4

9:00 A. M.—Judging Holstein Cattle, Milk Goats and Guernseys. 10:00 A. M.—Judging Percheron Horses. 1:30 P. M.—Judging American Saddle Horses. 2:00 P. M.—Judging Aberdeen-Angus Cattle, Tamworth and Yorkshire Swine, Horse Show. Amusements, Rodeo and Races.

TUESDAY, OCTOBER 5

9:00 A. M.—Judging Guernsey Cattle, Car Lots of Cattle and Poultry. 9:30 A. M.—Judging fat steers. 10:00 A. M.—Judging Duroc-Jersey Swine, Belgian Horses and Shorthorn Cattle. 1:30 P. M.—Judging Standard Bred Horses. Band Concert. 2:00 P. M.—Horse Show. 2:30 P. M.—Amusements, Rodeo and Races.

WEDNESDAY, OCTOBER 6

9:00 A. M.—Judging Poultry, Hereford Cattle and Poland China Hogs. 10:00 A. M.—Judging Shire Horses. 1:30 P. M.—Judging Jersey Cattle and Thoroughbred Horses, Band Concert. 2:00 P. M.—Horse Show, Amusements, Rodeo and Races. 3:00 P. M.—Auction Sale of Polled Hereford Cattle.

THURSDAY, OCTOBER 7

9:00 A. M.—Judging Berkshire Hogs and Ayrshire Cattle. 10:00 A. M.—Judging Clydesdale Horses, Jacks and Jennets, Poultry Show. California Cattle-men's Convention in Agricultural Building. 1:30 P. M.—Band Concert, Judging Arabian Horses. 2:00 P. M.—Horse Show. 2:30 P. M.—Amusements, Rodeo and Races. 3:00 P. M.—Auction Sale of Berkshire Hogs.

FRIDAY, OCTOBER 8

10:00 A. M.—Judging Hampshire Hogs, Unfinished Classes. Poultry Show. 1:00 P. M.—Judging Pig Club Stock. 1:30 P. M.—Band Concert. 2:00 P. M.—Horse Show. 2:30 P. M.—Auction Sale of Pig Club Hogs. Amusements, Rodeo and Races.

SATURDAY, OCTOBER 9

10:00 A. M.—Poultry Show. Judging Sheep. Special invitation to school children by owners of livestock to inspect and study same. 1:30 P. M.—Band Concert. 2:00 P. M.—Horse Show. 2:30 P. M.—Amusements, Rodeo and Races.

SUNDAY, OCTOBER 10

10:00 A. M.—All livestock on exhibition. 1:30 P. M.—Band Concert. Judging Shetland Ponies. Amusements, Rodeo and Races. 2:30 P. M.—Grand March of all Prize Winners.



Grand Champions at 1919 Los Angeles Livestock Show.

Agricultural News Notes of the Pacific Coast

Northern California

The rice harvest of Glenn County is now in full swing.

Arbuckle's almond fair, just closed, was the usual great success.

The Livermore farm center held its picnic at Cresta Blanca, September 19.

Modoc County is holding its fall fair at Cedarville, September 30 to October 3.

As the rice harvest progresses growers are finding themselves pressed for warehouse room.

The Humboldt County farm bureau will hold its annual meeting at Eureka, October 18.

Glenn County's fair closed today at Orland. There was an especially large exhibit of poultry.

Chico and Durham are planning to act together in planting the highway between them with shade trees.

Humboldt County meadows, pastures and ranges have been greatly benefited by early rains, especially near the coast.

The Solano County farm bureau will hold its first annual picnic on October 9 at Wolfskill's Grove, Manka's Corner, on October 9.

Growers are requested to allow their prunes to ripen thoroughly before bringing them to the farm bureau evaporator at Placerville.

W. S. Wilkinson of the university farm at Davis has been appointed technical assistant in work of the state department of agriculture.

Lake County has decided for the time being to organize no farm bureau of its own but to unite in work with Napa and Mendocino Counties.

The Hayward Review states that the bottom has dropped out of the tomato market because the small canners are not being given credit by the banks.

Instead of hauling rice to a stationary thrasher, some growers in Glenn County are using tractor to haul the thrasher over the field to the rice.

Grape growers of the Florin district of Sacramento County are faced by the same car shortage problem which is embarrassing grape growers generally.

The board of directors of the Poultry Producers of Central California has passed resolutions endorsing the National Farm Bureau and urging members to support all farm bureaus.

Owners of 35,000 acres of Butte County lands to the west of Gridley and Biggs and as far north as Richvale have petitioned the Butte County supervisors for the organization of a drainage district.

The Glenn County supervisors have authorized formation of Drainage District No. 1 of Glenn County to allow drainage of some 8,000 acres of rice across the Goodman lands near Butte City. The Goodman Estate recently brought injunction to restrain rice growers from draining over their land.

Placer County fruit shippers are protesting against statement that Placer County fruit is being received in Eastern markets poorly packed and in bad condition. They say that the small quantity of fruit arriving in poor condition was not properly iced by railroads and that Placer County is in the same boat with other sections in this respect.

Central California

Fresno district fair closed today, October 2.

The California Peach Growers is sending out notification that the entire crop under its control has been sold.

Tulare County fair, held last week at Tulare on its new \$35,000 fair grounds, reports most successful exhibit.

The hogs of Stanislaus County pure bred pig club sold at an average of \$15.50. They averaged in weight 181 pounds.

The olive crop in the Lindsay district of Tulare County is heavy and the quality unusually fine. Pickling will soon begin.

A large number of Indian pickers in the vineyards about Clovis, Fresno County, have been replaced by labor brought in from Mexico.

The farm bureau of Tulare County has decided to conduct a lumbering department on the plan followed by the Glenn County farm bureau.

Lindsay olive growers, members of the California Ripe Olive Association, met last week to discuss methods of handling the coming season's crop.

Sanger grape shippers report some improvement in the car situation; they are not getting a satisfactory service, but it is better than for some time past.

The sweet potato shipping season in the Turlock section has about reached its peak. Shipments so far have averaged the growers about four cents a pound.

A new million dollar terminal for bulk handling of grain has been finished at Oakland. It is stated that this plant is equipped for handling 200 cars of grain or rice a day.

The new plant of the California Prune and Apricot Growers at Visalia was dedicated on September 18. This plant cost \$100,000 and is said to be the largest devoted exclusively to the packing of prunes.

Tokay growers of the Lodi section have lost heavily because of car shortage. Growers who had hoped for \$90 per ton are now offering at \$75, for dehydration. The shortage of cars is said to be largely due to many of the cars being used by the wine grape growers.

Petition for the formation of the West Joaquin irrigation district will be presented to the Merced County supervisors at the October meeting. It was to have been presented at the August meeting but was held up by injunction obtained by Miller & Lux interests.

Suit has been filed at Visalia, Tulare County, asking that title to 1,000 acres of vineyard land near Visalia, valued at \$500,000, and Visalia property valued at \$35,000, revert to the people of California on the ground that the anti-alien land law was violated in their transfer to Japanese.

The California Ripe Olive Association has made arrangements with the California Products Corporation to deliver olives for an initial payment of \$100 per ton for olives grading 60 per cent pickling size. It is hoped the orchard run will bring about \$140. No new members will be received until next year.

Southern California

The Pasadena Flower Show will be held October 28, 29, 30.

San Diego County this year expects to ship 100 carloads of honey.

The total received for the past year's citrus crop will be about \$81,000,000.

Banning, Riverside County, has practically finished its almond harvest.

Coachella Valley cotton crop was materially injured by thunder shower.

On September 1 there were some 75,000 bags of Lima beans still in warehouses.

Coachella Valley has organized the 16th farm center to be formed in Riverside County.

Orange County farm bureau is proposing to take advantage of cooperative buying of supplies.

Orange County bean growers are harvesting and threshing. The crop is under average as to quantity.

Farm center meetings will be held in Los Angeles County at Downey, October 4; Glendora, 4; Hynes, 4.

The La Puente Valley, Los Angeles County, Walnut Growers formally opened their new packing house on September 18.

The cotton gin purchased by the Perris farm center of Riverside County has been opened and put in readiness for business.

Cotton picking in the Palo Verde Valley of Riverside County is in full swing, with labor shortage proving somewhat embarrassing.

At the recent annual meeting of the California Jersey Cattle Club at Sacramento J. E. Wherrell of Riverside was elected vice-president.

Walnut growers are discussing prices. It is thought a meeting will be held in Los Angeles on Saturday of this week and a sliding scale made.

The Southern California Fair at Riverside, October 13 to 19, will have many attractive exhibits from beekeepers of the county and surrounding territory.

More than 75 persons attended the recent meeting of the Alvord center of the Riverside County farm bureau. President Wherrell of the county farm bureau was one of the principal speakers.

Imperial Valley cotton growers are being advanced \$100 per bale on short staple and \$150 on long staple. This will enable them to hold the crop until more satisfactory price arrangement is made.

Citrus growers who have been endeavoring to buy bean straw for fertilization purposes find inability to get amount desired because of shortage of baling wire. The price is ranging around \$18 per ton.

Lima bean people are to meet this week in Oxnard and discuss the marketing situation. The market is far from satisfactory. There is about a 20 car carryover from last year. The opening price may not be more than ten cents.

Records of production commenced on September 1 in the California Dairy Cow Competition being conducted by the college of agriculture. Entries, however, may be made up to April 1, 1921. Awards will be made on records of production for ten consecutive months prior to February 1, 1922.

The Coast and General

Arizona cotton growers are generally holding their cotton for better prices.

An agricultural department has been installed in the schools of Rainier, Oregon.

A series of beef cattle sales has been planned for Medford, Oregon. The first was held on September 15.

The farm bureau of Washoe County, Nevada, has formed a marketing department and will employ a manager.

The chamber of commerce of Corning, Tehama County, is also trying to find some solution of the housing problem.

E. W. Hudson, a prominent Arizona farmer, has been appointed a member of the board of regents of the Arizona state university.

The Oregon state fair board has devoted \$300 to prizes in the boys and girls club stock judging contests at the state fair at Salem.

There are 4,547 Japanese living in Oregon, according to report of the state labor commissioner. They own property valued at \$300,000.

The U. S. department of commerce estimates that China shipped to the United States nearly \$2,000,000 worth of walnuts in the 11 months ending May, 1920.

The Hood River Apple Growers Association of Oregon expects to ship out about 150 carloads of pears. The majority are Bartletts, with d'Anjous next in quantity.

The farm bureau of Washoe County, Nevada, is asking the state quarantine inspector to open negotiations with California to secure modification of quarantine against hay due to appearance of alfalfa weevil.

Seed dealers in the Salt River Valley of Arizona state that the demand for garden seeds this fall is coming earlier and in a volume which indicates that there is a healthy return to the home garden plan.

An attempt is being made to ask the interstate commerce commission to consider the matter of lower rates for certain commodities shipped into the Salt River Valley of Arizona. It is claimed that rates now in effect are discriminatory.

President Stevens of the Arizona American-Egyptian Cotton Growers Association has returned from the national cotton conference at Montgomery, Alabama, and announces that cotton growers all over the country are going to stick together to secure fair prices.

The second annual Cotton Carnival is to be held at Mesa, Arizona, this year, October 25 to 30. Last season, which was the first event of this kind, was more or less of a local affair. Plans this year are to make it the big gala occasion for all cotton growers of the state.

Prof. F. C. Mason, now in Egypt, writes to a friend in Arizona that he has just packed 2,500 of the choicest Egyptian date palm offshoots, which are being shipped to California and Arizona. He states that 300 of these offshoots are of the much prized Hazani variety. Prof. Mason is to continue on into the Persian Gulf country and there make other selections and study date growing and packing methods.

National Tractor Show of the West

A Great Event for Farmer and Dealer With Notes by Cultivator Staff

MAN'S arm is a whole lot longer and stronger than in the days of the crooked stick plow or in the days of the old time moldboard, whether it was of cast iron or tempered steel. There are today slight differences in curvature, slight variations in manner of draft or making the hitch, which give greater power over the forces of nature. In fact, the greatest lesson at the National Tractor Show of the West, just ended at Verdugo Woodlands, was in the working out of details.

Tractors looked much as they did a year or five years ago. There were no new nor striking types, but there were striking changes in tractor drawn implements. When the tractor came it attached itself to the horse drawn vehicles and its success was sufficient to continue drawing them, but it soon was apparent that special implements, special hitches and power lifts were necessary. Therein were the great advances manifest in this show. This has been brought about largely, we believe, by the insistent demand of the tractor people that an implement must be built to meet the particular needs of their tractors.

We asked one implement maker as to whether this use of more complicated attachments did not necessitate more technical education on the part of the farmer who used them, and he answered, "Quite the reverse. Note the tractor hitch. If the draft does not give 100 per cent efficient service a slight change in the location of this bolt so regulates it that no other bolt need be touched in order to secure perfect results. The farmer of today must be one of a reasonable degree of intelligence. Any new method worked out cannot be said to be absolutely 'fool proof,' yet these inventions simplify the farmer's problems."

Another tractor had a series of lugs for attaching to the smooth rim of the wheel which may have just left the best of improved highways without injury to the surface. These lugs, it was guaranteed, could be fitted to both drive wheels in five minutes and give perfect traction in soft ground of field or orchard.

The best of it is that the real users of these implements and of farm power were at the show gathering in these lessons. While it was a show and not a demonstration, yet the demonstrators were with each machine and many machines were there with parts showing details of transmission or other internal working part. In a sense it was the demonstration with the personal touch which is not possible with the great field demonstration.

Financially it was a complete success. Spectacular features were eliminated; utility only considered; yet there were 6,000 to 7,000 in daily attendance.

As another of the Cultivator staff saw the show:

By J. H. Yetter

It is certain that everyone who attended the National Tractor and Imple-

they can sell several carloads at this time so much as for some real, dependable man of service who can take care of his customers' needs in service in his immediate territory. Individuals who may be watching the trend of events for business openings would do well to familiarize themselves with the tractor industry and its future. Verily the more tractors that are made, the more seem to be sold and

GUY H. HALL

A special tribute is due Guy H. Hall, a five times successful manager of tractor shows and demonstrations, for his successful work in handling both affairs and men to make the National Tractor and Implement Show of the West the splendid success that it was. Mr. Hall is a diplomat, a gentleman who sees things in their larger aspects and a go-getter. May he come to California to reside permanently.



ment Show went away with a new inspiration as to the great future of the tractor industry. One could not but be impressed with the wonderful progress made each year, and especially during the past five years.

When the vast amount of money that is invested in the tractor industry is considered and one comes in contact with the engineers and the other big men behind the various organizations, one instinctively feels the broad, solid foundation upon which it is founded. This show, of all the shows and demonstrations that have been held in Los Angeles, made tractor enthusiasts or "bugs," to use a slang phrase. Talk with almost any farmer there and he can give you the special technical difference between tractors.

The country has been sold, to a certain degree, upon tractors for some time, depending upon the territory and needs of the farmer. It is safe to say that the National Tractor and Implement Show increased the percentage of people, or territory, thoroughly sold on the utility and necessity of the tractors, more than any show ever held here. It gave thousands who attended it a greater vision of a tractor on every farm and the right tractor doing the particular work required of it.

More dealers are in demand. The men and firms manufacturing tractors are not looking for some one to whom

used. The tractor dealer is one of the most important men in every community. Every tractor sold increases the productivity of the country.

If there was any hesitancy or uncertainty as to farm loans on tractors, it was not noticed at the tractor show. It is certain that more deals were closed for immediate delivery of tractors than was anticipated and more than at previous tractor demonstrations. Money was plentiful. Dealers say the tractor business is so essential that bankers realize their necessity and there will be money to loan on tractors long after money tightens up on other non-essential lines. It depends a good deal upon the tractor and the farmer and the dealer. Tractors manufactured by concerns of established financial responsibility and of known reliability, sold by dealers who are dependable, to farmers who need them, seem to be moving from factory to farm without delay.

It is reported that tractor distributors are advised to report to the federal reserve bank any refusal on the part of any bank to extend reasonable credit to any responsible farmer who may desire to buy a tractor.

* * *

TRACTOR NOTES

"Perfectly satisfied" was the only verdict which could be secured from President Rainey in an attempted interview. Every other exhibitor on the

grounds expressed belief that greater advance had been made in power farming with improved implements through this National Tractor Show of the West than any other power and implement event.

* * *

Manager Guy Hall was likewise too busy for an interview. The look on his face, however, expressed that "perfectly satisfied" condition of President Rainey.

* * *

The grounds with the running stream—it was real water—made a perfect setting. The comfort of the attendants was looked to. The eating possibilities were fair; there was abundance of room for parking; the weather was perfect.

* * *

Both tractor and implement people were frankly out for doing business. Everyone of whom we inquired remarked: "Yes, we have made sales for immediate delivery. Still better, however, are the large number of prospects for future business."

* * *

Harry Lamster of the William L. Hughson Co. said: "The great feature of this exhibit is the bringing together in an educational way of the tractor and the implement which is fitted to the tractor. Our firm demanded for the Fordson tractor implements which would meet its requirements and implements which could be operated by the tractor driver, in other words, a one-man outfit. The implement maker said it couldn't be done, but the same implement maker turned in and did it just the same." And Manager Nerney of the Hughson Co. made such a complete showing of tractor and adapted implements that Mr. Lamster's statement was verified.

* * *

The Motors Equipment and Tractor Co. made fine showing of novel interchangeable tractor and corn, cotton or beet cultivator. This was in the Toro. As a beet cultivator this implement would handle four rows or two rows in corn and cotton. The change from the cultivator to the regular tractor type required but a short time.

* * *

The H. J. Ruddell Co. showed Fageol trucks and tractors. The few trucks which were exhibited at the show received sufficient attention to justify their exhibit. The truck people apparently failed to grasp the importance of the occasion for the farmer is proving a greater user of trucks than was dreamed possible five years ago. The Fageol folks also made particular point of the adaptability of the Fageol tractor in bean and beet fields. The Fageol is a California invention and meets California conditions.

(Continued on page 434)



Verdugo Woodlands Showing Edge of Parking Space on Right and on Left Entrance and Portion of Exhibits Under the Trees.

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Forty-third Year

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and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877
Combined with California Cultivator 1914
Livestock and Dairy Journal, Established 1901,
Combined with California Cultivator 1916

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Saturday October 2, 1920

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We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

EDITORIALETTES

The procession of fairs, shows and nice things continues. The National Tractor Show of the West ended last Saturday and this issue bears evidence to its success. Also last week there was the Kings County Fair at Hanford, and we would like to tell of its attractions and benefits in an article written by J. P. Bennett. This, is however necessarily held over until next week, the issue of the 9th. Then there was the Ventura County Fair, and this week are being held the Glenn County Fair at Orland, the Fresno District Fair at Fresno, the Shasta County Fair at Redding, and today begins the Los Angeles Livestock Show with a gathering of pure bred such as is seldom seen, and on Tuesday begin Siskiyou County fair and Orange County Fair, then the Southern California at Riverside on October 13.

Other fairs coming are Northern Arizona, Kern County Cotton Festival, Mendocino Apple Show, and finally the Arizona State Fair in the middle of November, also the Pacific International at Portland. Never were there such opportunities for the Southwest to gather information at first hand.

The National Tractor Show was completely successful. One Eastern

attendant thought perhaps the gate receipts were not so large as in some of the great tractor events of the Middle West. Perhaps. We are not jealous of gate receipts. We are, however, highly gratified at the apparent interest at this show which was manifested by farmers who were there to gather information. They saw tractors from all sections of the country, saw the implements which are fitted to those tractors and went home better informed than ever before on farm mechanics and farm power.

Manager Thomas of the Los Angeles Livestock Show is too busy to give an interview. But new barns have been built to fill all available space and every stall is engaged. The Cultivator staff is busily sharpening pencils and wiping the dust from the lenses ready for a full week.

Secretary Van Pelt of Riverside phones in that former years successful events are already eclipsed as to entries and interest in the Southern California Fair to be opened two weeks later. It appears there will be an especially strong showing of Jerseys and Holsteins.

Thomas Forsyth Hunt, dean of the California college of agriculture, has been appointed by President Wilson as a member of the permanent com-

golden poppies that they may not see the snowdrifts in the highways. However, if there are no snowdrifts the Cultivator will take the credit for having secured an abatement of the nuisance.

The forest service reports that "Thirty-three per cent of the 196 forest fires discovered and reported by the ninth aero squadron operating out of Mather field were accurately located." The accurate location aided in fire control. It is very probable that the army service is greatly benefited by the drill which the fliers are securing.

The recent bomb outrage in the city of New York, in which more than 30 people's lives were snuffed out, has been definitely determined to be the result of a diabolical plot, doubtless planned by Bolshevik type of conspirators, in any case, caused by wrong thinking on the part of those who feel that the thrift which leads to success should be punished and all property turned over to those who are unwilling through self denial to store for their own future use. Unfortunately, events of the past months have shown that the lower type of vicious law breakers are not the only ones who hold mistaken ideas as to the property rights and the civil rights of the people. There will doubtless be

SAWMILLS AND FOOLS

It took more than 3,000 years to make some of the oldest of the sequoias, trees that are still standing in perfect strength and beauty, waving and singing in the mighty forests of the Sierra. Through all the eventful centuries since Christ's time, and long before that, God had cared for these trees, saved them from drouth, disease, avalanches and a thousand storms; but He cannot save them from sawmills and fools; this is left to the American people.—John Muir.

mittee of the International Institute of Agriculture at Rome, Italy. This will fill the place made vacant by the death of David Lubin, founder of the institute, some months ago. The institute was the result of a dream of a Californian. The dream was considered so impractical as to be unworthy of the support of many Californians and many other Americans, but ultimately the ear of the King of Italy was reached and he financed and made possible the institute. It has resulted in the gathering of a fund of information from the wheat and corn fields of the earth so that the food producers of all nations have been greatly benefited. Since the death of Mr. Lubin America has had no representative in the organization. This appointment means that America will continue to be represented by a Californian. Every nation of importance now affiliates with the institute. We are not informed as to Dean Hunt's acceptance nor as to the effect it will have on his connection with the College of Agriculture, but Mr. Lubin's time was all required in Rome.

We have communication from the National Automobile Chamber of Commerce, urging special campaign with highway officials and those who have power to make appropriations in order that there may be secured for this state proper removal of snow from the highways during the coming winter season. "It is all important that we take active steps to point out to the authorities the need for looking after this vital matter at once." We will defer the matter until January, when we fear we will find our authorities so busily engaged in eating strawberries and cream and rubbernecking at

closer scrutiny of some educational institutions which have harbored parlor Bolsheviks.

We understand there is a desire on the part of certain farm papers to become the official organ of the state farm bureau, or perhaps more correctly to make the state farm bureau an official booster for the papers in question. The Cultivator is not a candidate for the position. It appreciates the privilege of supporting so great a movement as that of the farm bureau. The farm bureau accomplished much during the war; we are not certain but it is accomplishing more since through its aid in directing agricultural practice, marketing of products and in creating a more truly cooperative spirit. This support will continue, regardless of the fact that this paper will not seek to be made the official organ. The field of an official organ is more or less restricted and for well up toward half a century the Cultivator has been endeavoring to cover the agricultural and horticultural field of the state and has never failed to render fullest support to the principle and practice of cooperation while it remains true cooperation.

Some members of the farm bureau are opposed to a narrowing of farm bureau influence. They feel that the bureau should remain truly cooperative in spirit, and that that spirit is not increased by centralizing all the power.

Then there is the house organ. No section of the Union has so many and such large house organs or publications. California is a land of specialization, and this has seemed to en-

courage their establishment. The cost of these publications is borne by the producers or, in some cases, by the taxpayers, and some of the papers have been pushed to the point where they prove an unfair competition for two of the greatest friends of these cooperative movements. These are the farm paper and the local, or home, newspaper. We say "unfair" for the reason that the established farm or local paper of necessity must cover the cost of production or quit business. The house organ, being assured of support, regardless of its own immediate return, may continue indefinitely and bear heavy losses which are assumed by overhead expense of a large and strong organization.

Another case in point is that of a publication receiving endorsement, and doubtless financial support, from the college of agriculture. This paper was started as the organ of agricultural college men but at one time became a strong magazine with specially written articles by professors of the college, which service is not at the command of privately owned papers. That paper ceased to have any of the characteristics of a college men's paper and entered the regular farm paper field, but in a style typographically and as to paper stock impossible to papers not supported by taxes or other sources than income of the paper. The weekly cost of producing a paper similar to the Cultivator and with circulation reaching every county of the state requires four sizable figures to express, hence closest and most intensive business management is required in this and all other publications of its class. Competition with all the taxpayers of California is difficult.

The farm bureau is and must continue to be the expression of the wishes and supporter of the interests of its members. The continuance of control by the membership will not be facilitated by an official "molder of opinion" directed entirely from the centralized authority.

Again, as to the influence on public opinion. The recent fight on the raisin growers, had it depended entirely on its own publications, might have ended differently had not public opinion been appealed to by the loyal stand taken by practically every paper in California. In fact, that fight would have been well advanced, and perhaps ended disastrously, had the monthly date of publication been awaited to pass information to its own members and to the public.

Do not understand us to suggest that there is no need for the house organ or for a news sheet which will carry to the members a more intimate line of information than would be justified in the general public print. We doubt not such publication is imperative for accomplishing best results, but the ambition to erect a great newspaper property at the expense of the truest friends of cooperation is unjust and, from our standpoint, appears to be unwise.

The suit of the department of justice against the Associated Raisin Company has ended. Or if it hasn't ended it is hesitating or has halted or something. "Nobody knows nothin'" but presumably it has been found that changes already made, and in the making for the past few months, place the association technically, as well as in spirit, free of trust taint



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"Soon after I got my truck I made a big improvement by changing quickly to Goodyear Cord Tires. The pneumatics save time, fuel, repairs and shrinkage in livestock—they have increased my hauling radius by 35 miles and go anywhere on the farm. I figure the one truck equal to six teams on my place. Motorization offsets the labor shortage and pneumatics help the farmer to motorize properly."—Frank B. Williams, General Farmer, Cedar Bluffs, Nebraska

MANY a resourceful farmer, like this one, now saves labor, time and money by doing his farm hauling and market hauling on Goodyear Cord Tires.

He hauls steadily through plowed fields, barnyard mud, sand trails and melting snow because these tractive pneumatics grip firmly as they go.

He hauls eggs, fresh vegetables, delicate fruit and shrinkable livestock with utmost safety because these are cushioned properly on the big Goodyear Cord Tires.

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Developed with the manufacturing care that protects our good name, the hardy strength of their Goodyear construction is repeatedly expressed in mileages of exceptional length.

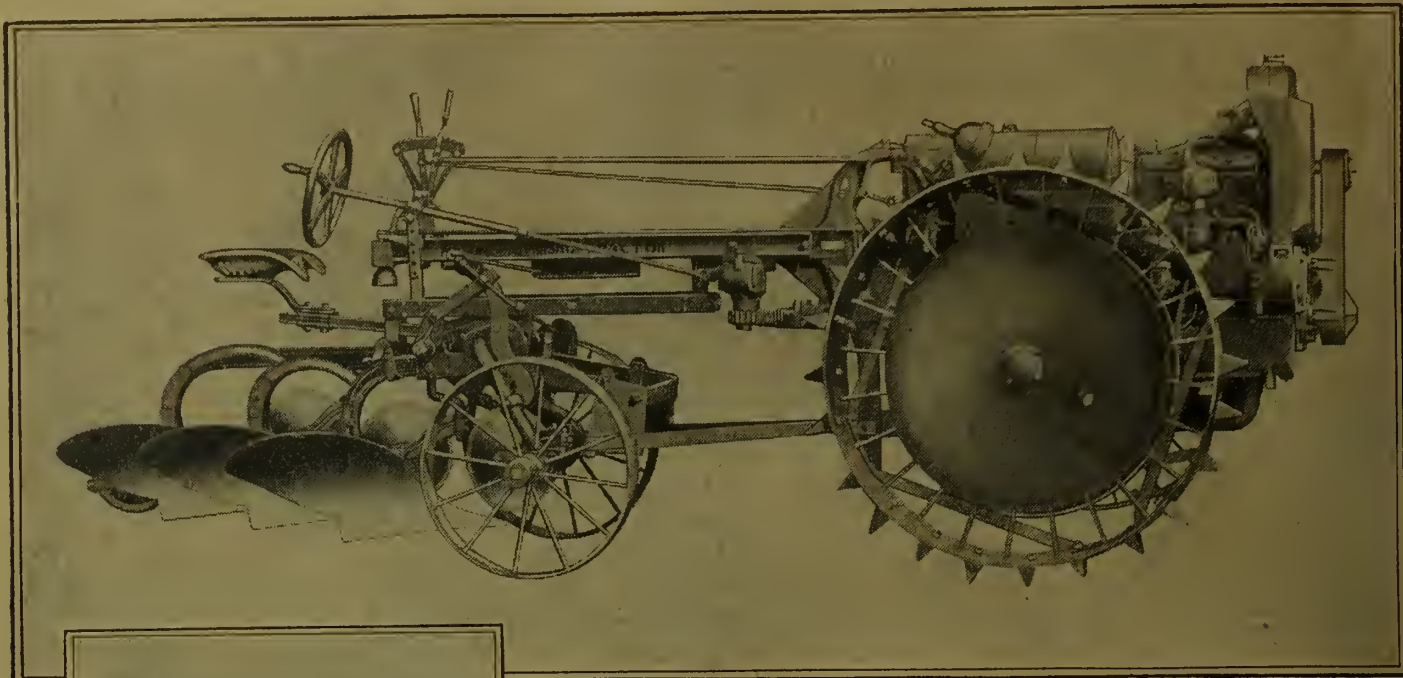
Detailed information, concerning pneumatic-tired farm trucks and general farm motorization, will be sent promptly on request by The Goodyear Tire & Rubber Company, Akron, Ohio, or Los Angeles, California.

GOODYEAR

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The Universal Farm Power Plant



Does It All

It is the correct farm power unit, doing all belt and field work, *including cultivating*, with one man.

3-2 Plow Capacity

3 plows for ordinary conditions which prevail in most sections of the country.

2 plows for extreme conditions and unfavorable seasons.

The Moline is unique in the tractor field—made so by our patent protection.

If desired you can use the "drag behind" or horse drawn implements you now have with the Moline the same as with other types of tractors

An average elimination of 4.7 horses per farm and a total average saving of \$1447.58 per year is reported by Moline Tractor performance records received to date—all made with the 2-bottom plow. Here are three representative reports:

Name and Address	No. horses displaced by tractor	Value of labor saved	Saved by the Moline Tractor
(Name on request) Pulaski, Tenn.	7	\$150.00	\$1614.00 *
(Name on request) Spencer, Iowa	5	800.00	1999.35 *
(Name on request) Ossian, Ind.	4	540.00	1577.50 *

* This is clear profit for the year over the cost of fuel, oil, repairs, depreciation and interest on the investment.

We will be glad to give anyone interested the opportunity to personally inspect these records.

See Your Moline Dealer or Write Our Nearest Branch at:

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Atlanta
New Orleans

Dallas
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St. Louis

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Baltimore
Los Angeles

Indianapolis
Stockton
Spokane

Portland
Salt Lake City
Columbus, Ohio

Denver
Kansas City
Omaha

Minneapolis
Jackson, Mich.
Sioux Falls

Des Moines
Bloomington, Ill.
Memphis

MOLINE PLOW COMPANY, MOLINE, ILLINOIS

At the National Tractor Show of the West

A Most Remarkable Showing of Implements and Farm Power
Under the Trees of Beautiful Verdugo Woodlands



A Look In at the National Tractor Show of the West, held in Verdugo Woodlands, Glendale.

1, View of automobile parking grounds. 2, Glimpse of L. M. Railsback Co. exhibit of Oliver tools. 3, Mr. Given More beside the Kardell tractor. 4, Standard Oil booth. 5, Pomona Air Cleaners, shown by the Vortex Mfg. Co. 6, New Yuba 15-25, one of four models shown. 7, Bates Steel Mule; part of exhibit of F. T. Briles. 8, Corner of Allis Chalmers exhibit. 9, Hart-Parr bootstrap test feature of Southern Border Motor Co. booth at the show. 10, Close up of the large Killefer subsoiler. 11, Fitch Four Drive Tractor. 12, First appearance of the new Stockton Sure Grip tractor. 13, View of the exhibit of Beeman tractors, Toro tractors and motor cultivators shown by Motors Equipment and Tractor Co., Inc. 14, J. I. Case tractor making short turn. 15, H. L. Marsh of the Farwest Sales Co. and the Midwest Utilitor Tractor.

TRACTOR NOTES

(Continued from Page 429.)

The Avery folks had exhibit of four of their favorite sizes, the 40-80, 14-28, 12-25 and 7-14, also the Avery motor cultivator, disks, plows, listers, etc. The lister attracted attention especially of cotton growers of the Imperial and San Joaquin Valleys.

Gregory and Sons made striking showing of the careful work of the manufacturer of the Trundaar. Trundaar transmission, especially, was made plain with cover plate removed and the dual worm drive transmission shown. "Every shaft is made from nickel alloy steel, heat treated and ground and mounted with either Timken or Hyatt bearings. Wm. Gregory showed up occasionally, but the principal burden was on the shoulders of the boys.

The Garden tractor maintains it is here to stay, and increasing interest

on the part of inquirers indicates the claim is being made good.

The Oldsmar five horse power 1,100 pound machine is adapted to light work in the orchard but more particularly for gardens and truck farming. It is also adapted to clean-up work on larger farms where big tractors are used.

"Schmeiser's way makes farming pay" and Schmeiser showed his way in the power lift graders and scrapers, portable automatic derricks and other labor savers.

Some dealers feel that some day there will be a change in expressing the rating or power of a tractor. At present we give rating at pulley and drawbar in horsepower. The Tractometer Co. exhibited and demonstrated workings of the Tractometer which shows actual number of pounds pull at the drawbar. These are built in

different sizes with capacity from 1,000 pounds maximum to 12,000 pounds.

"Deep Tillage" is the slogan of the Killefers. They exhibited some subsoilers and deep tillage implements which were wonders. Beside the deep working sub-soiler with its "gopher" drain appliance they made showing of the tractor chisel, the "chisel" being of the same form as the sub-soiler. These on the nine standards of the one implement 12 inches apart make a total cut of eight feet. Of course, only the largest type of tractor could handle such an implement. In fact, the Killefer folks have never made any use of the slogan "Light Draft"; they are pioneers in the field of plenty of power to do the work required in California soil.

N. B. Nelson, vice president of the Minneapolis Steel & Machinery Co., manufacturers of the Twin City Tractor, spent the week at the tractor

show. He is on a big trip, covering the entire western portion of the United States, and was pleased with the interest at the tractor show. Two Twin City tractors were exhibited by the Frank O. Renstrom Co., but one special tractor, made specially for orchard work in this section, with lower wheels and special fenders, did not arrive in time for the exhibit, but will be shown soon by the Renstrom Co. at 1100 South Hope Street, Los Angeles. Thos. McAlpine was in charge of the exhibit.

The Gray tractor was one of the new entries at the National Tractor and Implement Show and, as it was a new comer in this territory, the factory representative secured ground near the Verdugo Woodlands after the show and put on a continuous plowing demonstration with great credit to the tractor. While the Gray tractor is new on the Pacific Coast it is one of the old timers and stand-bys in the wheat and corn belt, as well as in Canada and foreign countries. It is a powerful drum type tractor with special hitches enabling the operator to successfully operate large tillage tools at both sides and in the rear of the tractor. In the wheat belt, Gray tractor owners disk and harrow 80 acres of land in one day with one machine at one operation. While the Gray is too large for citrus groves it will give a splendid account of itself on the wheat, barley, alfalfa, rice and cotton ranches of California and other Western states. Mr. Gray, president of the company and one of the big men in the tractor industry in the United States, also Mr. Dodge, his sales manager, and Mr. Hughes were at the show and are making distributor and dealer connections in the West on this trip.

The A. B. Johnson Company displayed both wheel type and tracklayer type of tractor at the National Show, the Stockton Sure Grip being shown for the first time. Mr. Johnson says that under the varying soil conditions of California both types of tractors have their place, and for this reason the Stockton factory has developed the Sure Grip. There is practically no difference, except in the drive, between the new model and the already well known Stockton wheel tractor. The Farwest Sales Co. has taken the Southern California distribution of this line in addition to the Midwest Utilitor garden tractor. The A. B. Johnson Co., with headquarters at Sacramento, is exclusive factory distributor for the Stockton.

The Tractor Association banquet was held Wednesday evening in the Alexandria Grill. Three hundred were present, including many factory representatives. The banqueters were in fine spirits (not the more than two per cent kind, however) over the splendid success of the show.

Willys Light was a source of much interest and the Joy-Reams Company, southern distributors, showed the farm lighting plant to splendid advantage. This company also distributes for the Sharples Separator Company. An exhibit will be made at the Riverside fair and the Los Angeles Livestock Exposition.

The L. M. Railsback Company was one of the large space users and, as usual, was there with the service. All-work tractors, one year in California, now number over 400 sold, and the Railsback Company is distributor for both Northern and Southern California, carrying locally Oliver and Killefer implements.

The city of Glendale and its boosters took splendid care of the visitors and came up entirely to Glendale's reputation for being the fastest growing city. It will get more big events, due to the fact that its citizens deliver the goods.

Personal and Otherwise at Tractor Show

1. Gray tractor shown for the first time at any Southern California tractor show.
2. The Trundaar tractor shown by Wm. Gregory and Sons, pulling 6,000 pounds on the tractometer.
3. Part of the exclusive power farming exhibit of Wm. L. Hughson Fordson tractor and tools.
4. Twin City Kerosene tractor.
5. Three members of the firm of L. M. Railsback Co. in their exhibit of Oliver implements: R. C. Holsted, Alex McCloskey, and L. M. Railsback. (Engraving on opposite page.)



In 4 Trips Across America Essex 4 Times Breaks Record

*San Francisco to New York---3347 Miles
In 4 Days, 14 Hours, 43 Minutes*

First Essex

San Francisco to New York
—4 days, 14 hours, 43 min.
Lowers Record 12 hours, 48 min.

Second Essex

New York to San Francisco
—4 days, 19 hours, 17 min.
Lowers Record 22 hours, 13 min.

Third Essex

San Francisco to New York—4 days,
21 hours, 56 min.
Lowers Record by 5 hours, 35 minutes.

Fourth Essex

New York to San Francisco—5 days,
6 hours, 13 min.
This car took a longer route and also
ran into storms. Yet it broke the
former record by 11 hours, 19 minutes.

A Proof of Reliability Never Equalled

The first test of an automobile carrying U. S. Mail across the American continent was made with the light weight, moderate priced Essex. And it resulted in establishing the Essex as holder of the trans-continental record both ways.

The performance—while of momentous importance in the world of speed and automobile sportsmanship—is of greater value to the motorist. For it removes all doubt about the reliability of light weight in the most difficult and hardest road service.

Also Holds These Noted Records

Many other unmatched Essex records forecast its ability to break the trans-continental records at will. For instance it holds the official 50-hour endurance record of 3037 miles in 50 hours. It holds the 24-hour dirt track mark of 1261 miles, made by an owner-car, which had previously seen over 12,000 miles service. And it holds the world's 24-hour road mark of 1061 miles, made over Iowa country highways.

Yet these records are significant only because they show the endurance and reliability of every Essex car. They speak for the ability of any Essex to duplicate these feats.

Essex Motors, Detroit, Michigan

(216)



WATCH the ESSEX



A New Log Saw

Cuts Faster, Costs Less, Makes More Money for Users and Works While You Rest

A new improved power log saw, now being offered, outdoes all other log saws in cutting wood quickly and at little cost. A new 4-cycle, high power motor equipped with Oscillating Magneto—no batteries to fail you—makes the saw bite through logs faster than other log saws. It finishes its cut and is ready for another before the ordinary saw is well started. This log saw—the Ottawa—has a specially designed friction clutch, controlled by a lever, which starts and stops the saw without stopping the engine. Others have imitated, but no other power log saw has this improvement just like the Ottawa. The Ottawa Log Saw sells for less money than any power saw of anything like its size.



Patent Applied For
The Improved Model, 4-H.P. Ottawa Log Saw

One man wheels this outfit from cut to cut and log to log like a barrow. Separate attachments cut down trees and cut up branches. Extra power lets the engine do heavy work of all kinds. Owners of the Ottawa Log Saw laugh at coal shortages and are making big money with ease, the machine doing the work. 35 to 50 cords cut any day, rainy or dry, by one man, are normal figures. And wood is approaching \$20 a cord! The Ottawa is compact, simple and durable. It sells for cash or easy payments and is guaranteed. If you have wood to cut the Ottawa Log Saw will be the most satisfactory machine you've ever owned. We suggest that you write the Ottawa Mfg. Co., 2744 Wood St., Ottawa, Kas., for their complete new illustrated book and prices, sent free to all readers of this paper.



Protecting Standards

Numbers of men in the Holt plant spend their whole time looking for trouble—yet they are the best friends of workmen, Company and "Caterpillar" Tractor owners alike, for they help to maintain the high merit of the Holt product.

As the result of a relentless inspection, they reject material and parts that do not conform to the exacting Holt standards. The "Caterpillar" purchaser reaps the benefit in lessened costs, longer tractor life.

"Accuracy"—the booklet story of Holt inspection—tells all about it.

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Los Angeles, Calif., Spokane, Wash.,
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Has TELESCOPE with magnifying glasses which enable you to see cross on Target quarter of a mile. Pays for itself on the first job of

IRRIGATING, DITCHING, TILE DRAINING,
TERRACING, etc.

Best investment any land owner ever made with Twenty-Two Dollars and Fifty Cents. Simple, accurate, durable and complete with full instructions. Used and endorsed by Agricultural Schools, County Demonstration Agents, and farmers from Atlantic to Pacific, and you will endorse it too, after using it—if not your money back.

Write for description of Level and TELESCOPE, details of money back guarantee; also name and address of our distributor in your section.

BOSTROM-BRADY MANUFACTURING CO.
89 Stonewall Street, ATLANTA, GA.



Personal and Otherwise at Tractor Show
(Titles of above engraving at bottom of opposite page.)

Sulphur



It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand and Fleur de Soufre, packed in double

sacks, are the fluffiest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100% pure, in double sacks, for Dry Dusting and making Paste Sulphurs.

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men \$5 per day for making the solution and applying same.

To create additional available plant food and prevent smut in grain, drill into the soil 110 pounds per acre of TORO BRAND SPECIALLY PREPARED AGRICULTURAL SULPHUR—or our DIAMOND "S" BRAND REFINED POWDERED SULPHUR. This soil treatment has increased various crops up to 500%. Send for Circulars No. 6, 7 and 8.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dusting Sulphur, Mixtures, etc.

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We are equipped to make immediate shipments. Send for Price-List and Samples.

Ask us for prices for Carbon Bisulphide; the surest remedy for destroying ground squirrels.

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America's Foremost Fence Post

The "Red Top" Steel Fence Posts have earned the right to be known as the world's foremost fence post.

Millions of these permanent steel fence posts have been installed on Government property, along the right-of-ways of leading railroads and on thousands of America's best farms.

The "Red Top" has answered the every requirement of the three general classes of post users. It has given continuous satisfactory service under most adverse conditions and in each case it has made good.

Natural enough that today it is recognized as the world's standard fence post.

Know this superior steel fence post. Identify it by the "RED TOP."

"Red Top" Fence Posts drive like a stake—Anchor like a rock—no concrete used for line posts.

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For Descriptive Matter
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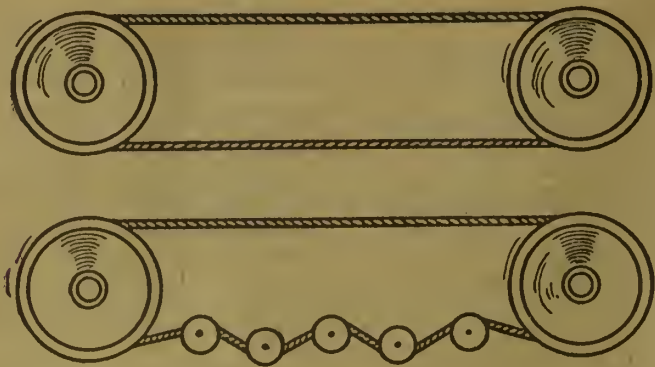
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HEAT PROBLEM SOLVED
STAR OIL-GAS BURNER makes cheap gas from kerosene. Use in any stove. Users delighted. Saves half fuel. Ten years successful record. Folder 30 free. Agents Coining Money.

STAR HEATING AND LIGHTING CO.
STATION C — LOS ANGELES



The California Cultivator
Costs Only \$1 Yearly



Which Rope Gets Most Wear?

The one pulling straight, or the one pulling through many turns?

Every time you bend a rope there's friction in the strands. Same is true of the track on a crawler type tractor. Every unnecessary bend puts wear at the joints and strain on the links.

That is why we build the Best track in *one piece* which oscillates as a unit. The only turns in the chain of track links are over the ends. The track simply bridges the ground depressions instead of attempting to follow the ground by bending. A longer track life is the result.

There's a reason for every feature built into the Best. They have been worked out by long years of tractor experience. Among these, besides the one-piece track feature, are—simple, powerful, long stroke, slow speed, valve-in-the-head engine built in our own plant—36 Hyatt and Timken bearings—absence of belts and chains—independently operated tracks which make easy handling and enables tractor to turn in its own length—three-point suspension which takes jolts and twists off motor and transmission—greaseless, non-friction rocker joint for track links—scientific selection of materials—careful, painstaking workmanship—complete housing of working parts.

These features are responsible for the remarkable success of the Best Tracklayer Tractor, a success covering many years.

If interested in tractors and tractor history, send for our complete catalog.

C. L. Best Gas Traction Co.

SAN LEANDRO

CALIFORNIA

BEST TRACKLAYER SIXTY



60 H. P.
at Pulley
35 H. P.
at Drawbar

Citrus Fruits of Shasta County

By Ernest Branton

IN the courthouse grounds at Redding, Shasta County, the writer critically examined several trees each of orange, lemon and pomelo. All were bearing fruits of good size and number and except the lemons all trees were in as apparent good health as those in the famous citrus belts. But they are in unfavorable situations so far as culture is concerned, being planted in the lawn. The nature of the surface soil would indicate that too much water, necessary for the lawn, remains with the lemons by reason of poor drainage. It is both a surprise and a pleasure to find citrus

best of vigor and summer cover crops or alfalfa grown between the trees to keep the soil temperature lower. Then with frequent irrigations throughout the summer to balance the atmospheric demand for heavy transpiration of the foliage this difficulty might be overcome. Stimulation at time of blossoming with nitrate of soda or other quick acting fertilizer would aid the trees in setting fruit, for at that period the trees are functioning most heavily and need assistance. Improved soil practice would also aid. To see these large, vigorous trees apparently helpless in overcoming climatic and other natural limitations makes a southern citrus grower wish to stay in Shasta County for a few years to experiment in producing commercial oranges in a really northern citrus belt.

Horticultural Outlook

Farmers of Shasta County are rejoicing over present freedom from smelter fumes, and the outlook is bright. For years the favored fruit sections had their development retarded and in some cases entirely stopped by these destructive fumes which floated over the fair valleys on the cool, damp morning air naturally beneficial to both animal and vegetable life. Even the native forests were killed and the baneful influence was both seen and felt for a distance of 35 miles from the smelters.

Early fruits, particularly cherries and almonds, were quickly overcome and oaks and pines were blasted as by forest fire. The mulberry and the fig seemed best able to withstand this suffocating atmosphere, but all vegetation was adversely affected and successful agriculture impossible. Then came scientific investigation and experimentation to overcome this deterrent to fruitfulness of fertile lands, for litigation was costly and both miners and farmers were under heavy annual expense due to warring over blighting of fruit crops or destruction of orchards. First the scientist saved the zinc that was wasting through the chimney tops and now he is recovering nearly all the sulphuric acid which in times past had slowly eaten away both wood and iron in the country surrounding. Now Happy Valley is proving true to her name, and peace and prosperity reigns in favored sections fast becoming famous for fruits second to none. During 1919 Shasta County produced more than 1,500 tons of dried prunes, 125 tons of green peaches, 250 tons of dried peaches, much of other fruits. The output for 1920 will be considerably larger in the old orchards and each year younger ones come into bearing. The outlook is both bright and satisfying.



Tropic Trees Far North

Pomelo on court house grounds, Redding, Shasta County, and the man who planted it, George Albro. Fruiting citrus trees and five species of palms proclaim this a semi-tropic clime.

trees thriving so far north, at the very head, or beginning, of the great Sacramento Valley.

This demonstration was so interesting that a trip was made down into Happy Valley, where near Olinda were found some large, vigorous orange trees that have passed through many years unscathed by heat or frost. Close inquiry developed that the reason why commercial acreage has not been attempted is because the trees do not yield sufficiently. Here the summers are quite warm, and this alone would affect the crop adversely unless trees were given the same treatment applied in the hotter parts of the central and southern citrus belts. Trees must be kept in the

Kern County Cotton

Cotton Care and Culture

The land is thoroughly prepared in early spring by plowing, irrigating and harrowing, and planted about April 1. When plants come up they are irrigated five times during the season. Mr. Phillips says three floodings would suffice instead of the five furrow irrigations. The rows are 48 inches apart and the plants about eight inches in the row. Cultivation follows each irrigation until plants are so large the side branches would be broken, but irrigation still continues. Picking commences late in September.

There was no labor shortage last year and none is anticipated this picking season. Pickers are paid by the hundred pounds, two cents for short staple and four cents for long staple. In explanation of the difference in prices, Pima has but three locks of cotton while Durango and other short staples have four or five locks and all is picked at one pull. Long staple has also to be picked cleaner or more free from the dried leaves. If the leaves do not become dry naturally they are killed by the lightest early frosts. Only local seed was sown last and this year and same will be true for 1921. The best price

EVERYTHING about the Kern County chamber of commerce is hustle and bustle for Secretary Johnson is selecting and collecting exhibits for the coming "Kern County Cotton Carnival" at Bakersfield. The county grew 15,000 acres of cotton this year and expects to double the area for 1921. The value of the 1920 crop was \$4,000,000. Because of the growing importance of this crop the writer visited several cotton sections, but looked about for a grower also experienced in other cotton states.

J. T. Phillips came from Texas after long years of cotton growing in that state and purchased the ranch east of Bakersfield, then owned by Geo. H. Peters, the well known potato grower. After 35 years experience in cotton Mr. Phillips chose this heavy black fertile soil and has followed the same methods of care and culture as in Texas. He is growing both Pima (long staple) and Durango (short staple) and while the district in 1919 averaged but three-fourths of a bale to the acre, the Phillips fields yielded more than a bale. A bale is about 1,500 pounds "in seed" or 500 pounds after ginning.

received for Durango in 1919 was 61¼ cents but some was sold in the seed because the crop had to be hauled to Fresno for ginning. This year more gins are being built and the haul will not be more than 25 miles, perhaps far less. On the day the writer visited the Phillips ranch 25 specimen plants were dug and boxed for exhibition at the state fair.

Other Local Crops

Only a mile or two from the Phillips ranch are the potato fields of Geo. H. Peters, to reach which we drove past a large acreage of alfalfa and cotton; the largest and tallest of the latter was found on the E. W. Simons ranch. Mr. Peters had 210 acres in potatoes this spring, all but 20 acres, of "British Queen," being planted to White Rose. Early plantings yielded 122 sacks to the acre, some late plantings far less and the whole crop was lighter than expected. But Mr. Peters says local land is getting too valuable for potatoes and some of his will next year be planted to grapes, Thompson Seedless on the lighter soils and Muscats, Emperor and Almeria on heavier lands.

Over toward Shafter F. E. Mannell has nine acres of Emperors in similar soil to that in the Weed Patch district east of Bakersfield, that have yielded such large crops that much local planting of grapes will result. Mr. Mannell's apricots were also of very large size this year and returned him \$750 an acre. The trees have been long pruned only. It is anticipated that large sections of the Arvin and Weed Patch districts will next year be planted to cotton as 1920 experiments point to larger profits than lie in present crops. Walter Kuntz, son of an official of the California Vegetable Union at Los Angeles, is spending a vacation on the Peter's ranch and believes no part of California has a more promising future.

CONCENTRATED CIDER WILL KEEP SWEET INDEFINITELY

Sweet cider, rendered commercially possible the year around by concentration, looms up as a healthful oasis in the arid desert of national prohibition, and opens a profitable outlet for wind-fall apples, say specialists of the United States bureau of chemistry.

They have developed a process for concentrating sweet cider which consists essentially of freezing the fresh apple juice, grinding the frozen product, and then by means of a centrifugal process separating the essential cider solids from the frozen water, in much the same way that cream is separated from milk. Five gallons of cider can be reduced by this process to one gallon of syrupy cider concentrate. This cider concentrate, being so much less in bulk, can be shipped and stored much more economically than the bulky fresh cider. It is also easier to keep sweet when concentrated. When it is desired to use the cider concentrate it can be restored to its original bulk, condition and flavor simply by the addition of ordinary drinking water.

Concentrated cider will keep sweet much longer than in its original condition, and in cold storage it will keep sweet indefinitely. Its reduced bulk makes it practicable to keep it in cold storage. The concentrated product thus promises to make fresh cider available at soda fountains throughout the summer months.

This product, to be profitable, should be made on a fairly large scale, and preferably in connection with a commercial ice plant located near an apple section. Since the cider season is short, it is doubtful whether it would be profitable to erect a refrigerating plant solely for the purpose of freezing the cider. As a by-product or side line to a regular ice plant the cost of the process would be reduced materially, as the cider making season comes at the very time when the demand for ice is greatly diminished by the approach of cold weather. As the concentrated cider has not yet been marketed on a commercial scale, those proposing to undertake the process should first satisfy themselves that they have a ready and convenient outlet for their product.

Detailed information regarding the process and the machinery will be furnished upon application to the United States Department of Agriculture, Washington, D. C.

HYATT

ROLLER BEARINGS

For Ensilage Cutters

THE farmer must handle his silage at the right season and have a dependable machine that will get the job done in time.

Hyatt Bearings in ensilage cutters make for more dependable operation. They require far less time for oiling, provide more economical operation, decrease the need for repairs and add greatly to the life of the machine. They never need to be adjusted.

And this is the kind of service that Hyatt Bearings also give in tractors, trucks, plows, threshing machines, grain binders, wind mills and other farm machinery.

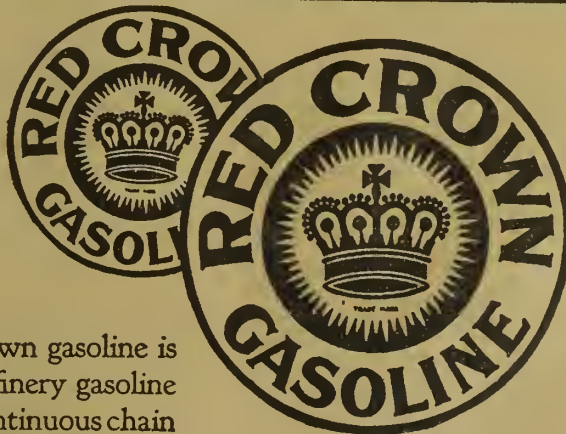
Send for the Ensilage Cutter booklet.

HYATT ROLLER BEARING CO
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Chicago

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Detroit New York City



Hyatt Roller Bearings are used in the following makes of ensilage cutters—Rowell, Holstein and Plymouth.



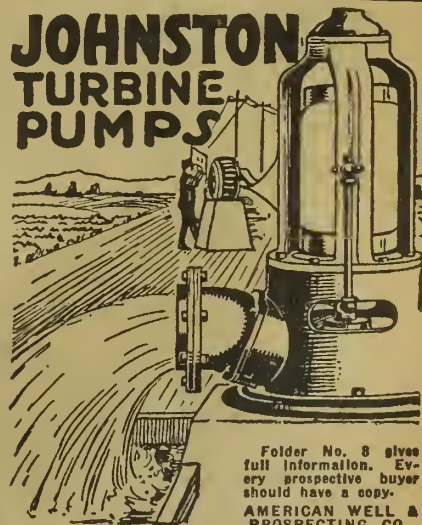
Red Crown gasoline is an all-refinery gasoline with a continuous chain of boiling points.

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New and second hand pipe and casings. Riveted steel pipe, valves and fittings. Mail orders given prompt attention. Write, phone or call,

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Southern California Fair

Riverside, October 13 to 19, 1920

The Big Agricultural Fair of the State this Year

Great Livestock Show

Wonderful Exhibition of Blooded Horses, Cattle, Swine, Sheep, Goats and Rabbits

A Comprehensive Agricultural Display in Which All Sections of Southern California will be Represented in Exhibits.

Industrial Display

Largest Tent Available Will Be Devoted Entirely to Industrial Exhibit. Biggest Goat Show in the United States.

Poultry Show—Rabbit Show—Dog Show.

Dairy Exhibit and Educational Demonstration.

Attractive Junior Agricultural Department. Indian Exhibit.

Daily Educational Programs with Moving Pictures in

All Departments. Women's and Fine Arts Display.

Great Racing Program

Speediest Horses in the West This Year. 115 Harness Entries, and Running Events. Six Big Days of Racing.

Free Amusement Features Day and Evening. Athletic Events.

Boxing Bouts. Daily Aerial Exhibitions.

Admission 50c. Special Railroad Rates Free Auto Camp

Golden Glen Jerseys

60 Registered Females in Herd

At our Golden Glen Stock Farm headquarters we are building up a herd of well bred high-testing Jerseys under ideal ranch conditions.

Twelve cows now on official test; all cows to go on test at freshening time.

Visitors welcome always. See herd at Riverside, October 13-19.

Geo. W. Thomas & Sons

Arlington, Cal.

POMONA AIR CLEANER

Seventeen Tractors at the Show Were Equipped With the Pomona Air Cleaners

DESCRIPTION—

In the POMONA AIR CLEANER separation of the dust from the air is effected in three stages in three parts of the cleaner. There is a centrifugal separation in the lower part of the cylinder and a second centrifugal separation in the space between the filter and the baffle. The final and complete cleaning is then effected in the oily fiber of the filter. In each case the dust is caught and held in oil which is the only certain way we have found for holding it.

The object of the two centrifugal cleanings is to relieve the filter from the heavy duty of taking care of all the dust. Thus we combine absolute thoroughness with large capacity and obviate the necessity of constant care.

The oil used in the cup and for saturation of the filter may be such as is drained from the crank case.

Write For Descriptive Folder

VORTEX MANUFACTURING CO.

POMONA, CAL.



Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Cover for Walnut Orchard

I have a walnut grove, soil light and loamy, does not pack after irrigating. Would you suggest planting alfalfa in February and using it for a summer cover crop to be plowed a month before walnut picking time?—Subscriber, Anaheim.

Yes, if you have sufficient water, this would be good procedure, or perhaps it would be better to seed in October and secure deeper rooting system, that is, providing it is not caught by early frost this fall. However, we think that vetch or melilotus might give you better winter growth. Then

this could be plowed under in February or March and Whippoorwill cow peas could be planted, thus securing two cover crops. But, as noted above, be sure of your water, for both the summer cover crop and maturing nuts call for plenty of water during June and August.

Water for Fire Protection

We recently had inquiry as to amount of water necessary for fire protection of group of farm buildings having floor space of 2,000 square feet, two inch pipe 300 feet long with head of 150 feet. This was referred to the department of agriculture. It seems that the bureau of public roads has to do with such matters as water systems on the farm, and we have letter from S. H. McCrory of the division



A Quartet of Tractor Show Scenes

1. View of the extensive exhibit of the B. Hayman Co. with band in foreground. 2. Just a glimpse of the attractive display of the Avery Co. 3. Joy-Reans Co. display Willys light plants and Sharples cream separators and other dairy and electrical equipment. 4. First Southern California appearance of the Stutes-Mar tractor.

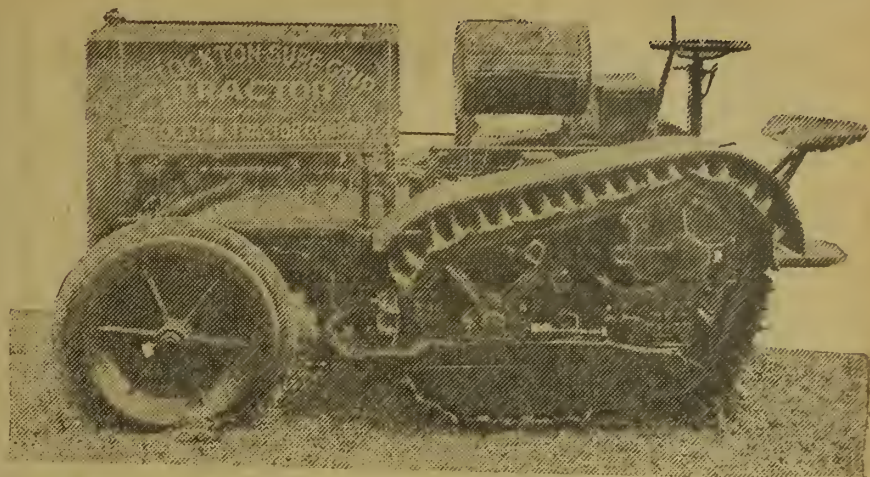
of rural engineering. Mr. McCrory writes:

"At least 4,000 cubic feet of water in storage would be required in order to receive recognition and credit from insurance authorities. Of course, a certain measure of protection would be afforded were the storage much less than stated.

"The conditions attaching to the pipe system, as stated in your letter, that is, 300 feet of two inch pipe and a head of 150 feet, would preclude the possibility of securing even one effective fire fighting stream. Under the conditions stated above, and without considering the losses in hose and nozzle, the discharge through new, clean, straight iron pipe would be not more than 140 to 150 gallons a minute, that is, that quantity of water would emerge through a full two inch bore, but at a velocity too low for fighting fire. If you desire to inform us as to the size and length of hose

canes on Sultana vines last year but they did not make any new wood. What should I leave this year? When is the best time to prune vines? Do you think a person would play safe to plant wine grapes, that is, will the price stay up? Or what grape would you advise planting? What do you think about the Malaga grape? Is it in big demand?—Subscriber, Arbuckle.

Owing to the present unsettled state of the grape varieties formerly grown for wine making we hardly feel justified in advising anyone what specific varieties to plant. You seem to be growing largely of raisin grapes. A member of our editorial staff recently made a comprehensive survey of grape growing districts and found growers of Thompson Seedless in the best districts very optimistic and largely extending their plantings. Also new districts having light or sandy soils will plant this variety (and oth-



Stockton SURE GRIP Tractor

Wins Instant Approval

Thousands of experienced farmers a day examined the new Stockton Sure Grip tractor at the National Tractor Show and gave it instant approval.

From front to rear, the Sure Grip is carefully built and will easily maintain the reputation established by the old reliable Stockton Open Wheel Tractor. Both types of the Stockton Tractor contain high grade material and workmanship, and in design and construction are modern, assuring power, economy, endurance and ease of handling.

You can now select your Stockton in either Track or Wheel Type, as required for your work, and know you are getting the best machine of its size on the market. You will be pleased and proud of your selection.

Investigate. Write today for particulars and Circular C. Mailed Free on Request.

—Limited Territory Available—

A. B. JOHNSON COMPANY

Exclusive Factory Distributors
213 California Fruit Bld., Sacramento, California

FARWEST SALES CO.

Distributors Southern California
231 North Los Angeles Street, Los Angeles, California



Two of the Prominent Tractors at National Show

Top, Monarch Neverslip tractor with hoist attachment operating in northern woods. Lower, J. I. Case Plow Works Company Wallis tractor in Southern California orange grove.

and the size of nozzle you propose to use, we will be glad to advise you as fully as we can regarding the quantity of water that would be thrown and the distance that will be covered by such stream."

Mr. McCrory refers to a bulletin which, however, has more to do with pipes and carrying capacity than with amount of water required. This is "Water Systems for Farm Homes," is Number 941, and we believe may be had for the asking by writing Division of Publications, Washington, D. C.

Nematodes

Around Garden Grove some growth about size of beads attaches itself to roots, killing vines. After vine dies the inside of main stalk turns black. Attacks are spotted through the fields, no entire fields affected. What can be done to kill the pest?—Subscriber, Garden Grove.

Doubtless this is an infestation of nematodes, which are seriously affecting so many lands in California. About the only treatment for the pest is to grow crops which are resistant to their attacks. If this is done for three or four years they may be eradicated. Summer fallowing, especially during extremely hot weather, greatly reduces their numbers. Greenhouse treatment is possible by use of formaldehyde or steam, but this is not possible in open ground. The most serious feature of the problem is that nearly all garden and truck crops, beets, etc., are affected by the pest. Field crops that can be handled by dry farming, such as barley and other grains, grasses and sorghums are practically immune and their culture for a few years on affected land will clean them out.

Thompson Seedless—Malaga

What is the best way to prune three year old Thompson Seedless and three year old Sultana vines? I left two

ers) where other crops were grown the past years. Full directions for handling Thompson Seedless vineyards will appear in an early issue of the Cultivator under the title of "Among the Thompson Seedless," and as pruning is not done until early spring this article will sufficiently answer your questions on this phase of the subject.—E. B.

WINE GRAPES MAKE FOUNTAIN SYRUP

Red grape syrup made by the University of California and tested in several soda fountains has given excellent results as a beverage when diluted with carbonated water or when used in ice cream sodas. It is also declared to be well suited for use in water ices and similar frozen dishes. Syrup prepared by the freezing process is said to retain the full, rich, fresh grape flavor in concentrated form and is a delicious product both for home use and for soda fountain purposes.

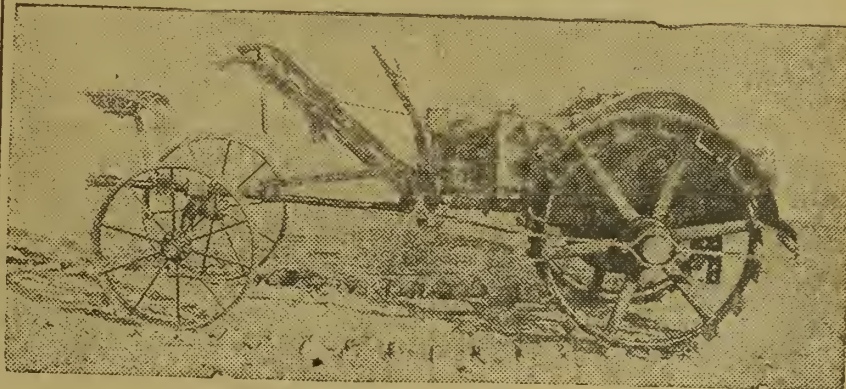
The manufacture of red grape syrup is described in the College of Agriculture Bulletin, No. 321, by W. V. Cruess, assistant professor of food products, and will be sent free to prospective manufacturers upon application.

START CAMPAIGN ON MEALYBUG

Owing to the dissatisfaction among pear buyers, active work is being started in Sacramento districts by T. D. Urbahns of the state department of agriculture, through which the control of mealybugs on pears may be effected. This pest is objectionable because of the excretion of sticky "honey dew" on the fruit.

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This Month in the Vegetable Garden

Southern California

By D. F. Reichard



HERE is lots to do about a well kept garden this month. First of all look after the growing stuff. See that moisture is kept supplied and don't fail to attend to the cultivating. At this time of the year it is always well to begin cleaning up what is left of the summers' growth, taking out all dead vines and plants. Any that have been infested with insects or fungus disease should be burned and all healthy plants and rubbish should either be put into the compost pile or turned into the soil. The more of this litter that can be put into the soil the better your soil will be. We cannot expect to keep taking crops from our garden without putting something back, and this roughage that is obtained from garden litter is one of the best foods for your next year's plants, beside giving humus which keeps your soil porous and enables it to retain moisture as well as giving the desired aeration. Besides what roughage we can accumulate from our garden there should be added during the fall months, on such ground as is not occupied by growing crops, barnyard fertilizers (get this as fresh as possible), and strew it over your land two to four inches thick and let it leach into the soil. After having had one or two good soaking rains on it, spade or plow it under. In the old countries at this time of the year they do what they call trenching, which is done by spading trenches two feet or so deep and filling them in with a foot or so of litter composed of tree prunings, leaves and other roughage that accumulates around the place, and then covering this with the dirt from another trench alongside, continuing this through the garden as long as the roughage lasts, then the next year continuing this with the roughage accumulated during that year. In this

way they go over the space every three or four years.

On growing plants where these manures cannot be worked in at this time of the year an application of high grade fertilizer is very desirable and will give your plants the desired luxuriant growth. In planting one's garden the space where your growing crops are this year should be alternated so that it will get the roughage next year.

Plantings during this month will consist of the more hardy vegetables. It will consist in the planting of seeds of Egyptian beets; carrot, Half Long and French Forcing; cabbage; cauliflower; Swiss chard; curled endive; chicory; New York or Los Angeles market lettuce; leeks; parsnips; radishes; turnips; winter spinach; peas, Laxtonian for something quick maturing and Stratagem and Senator for a little later. In protected foothill sections put in Canadian Wonder and Ventura Wonder beans. October is one of the best months to put out garlic and onion sets, the Bermuda varieties being preferred for quick early onions. Set out plants of Winningstadt or Cannon Ball cabbage; early cauliflower and lettuce.

Take in your matured winter squash and pie pumpkins, as an early frost may catch them and do them some damage. Store these in a fairly cool, dry place. Sweet potatoes should also be dug, for if the vines get frost bitten it seems to affect the tubers, taking much of their flavor from them. Take up the potatoes so as to scratch and bruise them as little as possible, stowing the perfect ones either in dry sand or wrapping each in dry newspaper and keeping in a sheltered, dry place. In this way they should keep in perfect condition until February or March.

Northern California

By A. R. Gould



HERE will be plenty to do this month to get the old plots cleared off, and these may be prepared by thoroughly trenching with well rotted manure. All garden refuse should be buried with lime, but diseased plants should be burned as there is danger of fungus spores being wintered in the soil to become a pest next season. It is essential that every gardener be very observant in regard to fungus diseases, as, if these are not stamped out, they eventually will prove a serious menace. In planning for next season's crop change the location as much as possible. Collect seed from any desirable types of beans, tomatoes, melons or squash, dry carefully and store, keeping a full description on record as to date of collection, etc.

Carrots

Sow for succession on well prepared ground in rows 16 to 18 inches apart; French Forcing and Danvers Half Long, and thin out any sown last month to at least six inches apart. Cultivate between the rows of seedlings.

Beans

Seeds of the late sown varieties may be collected. Shell beans are easily stored for the winter and are useful, especially the small white. The Broad Windsor, a fine winter type, may be sown now in rows two to three feet apart. These grow two feet high and are very hardy.

Peas

The early varieties may be sown. For this crop the ground must be deeply cultivated and a moderate amount of manure applied. By sowing at intervals of a few weeks a successional supply may be obtained. There are two types, tall growing and dwarf. The latter are generally more easy to grow and some varieties are heavier

croppers. The tall varieties require stakes or wires for support. Seeds should be sown in rows, not too thickly, two feet apart. Early varieties dwarf to sow now are Laxtonian, Blue Bantam and Little Marvel. Gradus and Alaska are good tall varieties to grow. One pound of seed should sow 100 feet. They require plenty of water during the growing season.

Lettuce

Keep up a successional supply by planting this month Los Angeles or May King. White Paris Cos is a very popular variety, also known as romaine, and is hardy. Sow the seed in rows 20 to 24 inches apart, thinly or broadcast in a seedbed and later transplant.

Celery

Keep this crop well earthed up to blanch the stems. It will keep many months in the ground and may be also stored in soil in the cellar if the ground is required for other crops.

Tomatoes

Pick all sound fruits of this crop this month and these will ripen inside for late use.

Beets

Thin out the plants of those sown last month to six inches apart in the row. Store in the cellar all roots now matured.

Kale

Keep the cultivator busy between the rows.

Cabbage

At the end of the month plant out the best plants from the varieties sown last month. Plant firmly 12 inches apart in rows two feet apart.

Swiss Chard

Thin out this crop sown last month as advised to ten inches apart in the

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row. There is still time to make a sowing of Giant Lucullus.

Onions

The ground may be prepared for the early varieties by deep trenching and rich manuring. Sow Early Pearl, Early Californian Red and White Bermuda, very thinly in rows about 20 inches apart.

Radish

Sow the winter varieties, Rose Winter and Black Spanish, in rows 18 inches apart.

Leeks

Frequent applications of liquid manure will improve this crop.

Strawberries

Planting new plots is still in order and good varieties may be secured for planting, such as Oregon Improved, Marshall, Brandywine and Banner. The last named is a very large cropper and much in demand. Plant on rich soil 12 inches apart in rows at least 2½ to 3 feet apart to allow for development and proper cultivation.

Raspberries

Secure canes of this for planting in well prepared rows three feet apart. Cut back this year's canes to three feet high and thin out the canes. St. Regis and Cuthbert are two excellent varieties to grow. Apply manure to the old plots and dig well in.

Southern Arizona

By M. E. Bemis



OCTOBER plantings of garden vegetables are more extensive than for September. The list includes beets, cabbage seed, cabbage plants, carrots, celery, cauliflower seed, cauliflower plants, endive, kohlrabi, leek, lettuce, onion seed, onion sets, parsley, parsnips, peas, radishes, salsify, spinach and turnips.

Seedsmen tell me that there is an increasing interest in fall gardens this year and that the demand for seeds is to them an indication that there is something of a revival of home garden work. Making a garden may be taken as prima facie evidence of a return to sanity. Let us hope so, anyway.

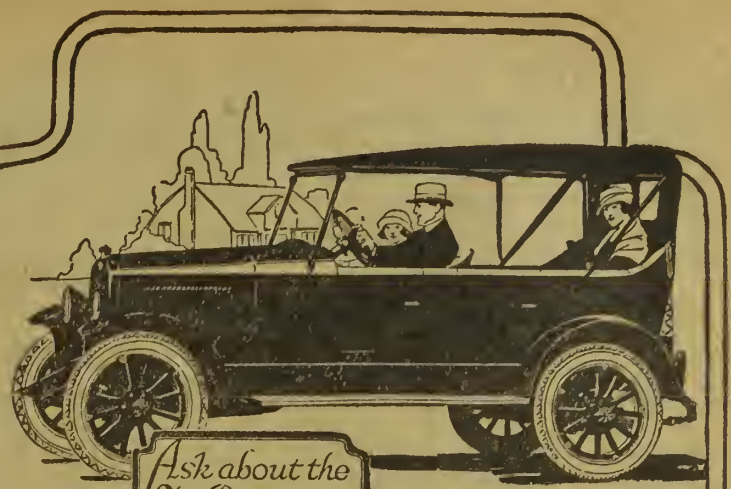
In some parts of the country the influence of the federal bureau of education in school garden work is helping. For a number of years the city schools of Phoenix have maintained gardens near each of the grammar schools, and here under competent instruction the boys have been given an opportunity to learn something of real garden work. Each boy is given a plot of ground and permitted some latitude in the selection of the things which he will plant, and then he is required as a part of his manual training work to keep the plot cultivated. The boys receive instruction which will be of invaluable help in after years. These gardens are seen by thousands of people and stimulate a garden making spirit.

As one might gather from the list of plantable things for October, garden work here is not so very different from spring garden plantings in the northern and eastern sections. There is some difference though. Cabbage seed if planted should be put in the ground where the plants are to grow. Cabbage plants may be purchased and put out. Onion seed for transplanting is probably not as desirable as onion sets. Late peas are more desirable for planting now than early ones, but the latter part of the month is early enough for those.

Beets, carrots, radishes, turnips and plants of this kind may be planted in the usual way and almost continuously.

As commercial crops lettuce and spinach offer the greatest inducements. Lettuce growing has come to be one of the established industries of the Salt River Valley. Spinach has also proved profitable. The main crop of both these should be planted in October, if not already in.

The quality of the pears being turned out by the farm bureau evaporator at Placerville is declared to be satisfactory in every respect and fully equal to the sun dried product.



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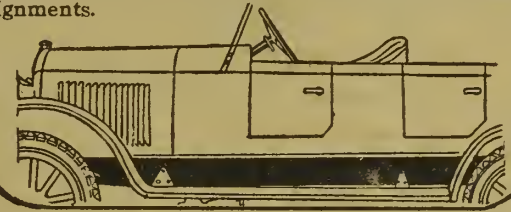
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The grand champion boar Escalon May Star 266976 at head of herd, assisted by the 1st prize senior yearling boar Escalon Type 2d 267741.

Well developed high quality young boars and gilts for sale sired by the above boars and out of high class registered dams.

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A few choice boar pigs for sale sired by the above boars. A few choice bred sows for sale at reasonable prices.

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The boar is 60 per cent of the herd. We showed the 1st prize aged boar at the state fair this year. We have some of his pigs, both sexes, for sale at reasonable prices.

The Victory Herd of Holsteins

Holsteins of known value, headed by Mr. Piebe De Kol Segis Pontiac, a son of King Segis Pontiac Count, acknowledged one of the breed's greatest sires, and our junior herd sire, King Pontiac Alcartra Priety, whose dam made 28.61 lbs. butter out of 805 lbs milk in 7 days, now on yearly test. A young bull from this herd is a profitable investment.

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San Joaquin Holds First Fair in 18 Years

By R. P. Royce



AFTER a lapse of 18 years the wonderfully rich county of San Joaquin swung into line with the other good counties of California and held a highly successful fair, September 14-18. And let it be said that when it was decided to hold a fair the agricultural interests of that county set about it in a most business like and progressive manner. The old fair grounds near the edge of town that had been unused all those years was taken in hand and literally rebuilt—and rebuilt in a manner that gives to San Joaquin County the right to claim the best equipped plant for the holding of a livestock show of any county in the state, and in many ways the equipment excels that of the state fair.

The seven new barns, six for cattle and one for swine, are of splendid design and permanent construction, being built of cement and hollow tile. Several of the barns have rooms above for the living quarters of the men in charge of the livestock, and are provided with all conveniences, including showers. The swine barn is the largest of the group and in addition to the pens has a commodious judging ring. It is rather remarkable that with all this new equipment more room is needed and contemplated for next year.

The fair spirit has been awakened in that county and from now forward it can be certain that the annual San Joaquin County fair will come to occupy an important place in the fair season of this state. The spirit of the promoters is fine and finds its justification in knowledge that they have made a definite contribution to the future welfare of their community. It was really astonishing to hear the visitors remark that they had no idea that their county was the home of so many superior herds and flocks of livestock, and exhibitors declared that they came in contact with more real prospective buyers than they encountered at the state fair.

While livestock was the outstanding feature of the show, it is not to be inferred that the other departments were lacking in interest or exhibits. The entire show was one of balance and a credit to the community. There was the usual line of shoddy concessions that are afflicting all the fairs the present season. The visitor, after successfully fighting his way past the ballyhoosers with their cheap displays of claptrap, came to the largest industrial tent, wherein was housed a complete showing of industrial exhibits. Then came the farm bureau tent, filled to capacity with splendid displays testifying to the wealth of production of the different farm centers. Eight or ten centers had displays, all good, but hardly up to the standard set by the Escalon center, that was awarded the first prize of \$300. The Linden center rather specialized on nuts and won second, and the Farmington center was third.

Then came the machinery exhibit, and it was all that might be expected to represent such an admitted center of implement and tractor manufacturing. There have been state fairs that could not boast of a better display.

Next came the livestock exhibit, the outstanding features of which were the exhibits of dairy cattle and hogs. The Holstein department boasted of the heaviest entry list. The local breeders of the Escalon district were out in force to measure strength with their neighbors from Stanislaus County who had been induced to stop over on their way home from the state fair. Nearly all the classes were comfortably filled and of a quality to furnish Arthur L. Ingebritsen, the judge, plenty of work. H. E. Cornwell of Modesto carried off the grand champion bull award with his outstanding bull, Sir Johanna De Kol Rag Apple; R. L. Holmes of Modesto took like rating with his splendid cow, Mona Fobes, and in doing so reversed the rating given at Sacramento when Holmes' other entry, Ida Lotta Winifred Burke, stood above her stall mate. Mona Fobes is a cow of most acceptable type, especially strong in constitution, of correct lines and swinging a better balanced udder than her chief competitor.

Other Holstein exhibitors were:

Azevedo Bros., Patterson; M. J. & B. A. Edwards, Ripon; J. M. Campbell, Escalon; J. C. Ramsey, Escalon; J. W. Scudder, Escalon; F. A. Darling, Escalon, and Salfeld & Condon, Stockton.

Closely following the Holsteins, the exhibit of Jerseys was one of much class, several of the herds coming direct from the state fair. Most of the competition was furnished by the three veteran breeders, J. E. Thorp, Lockeford, Guy H. Miller, Modesto, and N. H. Locke, Lockeford. However, it remained for a small breeder, G. A. Moore of Ripon, to walk away with the female championship on the 14 year old cow, Empress Lass. An interesting development of the show was the fact that it was a son of the champion cow, Empress' Valet of L., shown by Locke, that was made senior and grand champion bull. It will be remembered that Empress Lass has to her credit several championships, including that award at the Alaska-Yukon Exposition. Miller had the junior champion female and Thorp the junior champion bull. Other exhibitors were D. T. Wieland, Valley Home, and E. J. Wilson, Ripon.

A. B. Humphrey of Escalon was the only exhibitor of Guernsey cattle, having his entire show herd entered.

George Murphy of Perkins made the only showing of Milking Shorthorns.

Professor E. H. Hughes of the college of agriculture placed all the cattle awards save the Holsteins.

Two herds of Shorthorns were exhibited. George E. Dierssen, owner of the Wildwood herd, Sacramento, had the grand champion bull, Clarion. H. L. & E. H. Murphy, Perkins, had the champion female, Roan Gloster.

In the swine department the Poland China exhibit was the largest. Three herds, Geo. V. Beckman & Sons, Lodi, J. F. Lehman, Lodi, and N. K. Horan, Lockeford, competed for the awards placed by C. E. Howell of the college of agriculture. Lehman had all the boar champions and the grand champion sow. Horan had the junior champion sow.

The Duroc-Jersey competition was limited to the herds of J. E. Thorp, Lockeford, and The Western Laboratories, Stockton. Thorp had the sow champions and the junior champion boar. The Western Laboratories had the senior and grand champion boar.

A. B. Humphrey of Escalon had the only Berkshires entered.

Calla Grove Farm, Manteca, exhibited Hampshire sheep.

Only a few horses, and of most mediocre quality, were shown.

EDUCATIONAL DAIRY EXHIBITS AT L. A. LIVESTOCK SHOW

The dairymen's department of the Los Angeles County farm bureau is planning a large exhibit at the Livestock Show, October 2-10. The exhibit will include demonstrations of the value of cow testing and the influence on the improvement of the herd exerted by the use of a pure bred sire.

The dairy cow competition being staged will have cups and medals on display at the show.

An attractive comparative food exhibit is being arranged by the California Dairy Council. The display will show the food values in milk and other dairy products as compared with other foods, also the actual amounts of the different elements contained in a gallon of milk and their action upon the human system. A trained woman will be in charge of the exhibit and she will talk to children and parents regarding the necessity for an adequate supply of milk in the diet.

Another Dairy Council feature will be the operation of a milk bar for the purpose of demonstrating what delicious and nourishing drinks may be made with milk.

The council will also cooperate with the farm bureau in maintaining a demonstration herd of dairy cows to show the benefits the dairymen can obtain from belonging to cow testing associations.

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1000 ft. 18-inch Riveted 12 gauge
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In the great young sire, Lady Shylock's Financier 148173, will be found some of the very best blood lines in the United States. His sire, Shylock's Financier 84645, is by Fabby's Shylock 70334, sire of Shylock's Buxom Beauty 195695, who produced as a two year old 467 pounds butter from 7,529 pounds milk. He is also the sire of Financial Countess' Lad, grand champion bull at Waterloo, Iowa, sold at auction for \$5,000; Sans Aloï, grand champion bull at Colorado state fair; also Mayfield Lottie, first prize two year old, 14 entries, Illinois state fair. His dam, Financier's Countess, was sired by Financier, who was out of the same dam as Financial Countess, the highest testing daughter of Financial King, the dam being Financial Countess, with a record of 935 pounds butter at six years, and she being sired by Financial King, a prize winner in the Royal Show, sire of 15 tested daughters and 13 proven sons.

In addition to this royal breeding, on the sire's side will be found such great sires as Carnation's Fern Lad, sweepstakes bull, Iowa state fair, sweepstakes Kentucky state fair, also sweepstakes Indiana state fair; Imp. Golden Fern's Lad, Champion North Club Show, Jersey.

The dam is that good cow, Fern's Imperial Lady 256861, with a record of 730 pounds 13 ounces of butter from 11,507 pounds milk, whose sire was Fabby Shylock 70334, and out of the cow Rowena's Daisy, a winner in the Royal Show, Jersey, and grand champion at the Oklahoma show.

This great sire is now at head of the Grant A. Brown herd at El Monte, where his daughters will be raised and developed.

Among the high record, Register of Merit cows in calf by him are Gertie of Willowwood, 568.17 pounds fat from 8,957.7 pounds milk; Gene of Willowwood, a two year old with a record of 530.07 pounds fat from 8,333.9 pounds milk; Conquest's Nellie, 473.05 pounds fat from 9,569.9 pounds of milk; Golden Grey Miss, three year old, with 469.19 pounds fat from 6,981.1 pounds milk; Lottie of Willowwood, two year old, with 413.9 pounds fat from 8,382.5 pounds milk; and Fawn of Willowwood with 417.8 pounds fat from 8,620.4 pounds milk; and Fauver of Willowwood, with 388.33 pounds fat from 7,993.5 pounds milk as a senior yearling.

The owner is closing out practically all of his cows, retaining nothing but the young things sired by Lady's Shylock's Financier, which he intends to develop and break world's records with.

CATTLEMEN'S MEETINGS

A meeting of Zone V will be held in Lecture Hall, Agricultural Building, Los Angeles Fair Grounds, on Thursday, October 7 at 10:30 a. m., and it is hoped there will be a large attendance of visiting cattlemen from Zone V.

Meetings of the county associations will be held during the next two months at which delegates to the zone conventions on November 20 will be elected.

Effort is being directed toward the holding of an enthusiastic and largely attended annual meeting at the Palace Hotel, San Francisco, on Saturday, December 11, and this will consist of an all day session of some splendid addresses culminating in a banquet in the evening. It is hoped that at least 500 cattlemen will attend and the meeting promises to be one of the best yet held under the auspices of the California Cattlemen's Association.

NATIONAL BOARD OF FARM ORGANIZATIONS

The National Board of Farm Organizations, with headquarters in Washington, D. C., held its semi-annual conference in Columbus, Ohio, September 1-3. Chairman C. S. Barrett presided, and addresses were made by John McSparran, master of Pennsylvania State Grange, Dr. Taylor of the bureau of farm management, former Secretary Flannagan of the federal farm loan board and C. W. Holman of the National Temple of Agriculture. Mr. Flannagan is working for a national union of farm loan associations. Twenty states have responded and will work in accordance with his plan.

ECONOMY STOCK POWDER**Conditioner, Worm Expeller, Disease Preventive****For Hogs, Cattle, Horses and Sheep**

Economy Stock Powder is not a stock food, but a purely medicated compound. It will keep your stock free from worms and build up the constitution. It will pay you in more pounds of fat out of grain fed. It's like writing insurance on your herd against disease, as it purifies the blood, sweetens the stomach, expels and destroys all germs, worms and parasites, and it keeps your stock in a healthy condition.

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Will absolutely rid your stock of parasites, lice, mange, scurf and improve the coat of hair. Guaranteed to prove satisfactory.

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COMBINATION**Pre-Breeding Season Sale Poland Chinas**

Sale to be held on Wednesday, October 27th, at LOOKINGBILL & VELZY'S UNION STOCK AND SALES YARDS, POMONA.

40 head of useful breeding stock from the well known herds of E. Avery Newton, Lankershim, and H. Christiansen, Arlington, will be catalogued for this occasion, and papers for every animal sold.

This sale is to be known distinctly as "a pre-breeding season sale." With three or four exceptions these sows and gilts are purposely sold open, that new owners may mate them in November to their own boars for March litters.

First Prize and Grand Champion Blood

Three crack herd boars, also a few young boars of early spring farrow, to be found in these offerings.

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Size and quality predominate in our big type Poland Chinas. No better big type sows are found in the state. Buy Berma Poland Chinas and you buy wisely.

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Home of King's Big Ben, where he is siring those early developing big type Poland Chinas that are ready for the market at 6 mo. They have size, bone, quality and are from the easy feeding families.

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You Want Both Size and Quality

An extra cent or two per pound on account of quality and an extra 50, 100, or 200 lbs., weight on your steers makes your profit. It is the Shorthorn steer that shows both weight and quality and makes the profits for the owner.

Use a Shorthorn Bull.

American Shorthorn Breeders' Association,

13 Dexter Park Ave.

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At the bottom of your letter to advertisers just say "California Cultivator" and prompt reply is assured.

SIX DAUGHTERS OF KING PONTIAC NETHERLAND SEGIS 3D



MINITA SEGIS PONTIAC, 29.91 lbs. butter in 7 days at 3 yrs. 6 mos. Her dam a 17 lb. 2 year old daughter of King Pontiac Netherland Segis.



MAMIE PONTIAC, 25.36 lbs. butter in 7 days, 99.44 lbs. in 30 days at 3 yrs. 2 days. Her dam a 17 lb. 3 year old daughter of Homestead Barnum Paul De Kol.



CORA JARIE PONTIAC, 22.04 lbs. butter in 7 day at 3 yrs. 5 days. Her dam a 23 lb. cow.



DOUWE PONTIAC, 18.22 lbs. butter in 7 days, 72.62 lbs. in 30 days, at 2 yrs. 2 mos. Her dam a 21 lb. 4 year old daughter of Jetske of Oakwood Romeanna.



QUEEN PONTIAC MAGGIE, 19.08 lbs. butter in 7 days at 3 yrs. 5 days. Her dam a 23.85 lb. daughter of Woodcrest Hengerveld De Kol.



MISS SEGIS PONTIAC WALKER, due for first calving about sale day. Her dam is a 27.89 lb. senior 3 year old daughter of Prince Gelsche Walker Korndyke, second dam the great 28 lb. cow Locust Terrace Gold Drop.

MAMMOTH DISPERSAL

Rosamaines Rancho

OCTOBER 19



KING PONTIAC NETHERLAND SEGIS 3D 155988

27 A. R. O. daughters with records to 29.91 lbs. butter in 7 days for a senior 3 year old. Sire: KING PONTIAC NETHERLAND SEGIS, a son of King of the Pontiacs and a daughter of King Segis Pontiac. He has two daughters above 31 lbs. butter in 7 days. Dam: GERBEN ABBEKERK MAID (shown at bottom of this page.) She has three records above 30 lbs. butter in 7 days, two of them above 34 lbs., is the dam of nine living sons and daughters, is now only nine years old and sells safe in calf. Here is one of the greatest young proven sires in the west.



PART OF THE BARN AT ROSAMAINES RANCHO

The decision to sell this Rancho at public auction, and the managing owner, Mr. A. J. Stalder, offers for public appraisal and will invite the investment of the man or combination of men with the start.

Tuesday, October 19

at 9 A.M. sharp, we will open the dispersal with the sale of ROSAMAINES RANCHO

LOCATION—Rosamaines Rancho is located in Riverside County, California, 45 miles east of Los Angeles, 12 miles west of Riverside, 3 miles south of Wineville. The main boulevard from Los Angeles to Riverside passes through Wineville, as does also the Salt Lake Railroad.

ACREAGE—The Rancho will be sold in two parcels, one of 235 acres, the other of 397½ acres adjoining on the north.

THE 235 ACRE PARCEL—The Rancho buildings go with this parcel, and it constitutes a livestock breeding equipment that is equalled by a very few in the west.

The improvements alone cost over \$200 per acre at normal costs, and could not be duplicated at near that price today. The buildings and equipment are essentially practical, there has been no investment for show purposes, and by all who know the rancho it is regarded as one of the most efficiently laid out in California.

100 acres of the Rancho are bottom land pasture, with an abundance of shade and water. This is positively one of the greatest, if not the greatest, pastures in all of California. It has carried as many as 150 head of cattle from the thin feeder stage to a prime quality of grass beef, and is a dependable, all-the-year-round grazing ground. If put under cultivation this soil would produce successfully practically any crop now grown in the state.

The balance of the Rancho contains 60 acres of splendid alfalfa and 40 acres now in corn for the three silos. A wonderful production of alfalfa of fine quality and a tremendous growth of corn afford each year sufficient feed to carry a number of cattle rarely carried on equal acreage.

There are two pumping plants equipped with motors, with an unfailing supply of water sufficient to thoroughly irrigate the cultivated area.

The buildings consist of a concrete floored, steel equipped milking barn, a large barn for test and show cattle with commodious space for hay and feed storage, a big horse barn with hay loft, a thoroughly practical system of covered shelter and feed sheds with fenced paddocks leading down to the pasture, milk house, office building, and two cottages.

All buildings are electric lighted, and both houses and barns are sewerd.

This Rancho is equally desirable for beef cattle or dairy cattle breeding, and is one of the greatest opportunities offered in years for the purchase of a thoroughly practical, productive, well located, well watered, livestock farm that has made money for its owners, is now making money, and is in better shape today to make still more profit for its new owners.

TERMS—Exceedingly liberal terms will be given the buyer of this parcel, one-third cash, balance in six equal annual payments, with interest at seven (7) per cent payable semi-annually, two (2) per cent discount for cash on deferred payments.

THE 397½ ACRE PARCEL—This lies directly north and adjoining the 235 acres above described. Every acre of this land is in crop regularly, and is all first class vineyard land and suitable for orchards or alfalfa and has an abundance of cheap water. This is a first class investment proposition.

TERMS—Very liberal terms will also be given the buyer or buyers of this parcel, one-half cash, the balance in four equal annual payments, with interest at seven (7) per cent payable semi-annually, two (2) per cent discount for cash on deferred payments.

OIL PROSPECTS OF THIS RANCHO—Oil production is today, and promises to remain, one of the world's great problems. Oil yielding lands have therefore become enormously valuable, and the surface of the earth is being searched for oil producing fields. This Rancho is in the oil producing area of Southern California, all of the lands to the west and north adjoining having already been leased, and wells are actually drilling within two miles. The present owners have been offered oil leases either on a cash or royalty basis, and seriously considered making the leases prior to sale of the Rancho. A decision was finally reached, however, to let the property go into the hands of new owners absolutely unencumbered, affording them an opportunity to make such leases or not as they see fit.

ROSAMAINES RANCHO will positively be sold to the highest bidder, and it is a property worthy the best consideration and the fullest investigation of either one man or a company. The very liberal terms make it an especially good buy, and it is the sort of investment for which the pioneer work has been completed and the plant today is in the best condition to make profit in its history.

YOUR PARTICULAR ATTENTION is invited to the quality and numbers of breeding animals now being carried on the Rancho, all of which will be sold following the sale of the real estate. Practically all of these animals have been raised on the Rancho, on home grown feeds, and you will note the splendid size, quality, and condition apparent throughout, all of which are prime factors in successful breeding.

Immediately following the sale of the Rancho, the same day, we will sell

90 BIG RED GRADE SHORTHORN COWS

18 REGISTERED PERCHERON MARES AND STALLIONS

50 REGISTERED DUROC-JERSEY HOGS

1800 WHITE LEGHORN HENS AND PULLETS

A SMALL HERD OF GRADE DAIRY HEIFERS

ALL THE IMPLEMENTS AND EQUIPMENT

including a nearly new 12 foot McCormick combine harvester; a No. 50 Typhoon ensilage cutter; 8 farm wagons; discs, plows, rakes, mowing machines, harness; a complete acetylene lighting plant; and many other items.

Wednesday and Thursday, October 20-21

We will sell at Public Auction

150 Registered Holsteins

This is in many respects one of the most remarkable herds of registered Holsteins ever dispersed. It represents today the accomplishment of a man who started out with very definite ideas of what a profitable breeding herd should be, and few men have ever followed more closely their original plan.

The details of excellence of the various individuals in the sale are too extensive to be fully set forth in this limited space and can be appreciated only with the animal and the catalog pedigree before you, but to give a comprehensive outline of the offering it may be summarized in groups as follows:

PERSAL SALE

Riverside, Cal.

Owned By
& F. W. STALDER

20-21, 1920



SIR ORMSBY SKYLARK RAUWERD 273665

Sire: SIR ORMSBY SKYLARK, famous as the sire of Duchess Skylark Ormsby, the only cow that ever produced over 1500 lbs. butter in one year. Dam: BEAUTY RAUWERD HENGERVERELD 2ND, 34.51 lbs. butter in 7 days, she by a half brother of King Segis and out of a 29 lb. daughter of Pietertje Hengerveld's Count De Kol. Here is a young sire that combines some of the very greatest producing lines of the breed. He is a show bull, and although only 20 months old at time of sale there will be more than 50 cows and helpers in calf to him.

SIX 2 YEAR OLD DAUGHTERS OF
SIR SKYLARK ORMSBY
HENGERVERELD



ALICE ORMSBY CREAMELLE HENGERVERELD, 22.59 lbs. butter in 7 days, 90-21 lbs. in 30 days, at 2 yrs. 5 mos.



SKYLARK BUBBLE, 16.02 lbs. butter in 7 days, 62.46 lbs. in 30 days, at 2 yrs. 6 mos.

(Inset) THE BOTTOM LAND PASTURE.

its splendid herds of livestock, due to the ill health of the the very greatest breeding plants in the west, one that may at a going ranch that is equipped to pay dividends right from

ONLY NINE ANIMALS OVER SIX YEARS OLD

In the entire herd there are only nine animals that are six years old or over, these including some of the greatest individuals, and there are ONLY TWELVE ANIMALS OVER 4 YEARS OLD.

BOTH HERD BULLS WILL BE SOLD

The senior herd sire, KING PONTIAC NETHERLAND SEGIS 3D, with 27 A. R. O. daughters, and an approximately 60 living daughters, is without question one of the foremost young sires of the breed. His get have real dairy quality, his daughters have made splendid short time records and a number are making noteworthy long time records at now. He is worth a fortune at the head of a herd of good females.

The junior herd sire, SIR ORMSBY SKYLARK RAUWERD, is by the same sire as Duchess Skylark Ormsby, 1506 lbs. butter in one year, the present world's record, and she is the only cow of any breed to ever made 1500 lbs. butter in one year. His sire, a cow of wonderful breeding and great production (described under his picture above), was well mated with Sir Ormsby Skylark. He is only 20 months old at time of sale, yet at least fifty cows and helpers will be in calf to him at that time, and is in the pink of condition, and an individual of a new type.

GERBEN ABBEKERK MAID AND FIVE DAUGHTERS

GERBEN ABBEKERK MAID, the famous three year 30 pound cow, twice over 34 lbs., will be in sale, also five of her daughters. This grand cow, one of the foremost dams of the breed, is only nine years old, has nine living calves, and sells safe in every way.

15 DESCENDANTS OF GERBEN ABBEKERK MAID

We doubt if any sale catalog ever issued before has contained a cow and 105 of her descendants. It affords a wonderful selection of unique breeding and type to the founder of a new herd, the productive power of this family has been demonstrated fully.

SEVEN HALF SISTERS TO GERBEN ABBEKERK MAID

The sire of Gerben Abbekerk Maid, SIR SKYLARK ORMSBY HENGERVERELD, was doomed to obituary in a grade herd during the most vigorous years of his life, and it was only when his few half-bred daughters began to produce that his real worth became apparent. As a consequence he was mated to purebred females exclusively during the last years of his life, and there are in this herd seven of his 2 year old daughters, a splendid group of animals, and one that would make a real foundation for a new herd.

ER 50 FEMALES WITH OFFICIAL RECORDS

While the herd is essentially one of young animals, yet more than fifty of the females have official records ranging up to over 34 lbs. butter in 7 days, a large number are now on yearly test and making splendid records.

DAUGHTERS OF KING PONTIAC NETHERLAND SEGIS 3D

There is a group of young females worthy of the careful investigation of the man looking for foundation stock or the breeder who wants to add strength to his breeding herd. Many of them have excellent official records, up to 29.91 lbs. butter in 7

days for a senior 3 year old, and most of them are out of dams with good records and breeding.

28 DAUGHTERS OF ROSAMAINES PONTIAC NETHERLAND

This sire is by KING PONTIAC NETHERLAND SEGIS 3D, out of STANISLAUS PRINCESS CLEOPATRA, who made 31.04 lbs. butter in 7 days as a senior 3 year old, and 32.07 lbs. butter in 7 days as a senior 4 year old. This is another noteworthy group of heifers, in fine condition and high class in every way.

5 DAUGHTERS OF PRINCE ARLIA WALKER

This sire is by the famous PRINCE GELSCHE WALKER, and out of ARLIA DE KOL 3D, who made over 1100 lbs. butter in one year, and her dam the first cow to make over 28,000 lbs. milk in one year, and a record of 1142.32 lbs. butter in one year. Sisters to these heifers have made up to over 27 lbs. butter in 7 days for a 3 year old, and these also are most desirable as breeding females.

30 FEMALES BRED TO KING PONTIAC NETHERLAND SEGIS 3D

Approximately thirty of the females in the sale are in calf to the senior herd sire, and the breeder who is fortunate enough to own daughters of this sire is bound to have some of the most desirable breeding females in the state, heifers that will grow more valuable as their sisters further increase the splendid records they have already made.

50 FEMALES BRED TO SIR ORMSBY SKYLARK RAUWERD

Here is a combination that should find favor with every man looking for high class Holsteins. Consider that most of this group are daughters of KING PONTIAC NETHERLAND SEGIS 3D and ROSAMAINES PONTIAC NETHERLAND, and as this young bull will without doubt go to head some high class herd, his offspring will be correspondingly valuable.

THIS IS AN ORMSBY OFFERING

This herd represents the largest offering of ORMSBY breeding yet made in the west. Remember that the sire of Gerben Abbekerk Maid, the foundation head of this herd, was by the same sire as Pietertje Maid Ormsby, who was the dam of SIR PIETERTJE ORMSBY MERCEDES, the world's greatest sire of dairy producers and show ring winners, and whose blood commands some of the very highest prices in the best sales.

THIS IS A HEALTHY HERD

As stated before, regular breeding has been a prime requirement in this herd, and the tuberculin test reveals that this is one of the cleanest herds in that respect. Every animal is positively guaranteed to be a breeder; every animal over six months old is tuberculin tested and sold subject to retest by the buyer, except as announced at time of sale.

CATALOGS OF SALE GLADLY MAILED ON REQUEST

Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, California.

Auctioneers: Rhoades and Rhoades, Los Angeles

NOTE.—Headquarters of sale will be at Hotel Reynolds, Riverside, from which place transportation to sale will be furnished to parties coming in by train.



COUNTLESS SKYLARK ORMSBY, 15.58 lbs. butter in 7 days, 61.81 lbs. in 30 days, at 2 yrs. 5 mos.



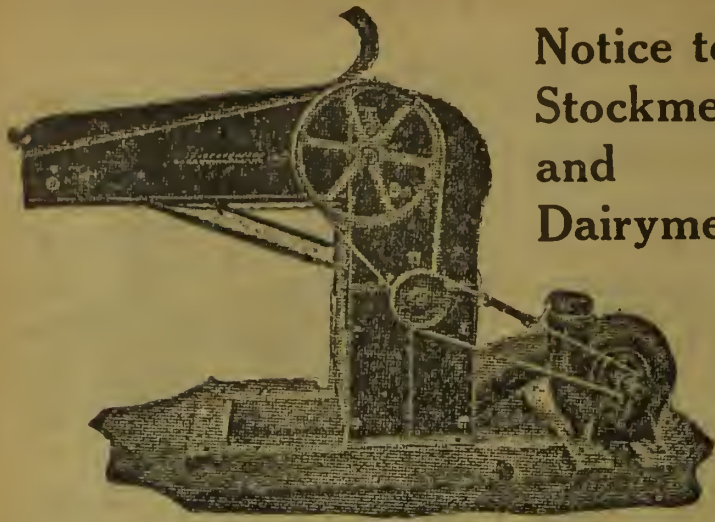
STANISLAUS BELLE HENGERVERELD, due to calve about sale day. She is out of the same dam as Belle Faskie Hengerveld De Kol 2nd, Grand Champion cow at California State Fair, 1918, and dam of the famous 2 year old Belle Faskie De Kol Witkop, the leading money winner last year in the Holstein-Friesian Association of America Prize List.



ROSAMAINES SEGIS ORMSBY, will be fresh before sale.



STANISLAUS SKYLARK INKA DE KOL, due to calve shortly after sale.



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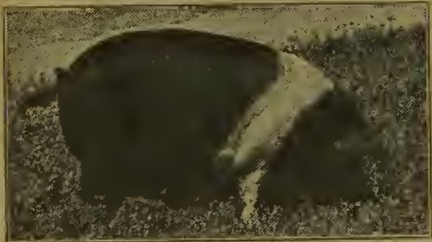
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The Grand Champion Boar HARVEY'S CHOICE 53147 at head of our great herd of brood sows.

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Grand Champion at Liberty Fair
SIOUX QUEEN
Grand Champion at P.P.I.E.

18 High Class Brood Sows in herd—young stock for sale.

A. E. Harvey, Manager

Redlands, Cal.

Livestock Insurance

The fall fair and exhibition season is at hand. THE HARTFORD LIVESTOCK INSURANCE COMPANY will insure your show stock (horses, mules, jacks, cattle, registered milch goats, and registered swine) against death from any cause, while at home or on the road, including the hazards of transportation. Policies broad and liberal; rates reasonable—yet adequate to insure prompt settlement of claims. Before shipping see the Hartford Agent in your town or address

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When Writing Advertisers Mention California Cultivator

The Tulare County Fair



THE Tulare County fair, held at Tulare, September 14-18, was strictly an agricultural and livestock show and in the size and quality of exhibits ranks among the better shows of the state.

The show this year was larger and better than any previous year. Not only from the standpoint of attendance is this true, but also considering the character of the exhibits. In the livestock department every stall and pen was full and several herds had to be turned away, as there was not sufficient room on the grounds to care for them.

The majority of the animals shown had come from the state fair and were en route to the Los Angeles livestock show.

Not only were the exhibits of state fair caliber, but most of those shown were among the heavy winners at the state fair.

In a number of classes the animals shown included the individuals that won every ribbon in their class at Sacramento.

The board of managers is to be commended on its efforts toward improving the livestock standard in Tulare County.

The agricultural and fruit exhibits were of a high order and attracted a great deal of attention from all present.

CATTLE

The showing of dairy cattle, as one would expect in such a dairy county as Tulare, was especially creditable. Holsteins led in numbers, closely followed by Jerseys and Ayrshires.

Judge John L. Smith of Seattle, Washington, placed the awards in a very satisfactory manner.

The Holsteins

The Santa Anita herd, owned by Mrs. Anita M. Baldwin, Santa Anita, was the heaviest winner, followed by those of W. J. Higdon, R. F. Guerin of Tulare, and others. Most of the leading winners at Sacramento were in the lineup and made the show an exceedingly strong one.

Aged bull — 1, Santa Anita Rancho, Santa Anita. 2, Tony Corria, Tulare. 3, Santa Maria Farm, Tulare.

Senior yearling—1, W. J. Higdon, Tulare. 2, T. J. Gist & Sons, Tulare.

Junior yearling—1, Santa Anita Rancho. 2, Allison & Storm, Tulare.

Senior bull calf—1, H. G. Ball, Tulare. 2 and 3, Santa Anita Rancho.

Junior bull calf—1, H. G. Ball. 2, W. J. Higdon. 3, Alex. Whaley, Tulare.

Aged cow — 1 and 3, Santa Anita Rancho. 2, R. F. Guerin.

Two year old—1 and 2, Santa Anita Rancho. 3, Corria.

Senior yearling heifer—1 and 2, Santa Anita Rancho. 3, Gist & Sons.

Junior yearling heifer—1, 2 and 3, Santa Anita Rancho.

Senior heifer calf—1 and 2, W. J. Higdon. 3, Santa Anita Rancho.

Junior heifer calf—1 and 2, W. J. Higdon. 3, Santa Anita Rancho.

Aged herd—1, W. J. Higdon. 2, Santa Anita Rancho. 3, Alex. Whaley.

Young herd—1, W. J. Higdon. 2, Santa Anita Rancho. 3, Alex. Whaley.

Get of sire—1, W. J. Higdon. 2, Santa Anita Rancho. 3, Alex. Whaley.

Produce of dam—1, W. J. Higdon. 2, Santa Anita Rancho. 3, Corria.

Junior champion bull—W. J. Higdon on Prince Bonnie Walker.

Senior and grand champion bull—Santa Anita Rancho on Merci Lad Korndyke.

Junior champion female—Santa Anita Rancho.

Senior and grand champion female—Santa Anita Rancho.

Milking Shorthorns

Chas L. Weaver, Tulare, was the only exhibitor in this class and was awarded all ribbons.

Ayrshires

E. B. McFarland, San Mateo, had all classes filled in the Ayrshire division.

Jerseys

A. A. Jenkins and W. H. Beekey, Tulare, had the Jersey classes filled, most of the ribbons being won by Jenkins.

BEEF CATTLE

The Herefords owned by Romie C. Jacks of Monterey and shown at Sacramento last week, took practically all awards in the beef cattle classes.

SWINE

The hog exhibit was one of the outstanding features of the fair. With very few exceptions, every hog on the grounds had been among those shown at the state fair and most of them were from the heavy winning herds.

All awards were placed by V. F. Dolcini, Davis, in a very efficient manner.

The Durocs led in point of numbers, closely followed by Poland Chinas, with lighter shows of Berkshires, Hampshires and a few Tamworths.

The awards follow:

Duroc Jerseys

Aged boar—1, F. B. Ellis, Lindsay. 2, C. C. Ellis, Exeter. 3, Allen Thompson, Tulare.

Senior yearling boar — 1, Falfadale Farm, Perris. 2, J. P. Walker, Visalia.

Junior yearling boar—1, D. G. Cummins & Son, Visalia. 2, W. J. Fulgham & Sons, Visalia. 3, C. C. Ellis.

Senior boar pig—1 and 3, Fulgham & Sons. 2, Falfadale Farm.

Junior boar pig—1, J. P. Walker. 2 and 3, Falfadale Farm.

Senior yearling sow—1, J. P. Walker. 2, Cummins & Son. 3, Allen Thompson.

Junior yearling sow—1, Falfadale Farm. 2, Allen Thompson. 3, Jos. Chenowith, Visalia.

Senior sow pig—1, Falfadale Farm. 2 and 3, Cummins & Son.

Junior sow pig—1, Sargent Bros., Tulare. 2, J. P. Walker. 3, Falfadale Farm.

Get of sire—1, J. P. Walker. 2, Falfadale Farm. 3, Sargent Bros.

Produce of sow—1, Falfadale Farm. 2, Sargent Bros. 3, F. B. Ellis.

Aged herd — 1, Falfadale Farm. 2, Allen Thompson.

Young herd—1, Falfadale Farm. 2, Sargent Bros. 3, D. G. Cummins & Son.

Junior champion boar—J. P. Walker.

Senior and grand champion boar—Falfadale Farm.

Junior champion sow—Falfadale Farm.

Senior and grand champion sow—J. P. Walker.

Duroc-Jersey Futurity

Junior boar pigs—1 and 2, J. P. Walker. 3 and 4, F. B. Ellis. 5, J. E. Martin.

Junior sow pigs—1, J. P. Walker. 2 and 3, F. B. Ellis. 4 and 5, J. E. Martin.

Junior litters—1, F. B. Ellis. 2, J. E. Martin. 3, F. B. Ellis. 4, Cummins & Son. 5, C. C. Ellis.

Poland Chinas

Aged boar—1, Shinn & Elliott, Tulare.

Senior yearling—1, R. F. Guerin & Son, Tulare. 2, Roy Saunders, Tulare.

Junior yearling—1, W. E. Martin, Tulare. 2, Kern County Union High School.

Senior boar pig—1, A. J. Elliott, Tulare. 2 and 3, H. G. Ball, Tulare.

Junior boar pig—1 and 2, A. J. Elliott. 3, Bassett Bros., Hanford.

Aged sow—1 and 2, H. C. Shinn, Tulare. 3, A. J. Elliott.

Senior yearling—1, A. J. Elliott. 2, H. G. Ball.

Junior yearling—1, A. J. Elliott. 2 and 3, H. C. Shinn.

Senior sow pig—1, H. C. Shinn. 2, Bassett Bros. 3, A. J. Elliott.

Junior sow pig—1 and 2, A. J. Elliott. 3, Bassett Bros.

Aged herd—1, A. J. Elliott.

Young herd—1 and 2, A. J. Elliott. 3, H. C. Shinn.

Get of sire—1, H. C. Shinn. 2, A. J. Elliott. 3, Bassett Bros.

Produce of dam—1, H. C. Shinn. 2, A. J. Elliott. 3, Bassett Bros.

Junior champion boar—A. J. Elliott.

Senior and grand champion boar—Shinn & Elliott.

Junior champion sow—H. C. Shinn.

Senior and grand champion sow—H. C. Shinn.

Poland China Futurity

Junior litters—1, A. J. Elliott. 2, Hugh C. Shinn. 3, Bassett Bros. 4, John Hahesy, Jr. 5, Merle Soultz, Tulare. 6, Chas. Weaver, Tulare. 7, Paul Sheppa, Tulare.

Berkshires

All Berkshire awards to D. J. Bastanchury, La Habra.

Hampshires

Earl Sandusky, Los Angeles, had the only Hampshires on the grounds.

SHEEP

While the exhibit of sheep was small, the class of those shown was of high order. The Corriedale Sheep Co., Hollister, had exhibits of Corriedales, Leicesters, Southdowns and Shropshires. All awards were won by the above named firm.

One of the features of the Los Angeles Livestock Show will be the model dairy of the Joy-Reams Co. This will be in charge of L. A. Taylor. All of the milk taken at the fair will be skimmed with the Sharples cream separator, as a free service to dairymen at the show and to demonstrate the electrically driven Sharples suction feed separators which, because of the centrifugal action of suction, skim the milk clean at any speed.

Among the James J. Jeffries entries at the Los Angeles Livestock Show may be seen fine strings of sons and daughters of the great show bull King Segis Pontiac Jannek.

Morris C. Allen, manager of Winsor Ranch, Bonita, is exhibiting 20 Durocs at the Los Angeles Livestock Show, with Winsor's Giant Orion at head.

Sir Veeman Korndyke Pontiac, sire at Burr Farm, Los Angeles, now has 13 A. R. O. daughters to his credit.

Live Stock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
October 19-21, A. J. Stalder, Riverside.
Herefords
November 4, Pacific Coast Hereford Breeders' Association, Sacramento.
November 5, J. H. Cazler & Sons, Sacramento.
November 6, H. M. Barngrover, Sacramento.
November 18, Fimmel Ranch Company, Sacramento.
Shorthorns
September 30, Wilotta Ranch, Suisun.
Poland Chinas
September 27, Hugh C. Shinn, A. J. Elliott and Alex D. McCarty, Tulare.
October 6, Kings Co. Poland China Breeders Assoc., Hanford.
Berkshires
October 7, Southwestern Berkshire Congress, Exposition Park, Los Angeles.
Duroc-Jerseys
October 27, E. Avery Newton, Lankershim.
General Livestock
September 15-18, Chas. L. Schufeldt, Mgr., Owensmouth.

Hewitt Bros, Van Nuys, are demonstrating the value of persistency in breeding to type. At the Owensmouth fair they showed nine Durocs, capturing 13 ribbons, the majority being firsts and champions. Top Sensation 1st won the highest honors of the show, where Durocs predominated in numbers. The Hewitt herd is known as the pioneer herd of San Fernando Valley. It is founded in big type

COMING EVENTS

Slaklyou County Fair, Yreka, October 5-9, Secretary Claude R. Gillis.
Orange County Fair, Huntington Beach, October 7-9, Secretary, J. K. McDonald.
Southern California Fair, Riverside, October 13-19, Secretary W. W. Van Pelt.
Northern Arizona Fair, Prescott, October 14-16.
Kern County Cotton Festival, Bakersfield, October 16.
Mendocino Apple Show, Ukiah, October 27-30.
Western Royal Livestock Show, Spokane, Washington, November 1-5, Secretary Bert L. Hilborn.
Arizona State Fair, Phoenix, November 8-13, Secretary Shirley Christy.
Pacific International Livestock Show, Portland, Oregon, November 15-19.

blood, but with easy feeding quality as the prime consideration.

A. V. Austin, Van Nuys, is specializing in high class Durocs. At Owensmouth he showed the fine brood sow Aneeda Model Queen, winning second in strong class. She has raised ten fine pigs got by California Orion Cherry King, and is now bred for early October farrow to Top Sensation 1st.

It is no secret that pork prices are "looking up" somewhat the last few weeks. In the light of this fact the Berkshire interests of the south end of the state are taking the opportunity to bring before the buying public on Thursday, October 7, a nice clean cut offering of registered bred sows and gilts. The sale will be made at Exposition Park, following the judging in the swine section. Thirty-five head will be catalogued, and it will be good herd building material, start to finish. Twenty-five bred sows, ten open gilts.

As manager of the swine department of the Ed R. Maier Berkshire breeding ranch at Santa Susana, J. E. McIntosh brought a string of prize winning young hogs to the Owensmouth show. Escalon May Star was made grand champion of the show, while Escalon Type 2d won first as senior yearling. The Maier herd is one to be reckoned with in future shows.

On October 27 at the Lookingbill yards in Pomona, 50 head of registered Poland Chinas will be auctioned. They are consigned by Newton & Christiansen. The Christiansen herd in 1916 won seven firsts, one grand champion and two champions; in 1919, three firsts, four seconds, one grand champion and one champion. The Newton herd was in the money at Owensmouth this year.

All the Cream At All Speeds

Every member of the family turns the separator handle at a different rate. And, no one turns always at the exact speed stamped upon the crank,—it simply can't be done.

Your present separator, unless a suction-feed, has a constant inflow of milk. Whenever the speed falls, a lot of cream slips away through the milk-spout and is lost forever. Experts estimate that most farmers lose from 7 to 13 lbs. of butter yearly from each cow because they turn their separators below speed. You are, no doubt, one of the losers and very likely a heavy loser. But you can stop this loss right now by using



Only three pieces to wash. Not one of them fussy.

THE NEW SHARPLES SUCTION-FEED

Separator. This wonderful machine automatically regulates the inflow of milk in exact proportion to the skimming force. It gets all the cream at all speeds.

Father can "speed up" the crank to 55 revolutions a minute and finish the chore quickly. Mother or the girls can turn at a leisurely rate. Fast or slow, the Suction-feed Separator skims absolutely clean and delivers cream of uniform density—not thick today and thin tomorrow. It's the only separator having these valuable features.

The slender Tubular bowl gives double skimming force. It's the only bowl containing no discs or blades. There's just one piece in it—a single small cone, as simple and easy to clean as a napkin ring.

The New Sharples is ruggedly built for hard service. It is neat, compact, runs easily and oils itself.

There are many other exclusive and important features to be found in the New Sharples Suction-feed Separator. Come in and let us show you. Bring the women folks, too. We'll be glad to see you all.

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A woman can easily fill the low supply can.

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E.F. Petersen - V.P. & Gen. Mgr.

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PHONE - 8F2

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Imp. Caledonia

Caledonia Shorthorns constitute one of the choicest collections of the breed owned in America. Our herd bulls, Imp. Caledonia, Gainford Matchless, grand champion at the 1919 San Francisco show and Pine Grove King stand out prominently in the West. Our females represent choice Scotch and American families, and are noted for their type and quality. We can at all times furnish foundation material and bulls suitable for any herd or for the range. Our prices are moderate and every animal is guaranteed. Visit our farm and herd. Send for special bull list.

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Shorthorns
Redwood City, Cal.
HERD SIRES

Boquhan Guinea Stamp, the great Imported Young Broadhook bull. Golden Goods Jr, sire of LITTLE SWEETHEART, Grand Champion International Show, Chicago, 1919.

Bulls and heifers for sale.
Duroc-Jersey hogs for sale.

James McDonnell, Supt.

California Cultivator

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MORE PORK IN LESS TIME

Duroc-Jersey hogs have a tendency to put on great amounts of pork at an early age. They are easy-feeding animals, and raise large families. These hogs were introduced less than 50 years ago, and yet in 1918, 51% of all the hogs marketed in the country were "Duroc-Jerseys." They are uniformly red in color. Increase your profits by raising Duroc-Jersey hogs.

Write for "DUROC-JERSEY HOGS ARE PROLIFIC AND PROFITABLE"—sent free to hog-raisers by the largest swine record association in the world. Over 12,000 members. The National Duroc-Jersey Record Association. Dept. 130 Peoria, Ill.

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The World's Record Boar
The Largest Jr. Yearling
in the World
The Best Type Boar of the Breed
Cost \$15000.00
A World's Record of Jr. Yearling

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VAN NUYS, CAL.

Hewitt Bros.' Quality Durocs

Our pioneer herd of registered Durocs in San Fernando Valley, in hot competition in all classes at San Fernando Valley Fair and Market, captured the following: 1st in class, senior champion, and grand champion on Top Sensation 1st; 1st prize senior boar pig; 1st and 2nd prize junior boar pigs; 3rd prize senior sow pig; 3rd prize junior sow pig; 1st prize senior pig herd; 1st prize boar and 3 sows bred by exhibitor; 1st prize 4 swine get of sire; 1st prize 4 any age produce of same dam.

We have high class young stock for sale—boars and gilts.

Ranch 1 mile east of Van Nuys. Address

Hewitt Bros.

Van Nuys, Cal.

Craig Ranch Durocs

See Our Breed Aristocrats at Home

We have here expert selection of brood sows and their litters direct from the world's most noted breeding and show herds. September litters by Pathfinder's Likeness and High Top Orion—both Iowa grand champions. Also new litter by Pathfinder—the most talked of senior boar in the world. Fine litters also by Pathfinder's Likeness, Jr., the young aristocrat at head of Craig Ranch herd. Have fine strings of junior and senior gilts coming on of gilt-edge blood lines and high individual merit.

Some crack young boars ready for service.

See our senior pig show herd at Los Angeles and Riverside shows.

J. C. Craig

Ranch at Owensmouth, Cal.

City Office, 321 W. 3rd St., Los Angeles

A-1 Duroc Ranch

Where one of the state's greatest herds of Duroc-Jerseys is maintained. For years our Durocs have proven profitable to farmer and breeder alike. Better place your order now for spring pigs as what we will be able to spare will go quickly. Remember, this is the home of the state's highest priced (\$1500) and most valuable Duroc-Jersey sow.

J. P. Walker, RFD 1, Box 40½, Visalia, Cal.

The Greatest Duroc Boar of His Age! Choice Wonder 3d

a winner at the 1919 Iowa State fair, sired by the great boar, Mahaska Wonder, and a litter mate to the first prize junior boar of Iowa, heads our herd. He is the largest, heaviest boned, best footed boar in the state and he is being mated to the sows that have made this herd famous for futurity winners. Get your order in early for his pigs. Prices are most moderate. Satisfaction guaranteed.

JUNE ACRES STOCK FARM

V. F. Dolcini, Davis, Cal.

Sows and Gilts---GET ONE

Bred to farrow next two months. We are making an extremely low price on these to reduce our herd. At the price we won't keep them long. Write today. Quick, before they are all gone.

H. P. Slocum, Willows, Cal.

FANNIE'S ORION KING

heads our select string of Duroc brood sows. At the recent Los Angeles County sales we personally selected two high class yearling sows (Pathfinder and Great Sensation blood direct), mated for September litters to the Winsor Ranch big-type boars. They find good company at our ranch.

C. C. ELLIS

EXETER, CAL.

THE LOS ANGELES LIVESTOCK SHOW

(Continued from page 427)

Regardless of the particular line of primary production in which we happen to be engaged, our own individual prosperity bears an intimate relation to the livestock industry. We are beginning to appreciate the fact that though blessed with most favorable conditions of production we cannot continue lavishly spending our soil resources without sooner or later reaching the point where a bountiful nature will call us for an accounting. We know, too, those of us who have given the matter thought, that the one sure way to conserve the productivity of our soil is through the maintenance of livestock.

Again, those of us who are primarily interested at present in handling livestock realize that changing conditions affecting production costs are such that some method must be found to widen the margin between those costs and the selling prices. It makes no difference whether we are running cattle or sheep on the ranges, maintaining dairy cattle or hogs on our more fertile valley lands, the situation is the same—our profits will depend upon the margin between production costs and selling prices. It is quite impossible to study our agricultural problems and escape an understanding of the real, bedrock importance of livestock production.

The Los Angeles Livestock Show was brought into existence three years ago by a group of big, broad gauge men who appreciated the actual importance of livestock in our general scheme of agriculture, who felt that one of the greatest services they could render the state was to assist in some plan to encourage a wider adaptation of livestock to Southern California agriculture, and who came to the decision that a livestock show would best serve to awaken a "livestock consciousness" among our people.

Livestock shows and fairs are two of the most potent factors in stimulating a better livestock industry. Through such fairs and shows the accumulated and final accomplishments of the breeding art can be placed before the general public in such a manner as to lend inspiration and encouragement to all. Such exhibitions provide an opportunity for all to gain a correct conception of modern breed standards, for it is through such shows that our standards are established. The man engaged in the handling of ordinary or scrub livestock can see wherein the modern pure bred's value rests. The breeders themselves can meet on the common ground of the judging arena and measure the quality of their productions with the productions of their fellow breeders.

The man about to enter the livestock business can use the show as a chart by which to order his contemplated operations. He can compare the merits of the different herds and flocks and become acquainted with the leading lights of the livestock world. Such acquaintance is most valuable for the reason that much knowledge of successful methods can be gained through personal and intimate contact.

The parents of boys and girls should not fail to take advantage of the opportunity such shows afford to impress on the children of today the economic importance and the dignity of animal husbandry, bearing in mind that the children of today are the producers of tomorrow and that early impressions are most apt to be lasting impressions.

The forthcoming show represents

the highest effort yet made to put before the people of Southern California a complete exposition of the livestock industry. The directors of the show have made their plans on an ambitious scale and without other thought than that the show will be accorded the hearty support of the community it seeks to serve. The show has not been planned or executed with the one idea of furnishing the breeders a place to display their works—that feature is but an incident—but rather as an institution where the entire agricultural fraternity can catch the inspiration that comes from association with improved livestock—and knowing full well that such inspiration is reflected in better homes, better ranches, better communities, better men and women—in short, a higher and more contented citizenship.

The stage is set. Your show is ready for you, and you are expected.

STOCK SHOW NOTES

The educational features of the Los Angeles Livestock Show have been the direct cause of interesting numerous people financially able to develop large stock raising projects and thereby add to the wealth of the Pacific Coast. The two preceding stock shows were a revelation to thousands of visitors from the East.

* * *

Premium lists offer \$7,500, with sweepstakes of \$100 and \$500 in the daily afternoon horse show. The performances will be viewed from a specially built grandstand seating 1,000 persons within the Exposition grounds.

* * *

In its staple uses mohair is putting the silk worm off the mulberry tree. Most of the "silk" you buy now is made from mohair. The finest plushes, cloak goods, and expensive "silk" rugs are also made from mohair. There is promise of an exhibit of Angoras at the fair.

* * *

The Los Angeles Livestock Show opens today with upward of 2,000 pure bred animals entered in competition, filling every stall and pen in the 25 commodious new buildings at the California state exposition grounds here. Thousands of livestock enthusiasts and spectators are on hand for the opening events. A record attendance is expected during the nine days. The gates will be open from 8 a. m. until 9 p. m., daily.

* * *

Besides the great livestock displays and parades there will be dairy exhibits showing the food value of milk and the benefits derived from cow testing staged by the California Dairy Council and the farm bureau.

* * *

The Exposition Park Kennel Club, Jack Bradshaw, manager, will hold its second annual championship dog show October 3 and 4. Five hundred foremost Western dogs are expected. More than 125 valuable cups and trophies are offered.

* * *

Manager E. I. Hammond of the poultry, rabbit and pigeon show announces that entries will be received October 4. Judging will begin Wednesday, October 5, and displays may remain in place until October 10, closing day. More than 200 exhibitors have already made entries.

* * *

On Saturday, October 10, closing day of the show, will be staged Southern California's Bathing Girl Revue, spectacular daily rodeo, racing and horse show events and grand march of prize winners.

Packers Pinching Pennies on Pork Prices

By R. P. Royce



ON the closing Saturday of the state fair an auction for the sale of fat hogs had been arranged by the Sacramento County farm bureau in conjunction with the California Farm Bureau Marketing Association. It was expected that the event would prove of high educational value to fair visitors and would result in improving the general quality of California pork. The sale was held on schedule. Over 350 head of hogs were offered and the event did prove of high edu-

cational value; however, it is doubtful if the sale will result in improving the quality of the hogs in the Sacramento Valley.

For a good many years the packing interests of this state claimed that the hogs reaching their killing floors were of poor grade, lacked finish, were soft and oily and low dressers, so that they could not handle them on a price basis comparable to cornbelt quotations. Therefore their "quotations" ruled from two to five cents under Eastern figures.

"Most assuredly," they blandly remarked, "we will be glad to pay a better price whenever the California rancher sends us hogs showing quality, uniformity and a hard finish. Further, the various agencies interested in improving the quality of California hogs will have our support, moral and otherwise, and we will set a premium on quality."

The producers took the packers at their word and there can be no doubt that during the last three or four years the average quality of our hogs has shown a very definite improvement. We are producing better hogs and feeding them out more acceptably.

Then came the auction method of selling. The auction plan was developed with the idea of securing a better price for hogs produced by the small operator through combining shipments and grading the various lots on a basis of quality. All admit that this system of marketing leaves much to be desired and that it is a trifle too cumbersome to be stable, but it is the best plan to meet present conditions. So far the packers have been disposed to tolerate the auction and have usually made an effort to have their buyers in attendance. On a good many occasions it has seemed that the packers went to considerable length to pay exceptionally strong prices, but so long as no one has ever accused the packers of philanthropy it can be assumed that they "got out all right" on their buying.

Now when the state fair sale was proposed, all the packers were notified. Surely, it was thought, they would be on hand at Sacramento, as it was known that many hogs entered in the show would be consigned to the sale. The sale would furnish them an opportunity to select hogs of the right quality—the sorts they had professed to want.

What happened? Out of the whole bunch who were notified only two or three buyers showed at the opening of the sale. It is known that others were on the grounds. The sale was opened. The hogs had been graded. Not all were prime hogs, but the tops were good. One carload consisted of purebreds of one breed, uniform, and inasmuch as they had been fed by one of the master feeders of this state and had been awarded a prize in the show, it can be inferred that they were finished—but they were not; they were "finished" later when a packer-buyer bought them 80 cents under a mixed lot that lacked the finish—and the excuse offered was to the effect that they were "too heavy." They averaged 248 pounds. Ye gods and little fishes! What a fine commentary on the pork packing business of California when our packers cannot handle to advantage one carload of 248 pound porkers of quality and finish! Of course there is a slight basis for favoring the lighter weights, but most of this talk about 250 pound hogs being "too heavy" is pure bunk that is used to replace the worn out arguments of a few years back.

But, be that as it may, the judgment of the buyers fell several points in the estimation of the crowd about the sale ring.

And furthermore, the packers of this state, following the old fashioned square headed policy of "getting while the getting is good," could not have picked a more unfavorable time to demonstrate their thick headedness. Instead of using the event at the state fair to encourage the production of a better sort of killing hog and thereby contributing something to the cause of better livestock, they went on record as being unwilling to "play the game" unless there was an immediate profit in sight and demonstrated that they care nothing as to whether or not our ranchers adopt better bred livestock.

Oh, well, times will change; they are changing now, but apparently our coast packers haven't seen the light.

DUROC JUNIOR CHAMPION

Regarding the published list of awards at the state fair, we have the following letter from W. T. Hollingshead & Sons:

"In looking over the report of the state fair awards I noticed that the junior champion Duroc-Jersey boar was not mentioned. The junior champion was the first prize junior boar pig, High Sensation, bred and shown by W. T. Hollingshead & Sons, Orland.



OLYMPIC

HOG FEED

Fortune Versus Foresight

A FORTUNATE turn of the market is only a secondary consideration when anticipating returns from your hogs. Profits are determined largely by the cost of raising the hogs.

OLYMPIC Hog Feed will build pork at the lowest cost per pound. It is a palatable ration and a productive one; not a mere jumble of proteins, but a scientifically blended ration.

OLYMPIC Hog Feed contains properly balanced proportions of Flour Middlings, Corn Feed Meal, Linseed Oil Meal, Soybean Meal, Ground Barley, Digester Tankage, Salt and DRIED BUTTERMILK.

The DRIED BUTTERMILK is a most important element in **OLYMPIC** Hog Feed. It supplies the important food values necessary to insure the very maximum digestion and assimilation of all other ingredients. It makes a better feed the *best* feed obtainable.



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Other **OLYMPIC** Livestock and Poultry Feeds include:

- HORSE FEED
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- SCRATCH FEED and Others

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Expert Livestock Auctioneers

Col. Ben A. Rhoades Harold B. Rhoades

Sales conducted in all parts of California
and adjoining States

We specialize in sales of

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We conduct sales of grade dairy cattle and general farm sales in all sections of California. Absolute satisfaction guaranteed. Forty years of successful sales in California and thousands of satisfied customers.

Write, phone or wire for dates and terms.

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FOR SALE---Young Hampshire Boars

Pure Bred Stock. Ready for November service. Every one a choice individual. Some recent prize winners. Prices reasonable. Write immediately.

Oak Knoll Ranch
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 R.F.D. Box 77 Woodlake, Cal.





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When in need of high class auctioneering service I would be glad to have breeders and farmers correspond with me. I have had years of experience, know values and know pedigrees. I am selling for many of the leading breeders of California and am prepared to deliver the same results that have attracted this custom. Terms reasonable. Write, wire or phone.

GEO. W. BELL Tulare, California

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Cow Cleaning,
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An Insect Destroyer
A Poultry Food

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President Vice President
Factory: Modesto, Cal.

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Shire Horses

More is required of horses than ever before hence the need of more size, weight and power. Large geldings never were higher. Shire geldings usually top the market. Use Shires to raise larger and better horses.

For information on Shires write,
 W. G. Lynch, Secretary American Shire Horse Association, Tonica, Illinois.

FOR SIZE
BONE and QUALITY

BREEDING DATE BOOK--FREE

We have issued a convenient little book for the keeping of breeding dates of cattle, hoping to aid the breeder and cattle owner in maintaining accurate records. We will gladly mail you a copy free if you request it. A postal will do.

**CALIFORNIA BREEDERS SALES
AND PEDIGREE CO.**
 C. L. Hughes, Sales Manager.

Sacramento Cal.

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The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

SECOND PUBLIC SALE

Caledonia Farms' SHORTHORNS

(AT THE FARMS)

West Sacramento, Cal.

Tuesday, October 26

60 Registered Shorthorns

50 FEMALES

There have been selected for this sale 50 extremely desirable females that are in every way up to the high standard of former offerings. As a whole they are characterized by their splendid type, scale, thickness and quality. They offer real proof of the beef making qualities of the Shorthorn as all have reached their maturity under most practical conditions. All are exceptionally well bred and include many of the most popular American and Scotch tribes. Fifteen of the cows sell with calves at foot and all will carry the service of the great trio of Caledonia bulls—

Imp. Caledonia Gainford Matchless
Pine Grove King
 (No western herd can boast of three such great sires)

20 HEIFERS

Included in the females offered are 20 very attractive heifers of our own breeding that will be well along in calf to the service of the above named bulls. No recent sale of Shorthorns has afforded breeders and beginners such an opportunity to add well bred young things to their herds. They will grow in value for years to come.

10 BULLS

The ten bulls are all young fellows—12 to 18 months old. Several of them are excellent prospects for herd bulls and the balance are very high class range bulls. At least half of them are Scotch. All are good colors and are strong, well developed, heavy boned youngsters. This sale is the bull opportunity of the year.

Watch this paper for further details—and remember that this sale will be the last Shorthorn sale to be held in this state this year.

EVERY ANIMAL IS GUARANTEED TO BE A BREEDER
 EVERY ANIMAL SELLS TUBERCULIN TESTED

Write for the catalog.

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif.
 Auctioneer—Col. Ben A. Rhoades, Los Angeles.

20 Shorthorn Range Bulls

Private Sale

Range operators who are in the market for bulls are invited to see the carload of Shorthorn bulls that I will have on exhibit at the

Los Angeles Livestock Show

Included in the lot are twenty head of well bred, growthy, heavy boned bulls that have been selected with particular regard to the demand from cattlemen who believe in the better kind of bulls. All are either reds or roans, 10 to 15 months old, and about half of the offering are of Scotch breeding.

I will be glad to meet any cattlemen interested and I feel certain that I can please in quality and price.

H. W. VAUGHN

2430 22d Street, Sacramento, Cal.

Allana Farms Holstein Dispersal

The entire herd of Holsteins owned by J. P. Phillips, with the exception of five head entered in the National Sale, Allana Farms, Dixon, was dispersed at the home place, September 23, and the feature of the auction was the sale of the herd bull, Sir Pietertje Korndyke Ormsby, for \$3,200. This bull, the first son of the noted Sir Pietertje Ormsby Mercedes to be sold in the West, was purchased by J. E. Dugan, who has been in charge of the Allana herd. It is understood that the bull is to be taken East, where Mr. Dugan will associate himself with one of the large herds located in the section where the breeding represented by his bull is held in high esteem. There were several California buyers who were interested in the bull and S. O. Walker of Visalia and a representative of the McCloud River Lumber Co., McCloud, were the runners up.

While the general average of \$310 was considered a conservative valuation, it was likewise thought to represent fair values in view of the fact that few of the cattle had attractive records and a large proportion of the sale consisted of young things.

R. L. Holmes of Modesto was the most extensive buyer and maintained his reputation for critical buying. He secured the top female, Aaggie Niko Alka, with a three year old record of 21.18 pounds butter in seven days. A particularly good buy made by Holmes was the securing of the four granddaughters of Duchess Skylark Ormsby.

G. M. Brown of Burr Farm, Los Angeles, was a strong supporter of

Full account of Kings County fair at Hanford, written by J. P. Bennett, will appear in next issue.

the sale and selected six of the more desirable females. Owen Duffy of the Napa State Hospital, Napa, took three of the younger bulls and two attractive cows. Sixteen buyers absorbed the 41 head offered.

The sale was held under the management of the California Breeders Sales and Pedigree Company, Sacramento. Ben A. Rhoades of Los Angeles was the auctioneer and was assisted in the ring by Geo. W. Bell of Tulare.

The list of sales follows:

BULLS

1. Sir Pietertje Korndyke Ormsby, Oct. 1915; J. E. Dugan, Dixon, \$3,200.
2. Sir Pietertje Niko Ormsby, S. O. Walker, Visalia, \$100.
3. Unnamed out of Fern Reinschje Ormsby, Napa State Hospital, Napa, \$80.
4. Unnamed out of Dean Forest Ormsby Mercedes, James McGillivray, Sacramento, \$160.
5. Unnamed out of Jewel Beets Banostine, Napa State Hospital, \$120.
6. Unnamed out of Faribo Pontiac Ormsby, Napa State Hospital, \$170.
7. Admiral Pietertje Mechtide, Oct. 1919; S. O. Walker, \$450.
8. Unnamed out of Kathleen De Kol Burke, M. Borba, Dixon, \$50.

FEMALES

1. Miss Freckles Ormsby Hengerveld, Jan. 1920; R. L. Holmes, Modesto, \$310.
2. Belle Pietertje Johanna Ormsby, Nov. 1914; L. N. Irwin, Davis, \$80.
3. Pleasant View Freckles, Apr. 1913, 20.83 lbs.; Burr Farm, Los Angeles, \$360.
4. Dean Forest Mercedes De Kol, 2d, Oct. 1915; Napa State Hospital, \$260.
5. Dean Forest Ormsby Mercedes, Feb. 1918; M. Borba, \$90.
6. Aaggie Niko Alka, June 1916, 21.18 lbs.; R. L. Holmes, \$650.
7. Miss Aaggie Ormsby Korndyke, Jan. 1919; R. L. Holmes, \$175.
8. Queen Ormsby Segis Butter Girl, Oct. 1918; Napa State Hospital, \$300.
9. Miss Claire Pietertje Ormsby, April 1919; H. E. Spires, Caruthers, \$270.
10. Queen Niko Pietertje, Apr. 1916, 19.04 lbs.; R. L. Holmes, \$400.
11. Betty Beets Banostine, Jan. 1917; H. V. Greenwood, Vallejo, \$95.
12. Unnamed helper calf out of Betty Beets Banostine, R. L. Holmes, \$285.
13. Ollie Watson Homestead Hengerveld, Dec. 1911; Manuel Perry, Dixon, \$85.
14. Duchess Banostine Butter Mald, Nov. 1916; C. W. Stock, Fernley, Nev., \$265.
15. Woodville Johanna Segis, Jan. 1918, 11.70 lbs.; Burr Farm, \$290.
16. Faribo Pontiac Ormsby, Nov. 1917, 14.51 lbs.; Burr Farm, \$400.
17. Fern Reinschje Ormsby, June 1917; C. W. Stock, \$265.
18. Miss Faribo Ormsby, Jan. 1918; Burr Farm, \$275.
19. Unnamed helper calf out of Francie Evergreen Colantha De Kol, R. L. Holmes, \$285.
20. Unnamed helper calf out of Jessie Omega Banostine Beets, R. L. Holmes, \$205.
21. Cleopatra Ignaro De Kol, Nov. 1911, 20.16 lbs.; A. P. Dutra, Dixon, \$210.
22. Pleasant View Johanna Aaggie, Nov. 1910, 645.88 lbs.; R. L. Holmes, \$175.
23. Queen Mechtide Colantha Pontiac, Sept. 1918; R. L. Holmes, \$160.
24. Frances Evergreen Colantha De Kol, Apr. 1916; C. W. Stock, \$185.
25. Woodville Princess, Feb. 1918; Burr Farm, \$295.
26. Mutal De Kol Segis Butter Girl, Aug. 1916; H. E. Frost, Elmira, \$250.
27. Golden Valley Ester Ormsby, Nov. 1917; H. J. Long, Fallon, Nev., \$235.
28. Marie Princess Banostine, Nov. 1916; A. P. Dutra, \$295.
29. Golden Valley Tressa Ormsby, Dec. 1917; Burr Farm, \$380.
30. Kathleen De Kol Burke, July 1915; C. W. Stock, \$230.
31. Miss Cleopatra Korndyke Ormsby, June, 1920; C. W. Stock, \$115.
32. Unnamed helper calf out of Pleasant View Johanna Aaggie; R. L. Holmes, \$370.

SOUTHERN CALIFORNIA FAIR

Lovers of fine stock are looking forward with a great deal of interest to the Southern California fair to be held October 13 to 19 at Riverside. While there will be a large number of prominent breeders exhibiting from various parts of the state, and some from Eastern states, there will be one feature at Riverside seldom seen at a fair of its magnitude, and that is the large number of small breeders, beginners in the livestock game, who will show their product at this farmers fair. It has been the consistent policy of the management of the Southern California fair to encourage the small breeder, and the results of this policy are already apparent. A number of those who exhibited for the first time last year have made their entries this year with increased herds, and the entry list already shows a considerable number of breeders of blooded stock who have never before made an exhibit. The fair management considers this a healthy indication of the progress of the pure bred stock industry, and also an endorsement of their policy with relation to the small breeder.

The poultry show will be a notable event. The cooping of this exhibit will be a demonstration of poultry showmanship and the very best birds of the best breeds in the West will be on exhibit. There will be a fine display of bantams, and also a large and attractive pigeon show. In connection with the poultry show the home demonstration department of the farm bureau has secured the assistance of specialists and will give daily demonstrations in poultry raising.

CATTLEMEN'S CONFERENCE

Secretary Stollery of the California Cattlemen's Association proposes a meeting to be held in Salt Lake City, October 28, 29 and 30, to talk over matters of interest to members of the association. Mr. Stollery hopes for delegates to be present from all states west of Montana and New Mexico. He suggests that this conference discuss and take action upon the following subjects:

A plan of action whereby the seasonal surplus supply of cattle from the various states can be gauged.

The preparation of a schedule by which a more steady supply of cattle would enter the various Eastern and Middle Western markets.

National legislation matters pertaining particularly to federal financial aid.

Enactment of state or federal legislation toward the eradication of tuberculosis in range cattle and the elimination of tubercular cattle entering our markets.

Action tending to withhold from prime cattle markets half fat cattle and feeders.

Prevention of glutting other states with feeders.

A closer cooperation between the state associations with respect to feed and other conditions.

Effort to reestablish the branch offices of the U. S. bureau of markets.

Policy of a campaign having as its object stimulation of beef consumption.

THREE BIG HEREFORD DAYS STATE FAIR GROUNDS, SACRAMENTO, CAL.

Are you going to get in on the ground floor with HEREFORDS? Through sheer merit this breed has forged ahead steadily in California and other western states, and this year for the first time, in the biggest beef cattle show ever staged at Sacramento, HEREFORDS outnumbered any other beef breed. There's a real reason for this increasing popularity, and it is measured by a dollars and cents standard. The three public sales listed below are full of opportunities to buy real breeding HEREFORDS.

Thursday, November 4

45—Registered Herefords—45

This is the regular fall offering of picked tops, known more popularly as the "Association Sale." Hereford breeders all over the coast have been striving constantly toward the improvement of their herds, and it is only natural to expect advancement in quality in each succeeding sale of picked cattle.

Foremost herds of the west will be represented in this sale, and the buyer who wants to add one or more extra choice animals to his herd, or the beginner who wants to start with that sort of foundation will find ample range of selection in this offering.

Sale under auspices of

PACIFIC COAST HEREFORD CATTLE BREEDERS ASSOCIATION

J. I. Cazier, Pres., Wells, Nevada. J. A. Bunting, Sec., Mission San Jose, Calif.

Friday, November 5

NEVADA HEREFORD RANCH

WILL SELL

55—Registered Herefords—55



Beau Blanchard 76th

HARRIS STANDARD 2ND is as well bred as any bull in the United States and is a wonderful sire. Our show herd for the past three years has shown some evidence of his breeding ability, but to be fully appreciated you must see the uniform excellence of his entire get on our ranch. His get have never been defeated in the Get of Sire class.

IN THIS SALE we will sell over 30 heifers sired by him, and many of them are safe in calf to BEAU BLANCHARD 76TH. Others will be bred to ABE MISCHIEF, by Mousel's mighty Beau Mischief, and to BOCALDO 21ST, by Hazlett's Grand Champion, Bocaldo 6th.

This is the first individual public sale offering made by NEVADA HEREFORD RANCH, and we believe the quality of the offering to be a credit to this herd, and one in which the buyer may rightly expect to secure correct breeding animals.

This herd is widely known as one of the largest and most richly bred collections of the breed in the west. Especial attention has always been given to the maintenance of a healthy herd, and this herd is now in line for Federal accreditation.

At 1920 California State Fair, BEAU BLANCHARD 76TH was Grand Champion in the greatest Hereford Show ever staged at Sacramento, and his young son PILOT, out of a Harris Standard 2nd dam, owned and exhibited by Wm. Briggs, Dixon, was first junior bull calf and Junior Champion.

Four of the first calves sired by BEAU BLANCHARD 76TH, and out of Harris Standard 2nd dams, bid well for high honors in the individual classes, and in the Get of Sire group stood second only to the get of Harris Standard 2nd. Remember that in this sale a large number of HARRIS STANDARD 2ND heifers sell bred to BEAU BLANCHARD 76TH.



Harris Standard 2nd

Owners:

J. H. CAZIER & SONS CO., WELLS, NEVADA.
Otis Cordell, Herdsman

Saturday, November 6

50—Registered Herefords—50

This offering rounds out the greatest Hereford selling event yet attempted in the breed's affairs in the west, and fits into the three days offerings especially well.

There will be a liberal number of cows, practically all young, and a number of them with calves at foot by richly bred sires. The cows themselves represent some of the most highly approved Hereford families and may well be rated as desirable breeding females of great usefulness.

The offering contains an especially interesting lot of heifers of substantial breeding, the sort that promise to develop into desirable and profitable breeding matrons.

Owners:

BARNGROVER & WRIGHT, SANTA CLARA, CALIF.

Every animal in the three offerings listed above is positively guaranteed to be a breeder; every animal over six months old tuberculin tested and individual certificates furnished.

For catalog of any or all sales, write the management.

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneer: Col. Ben A. Rhoades, Los Angeles
In the Ring: John A. Bunting, Mission San Jose

TOYON FARM ASSOCIATION

WILL SELL AT PUBLIC AUCTION

150 Registered Holsteins 150

November 10-11, 1920

State Fair Grounds, Sacramento, Cal.

The herds of Toyon Farm Association, Los Altos and San Francisco, are to be consolidated into one big herd on their Brentwood Farm. The herds now total approximately 350 head, and for the present the owners plan to carry only about 200 head, hence the sale of 150 head at this time.

100 Milk Cows in This Sale

Their first individual offering will include approximately 100 head of cows and heifers in milk, of splendid type and breeding, many with large official records and out of high record dams. There will also be about 30 bred and open heifers, and about 20 bulls in the sale.

Females Bred to High Record Bulls

The females in this sale are bred to SIR PIETERIE ORMSBY MERCEDES 43RD, son of Sir Pieterie Ormsby Mercedes and Aaggie Wayne Peep, whose yearly records for five years exceed the total of any other cow; SIR AAGGIE MEAD, son of Sir Aaggie De Kol Acme out of a 1200 lbs. daughter of the 1142 lb. cow Aralla De Kol; a son of the 33 lb. cow Bonnie Lass Pauline; and a 30 lb. son of Johanna Bonheur Champion.

A Healthy Lot of Unblemished Cattle

In this entire offering there are only three cows with blemished udders; no female of breeding age will be offered unless she is believed to be safe in calf; every animal is positively guaranteed to be a breeder; EVERY ANIMAL IS TUBERCULIN TESTED BY A FEDERAL VETERINARIAN AND SOLD SUBJECT TO RETEST BY THE BUYER.

Catalog free on request. Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. John W. Davis, Manteca

Dispersal Sale

67 REGISTERED HOLSTEINS 67

Kounias Registered Stock Farms

Modesto, California

Thursday, October 28, 1920

This offering will contain the highest record cows ever offered in a public sale in Stanislaus County, substantially bred, and practically all young.

There will also be a choice selection of bred and open heifers and heifer calves of good type and breeding.

The list of bulls affords selection of high quality and breeding for dairymen, and a few of registered herd heading caliber, including the herd sire KING KORNDYKE AAGGIE FAYNE, whose dam is a 33 lb. daughter of King Hengerveld Aaggie Fayne; a choice young son of the famous Hollywood Farm sire, JUDGE SEGIS, out of a 21 lb. daughter of Forward Prince Segis, her dam a 31 lb. daughter of Sir Skylark Ormsby Hengerveld that made 1127.27 lbs. butter in one year; and many others of excellent breeding.

Every animal positively guaranteed to be a breeder; every animal tuberculin tested and sold subject to retest by the buyer except as announced at sale.

Catalog free on request. Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. J. H. Corley, Modesto

Holstein Bull Calves For Sale Very Reasonable

Sired by Sir Veeman Korndyke Pontiac and out of yearly record cows. Write for prices, photo and pedigree.

BURR FARM

Box 220, Route 2. East 26th and Downey Road, Los Angeles

Home of King Korndyke Pontiac Mead

Bargains in Bull Calves from Tested Dams.
Top Herd in U. S. for Fat Production of 100 cows.

LOS ANGELES COUNTY FARM HOLSTEINS

HONDO, CALIF

3 Miles South of Downey on Downey-Long Beach Blvd.



Purple Vetch is here!

It's the cover crop the whole country has been crying for. When this announcement appears, orders will come pouring in—and our stock is very limited.

Wire, write, order personally—but **ORDER** at once! Address all communications to Department C.

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Sixth & Main Sts.
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Los Angeles, Cal.

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Are the product of Thirty Years' experience in growing Quality Nursery stock.

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Grown from Selected Buds. We are now booking orders for 1921 delivery. Place your order early and be sure of getting the best.

AVOCADOS

We handle all of the recommended varieties budded on hardy Mexican seedlings.

FEIJOAS

Excellent for jellies and preserves. Perfectly hardy and quite prolific. We can supply grafted plants from the large fruiting varieties.

Send for our new descriptive Price List.



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Founded in 1889 by R. M. Teague

Hyde's "BANNER" STRAWBERRY Plants

Our original strain, holding the world's record for production
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TREES - PLANTS - SEED POTATOES
Watsonville (Santa Cruz Co.) Cal.

San Diego County Farm Bureau Fair

By Robt. R. McLean



THE second annual San Diego County Farm Bureau fair opened September 22 under almost ideal conditions as to weather and location. It was held in the beautiful Exposition grounds in San Diego, four of the large buildings and much out of doors space being necessary to accommodate exhibits and concessions. A record breaking crowd was in attendance during the first two days and at the time this is written, the third day of the fair, it appears that the records of last year will be greatly exceeded. An attendance of 50,000 is probable, as against 33,000 last year.

Many unexpected and attractive features have been added for this fair and appreciative crowds have ranged through the buildings, down the concessions and around the livestock pens from morning till night. An automobile show has been staged in one building where everything from a Ford to a Renault is on display. An exhibit has been put on by the Honey Producers Association in connection with the county bee inspection service, a large screened cage being used to demonstrate the actual handling of bees. Fine educational exhibits are shown by the U. S. navy, U. S. weather bureau, Parent-Teachers Association, Women's Federated Clubs, this latter including a nursery and baby testing clinic, the Red Cross, Y. M. C. A., Y. W. C. A., county library, county horticultural commission and others.

An unusually fine poultry and rabbit display is on exhibition, introducing, among other things, a new breed of chickens, a cross between the Orpingtons and Rhode Island Reds. The hog exhibit is the best ever shown in this part of the state, including the Winsor Duroc-Jerseys, the county farm Berkshires, the Johnson Bros. Poland Chinas, the Canfield Estate Hampshires and the Monte Vista Tamworths. A fine exhibit of hogs was also brought in by the Boys Pig Club of the Grossmont Union High School.

The beef and dairy cattle industry is also well represented by giant Herefords from the Viejas ranch of D. H. Ogden, including the enormous bull Cal Rupert, Aberdeen-Angus cattle from the Lilac Ranch at Escondido, Guernseys from the Edgemoor, Cox and Winsor ranches, Holsteins from the Drinkwater and Learn ranches at Santee and Jerseys from a number of well known ranches.

Sheep are represented by Rambouillets and Cotswolds from the Galloway and Bond herds, some especially fine rams being shown. A large goat exhibit is housed in a specially constructed place and the number of visitors hurrying to this part of the fair proves the increasing interest in goats, many fine Toggenburgs, Saanens and Anglo-Nubians being in evidence.

Some very fine saddle horses were entered by the Medd and Brodie ranches of Alpine and Palm City, as well as cow ponies and untrained polo ponies by R. E. Bushnell of Mesa Grande.

The farm home department of the farm bureau and the farm bureau centers are especially well represented, the community exhibits far surpassing those of last year in quality and novelty of design. A drying demonstration of fruits and vegetables is held by the home department every morning and a cold pack canning demonstration every afternoon, attracting large crowds of interested women. One of the most interesting of the demonstrations given by Miss Fleda E. Smith, the San Diego county agent, has proven to be the dress form demonstration, illustrating the making and use of individual dress forms.

The canning contest between the farm home centers was very close, there being only 3½ points between the first and fourth prizes. The El Cajon home center won with 87½ points; Escondido was second with 87 points; Lakeside third with 84½ points and Jamul fourth with 84 points; Bonsall and Potrero were given fifth and sixth. There was such a general excellence in all the canned produce and fruit that the judges had a very difficult task deciding the winners.

The sack garment display attracted much attention and interest and was

of such character that Miss Eddy, state leader of home demonstration agents, requested that it be taken to the Farm Home Agents conference at Berkeley in October for exhibition there.

The general canning contest, open to all women in the county, brought many entries, and many fine jars were shown.

The exhibits of the farm bureau centers were planned and executed to bring out prominently the particular agricultural and horticultural activities of each. Poway, for instance, is famous for its quality peaches and grapes and the name "Poway" on the exhibit of this center is composed of Tokay and Cornichon grapes, with a background of Muscats and a border of Rose of Peru and Mission grapes. Several boxes of J. H. Hale peaches are on exhibition here, and for uniform size, color and quality seem to be absolutely perfect. A quantity of rust and smut proof number five macaroni hard wheat shown by this center represents 13 years work by the breeder, C. M. Stevens.

The Ramona district specializes in grain and chickens, some 28,000 sacks of barley, 5,000 sacks of oats and 3,000 sacks of wheat being produced here this year and \$42,000 worth of eggs during the first six months of the present year. The name "Ramona" on the exhibit is formed by photographs of White Leghorn chickens, the hens having unconsciously formed the letters while feeding, feed being scattered along the outlines of each letter to group them as desired.

El Cajon center came to the front with 184 different varieties of fruits on display, there being for instance, 25 varieties of grapes, 19 of apples and 16 of peaches. Seven varieties of cotton were also shown, these being grown on the Culbertson ranch under the direction of the Chula Vista experiment station. One of the contributors to the El Cajon community exhibit, D. J. Nelson, had 42 varieties of fruit alone on display, and another, John Ballantyne, 14 varieties of grapes.

Japatal Center, a mountain district where all fruits, grains and vegetables grown are unirrigated, has a remarkable showing of standard broom corn, amber and honey sorghum, some shown being 16 feet high, oats and Sudan grass eight feet high, as well as many fine fruits of various kinds. The Little ranch at Glen Lonely, occupied and improved only since the first of April, furnished 16 articles of fruit and grain that are in the community exhibit, while the Sly ranch supplied some extra fine quality unirrigated oranges, peaches and prunes. This center also has on exhibition a two months old mountain lion, captured in their valley only a few days ago.

A new center at Otay, organized a few weeks ago, made a very creditable showing of fruits, vegetables and nuts. Especially interesting is the Lima bean exhibit, as that is a comparatively new industry in this place. The Encinitas center, comprising Carlsbad, Olivenhain and Encinitas, made a background for their name on their exhibit by the clever use of grain, popcorn kernels, peas and beans, this being one of the finest winter vegetable growing sections in the state. Jamul center has a splendid exhibit of dry farming products, especially grains and fruits raised without irrigation. Many beautiful fruits, nuts and vegetables are shown in this booth. Lakeside center is represented by many fine fruits, vegetables and grains, among them being specimens of corn 16 feet, eight inches in height. Some fine cotton is also shown in this section. Bonsall center exhibits grains, beans and fruit, the varieties of beans shown being particularly interesting. Lemon Grove has a unique display of lemons, the American flag being formed with them, the stripes being represented by alternating rows of green and yellow fruit. Fallbrook center has a fine variety of products on exhibit, lemons, grains, peanuts, celery, tobacco and sorghum attracting particular notice. Vista, a grain and fruit center, is represented by a general exhibit of quality grains, vegetables and fruits. The Escondido center has an unusually attractive display.

A double fence row of corn was constructed across the front of the booth, the posts being represented by pumpkins. A legend hung on this fence reads "Guaranteed to Stop Any Hog." Corn and sunflowers 18 feet high are on exhibit here, beside a great quantity of fine grapes and other fruit.

As was the case with the home department canning contest, the farm bureau community contests ran very close, there being only 4½ points between first and fourth prizes. El Cajon was given first prize, Escondido second, Poway third, Japatul fourth and Jamul fifth, first prize being only eight-tenths of a point above second, and second but 1½ points ahead of third. The actual merit of the displays was very nearly equal and the difference in points was partly accounted for by the handicaps allowed for distance from San Diego.

Among the private exhibits those of Mrs. Lillian Ballantyne of El Cajon, showing many kinds of grapes, peaches, persimmons, apples and quinces, and the Juch ranch at Julian, specializing in apples, deserve special mention. A "statue" of County Supervisor "Uncle Joe" Foster, made by 16 year old Mabel Smith, is also exhibited by Mr. Juch, the clothing of this figure being formed of evaporated apples. The A. W. Johnson ranch of Lakeside exhibited some of the finest J. H. Hale peaches ever shown, some specimens weighing as much as 18 ounces.

One notable feature of the attendance is the very large number of out of town visitors, Eastern people, or those more or less recently from the East and Middle West. A rather amusing "bait" that revealed the Middle Western origin of many visitors was accidentally discovered by the First National Bank of San Diego, which has a prominent booth at the fair. A fine collection of papaws was presented to the bank by Prof. T. W. Dodd of Oceanside and placed on exhibition as more of a curiosity than anything else. First one visitor would make discovery of this fruit, then others, until literally hundreds in one afternoon had seen and admired it, by their exclamations and questions revealing the fact that papaws were familiar to their appetites and dear to memories of younger days in other states.

The judges for the agricultural and horticultural displays are Robt. M. Hodgson of Los Angeles, Dr. D. S. Fox of San Bernardino and E. L. Garthwait of El Centro, farm advisers for their respective counties, and for the livestock, G. E. Gordon of Los Angeles for goats, W. G. Waterhouse of Los Angeles, hogs; E. G. Teaney of Los Angeles, poultry; Lewis Salisbury of Pasadena, rabbits, and Prof. W. T. Skilling of San Diego, vegetables. The bee products exhibits were judged by C. O. Brenner, Jas. F. Kerr and J. S. Beermaker.

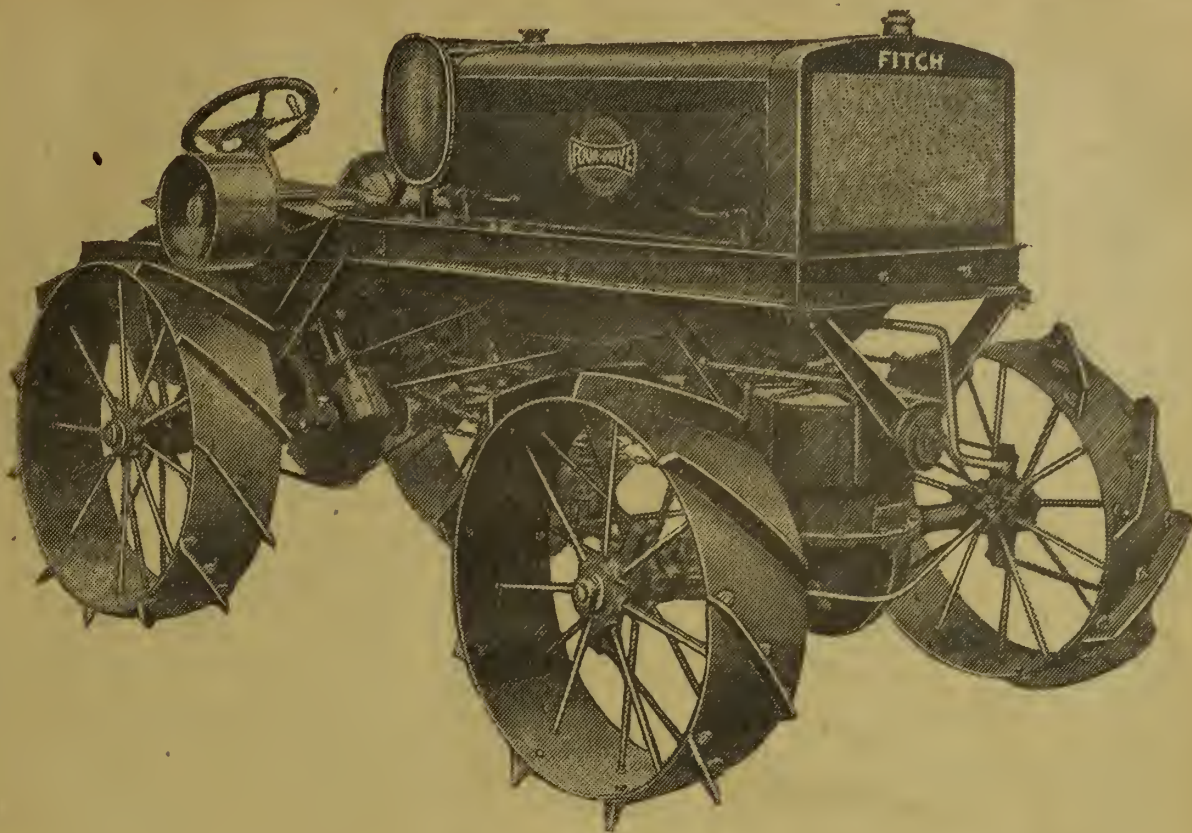
The success of this fair is largely due to the energy and enthusiasm brought into play by Farm Adviser France, Home Demonstration Agent Miss Fleda E. Smith and Manager of the Fair Ed Davidson. These officials were ably assisted by the executive committee, this committee being responsible for the actual development of the exhibits, raising the necessary money and looking after the many details that go to make an exhibition of this kind of such educational value as it should be. The executive committee are: Felix Landis, president; Ben F. Thorpe, vice-president; Morris C. Allen, secretary-treasurer; G. T. Drinkwater, A. E. Holloway, W. Barkley and R. R. McLean.

This fair will certainly be continued from year to year, and it is expected that the gate and concession receipts this year will create a sinking fund that will in a measure insure the future and continued success of any such enterprise.

UNCERTAIN

"Well, Mr. Pedagogue, does my boy show any special aptitude for work?" asked the proud father.

"I think so, Mr. Bronson," answered the schoolmaster. "I am not certain as yet whether John will make a sculptor or a baseball player. He is unerring in his aim with paper wads, but the condition of his desk top convinces me that he can carve with considerable facility."



Power in ALL Four Wheels

That means more Traction and less wasted Power. We can prove that, for the same horsepower, the FITCH FOUR DRIVE is the most economical tractor you can buy.

Gears all enclosed—immediate change to pulley easily made—built of best materials—strong and simple—burns kerosene or gaso-

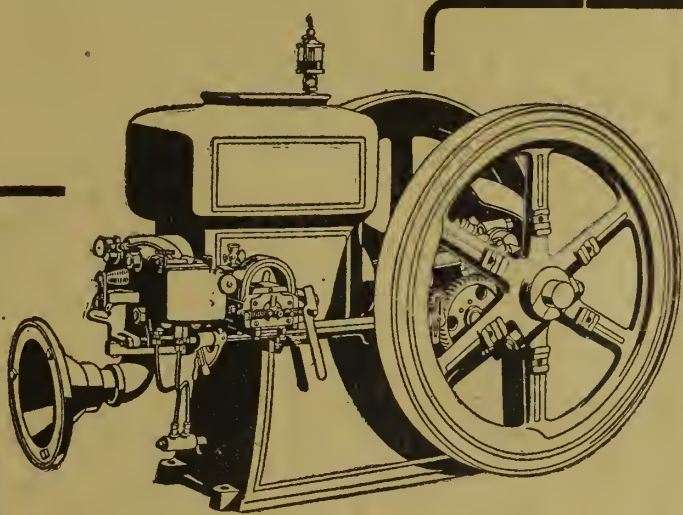
line—has a front draw-bar hitch, which increases the traction with the load pulled.

There are real reasons why a FITCH FOUR DRIVE Tractor is the logical one to buy. Come to our exhibit at Glendale. Then, if you are interested, we'll demonstrate for you on your own farm or ranch.

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Pacific Coast Distributors



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Hercules Engines

ANNOUNCEMENT:—Anticipating your needs we entered our orders early and have just received several car loads of Hercules Engines. For the first time in nearly two years our line of sizes is complete and we will be able to make immediate shipments for a brief period only. Our advice is—Buy now!

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POULTRY

Baby Chicks. We are now filling our hatcheries in preparation for the fall season which will soon be in full swing, and we can make deliveries in small or large quantities of the following kinds of chicks: R. I. Reds, Barred Rocks, White Leghorns, Brown Leghorns, Anconas, White Minorcas, Blue Andalusians and Mammoth Bronze baby turkeys. Send for our prices and place your order as early as possible so as to be sure of getting your chicks at the time you want them. Pioneer Incubators, Brooders, supplies, etc., always on hand. **PIONEER HATCHERY**, 320 S. Spring Street, Los Angeles, California.

S. C. White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Now booking orders for this Fall and next Spring delivery. Prices and terms gladly sent on request. Hatchers and shippers of Baby Chicks since 1898. **MUST HATCH INCUBATOR COMPANY**, 438 Seventh Street, Petaluma, California.

Raise Fall Chicks. They are profitable. Write for circular. See why they pay. Chicks every week. R. I. Red, Barred Rock, White Leghorn. Also booking for spring delivery. Order now and get a desirable date. Safe arrival guaranteed. **Stubbs Poultry Ranch and Hatchery**, P. O. Box 67, Palo Alto.

Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. L. W. Clark, 615 Main Street, Petaluma, California.

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S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write Henry Miller, Supt.

White Leghorn Baby Chix from heavy laying **HOGANIZED STOCK**. Safe arrival of full count, live, strong chix guaranteed. Price list and interesting literature on application. **The Pioneer Hatchery**, 409 Sixth Street, Petaluma, California.

White Leghorn Baby Chicks from Extra heavy layers, all Hoganized. Booking orders NOW for fall and spring of 1921. Safe delivery guaranteed. **HICKS ELECTRIC HATCHERY**, R. 2, Box 22, Petaluma, California.

Barred Plymouth Rocks—"Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. **Charles H. Voden**, Los Gatos, California.

White Leghorns—Chicks and hatching eggs from the home of heavy layers. Spring orders being booked. Send for price list. **Curtis White Leghorn Ranch**, R. 1, Box 29, Gardena, California.

For Sale—Pullets \$2.00; Cockerels \$5.00 each and upward. White Leghorn, Brown Leghorn, White Rock, Mahajo Farm, P. O. Box 597, Sacramento, California.

Eastman's Bred-to-Lay Hoganized and Trapped Barred Rocks. **FALL CHICKS.** Fairmead Poultry Farm, Fairmead, California.

For Sale—125 of the best Blue Andalusians in America. Will sell all or part. **J. R. Huddleston**, 342 Edgeware Road, Los Angeles, California.

Day Old Chix—Barred Rocks, R. I. Reds, Buff Orpingtons, Black Minorcas, Anconas, Buff, White and Brown Leghorns. **Enoch Crews**, Seabright, California.

Thoroughbred Barred Plymouth Rocks. Mrs. M. A. Warren, 35 Little Delmas Ave., San Jose, California.

I Will Hatch Your Eggs five cents each. \$4.00 per hundred. **M. Romer**, 7304 Beach Street, Los Angeles, South 2376W.

Baby Chicks from selected egg type S. C. White Leghorn hens. **Tupman Poultry Farm**, Box 7-C, Ceres, California.

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Powerene is Equal to Gasoline at 5c a gallon. Salesmen and agents wanted. Exclusive territory granted. Powerene is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed, power. An amount equal to 20 gallons of gasoline sent to any address in the United States, charges prepaid, for \$1.00. **W. Porter Barnes**, Box 424A32, Santa Rosa, California.

Going to Build—Complete plans, specification details and list of material for chicken houses at the exceptional offer of \$2.00 a set. Plans of all types of farm buildings made. Give us your problems if you are going to build. **Standard Farm Building Company**, 516 New Call Building, San Francisco.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the **Engineering Service Company**, 1316 Washington Building, Los Angeles, California.

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Either one, land, hog, cattle in exchange for 1 Holt Caterpillar and 3 plows, cost \$6,600. Valued at \$6,000. **P. Miller**, Gustine, California.

If You Want to sell or exchange your property write me. **John J. Black**, 116th St., Chippewa Falls, Wis.

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Jerseys for Sale—The greatest herd of St. Lambert Jerseys in the West. Dr. Belknap has sold his sanitarium and will disperse his famous herd of Jerseys at private sale. Rich in blood of the world famous King of St. Lambert, Ida, Mary Ann and Lucy of St. L. Stoke Pogis 3rd, and all the St. L. notables. Never in recent years has such a herd been offered for sale. Great udders, heavy producers, 6% fat. This herd held the state championship 3 years. Free from all disease. No old cows. Headed by a grandson of King Roter Lad. Will offer them at 14th their value rather than make a sale. \$5000 for 21 head. Come any day but Saturdays. **L. J. Belknap**, M. D., San Jose.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. **T. T. Miller**, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. **A. W. Morris & Sons**, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. **John Lynch Ranch**, Box 321, Petaluma.

Registered Holstein Bulls, various ages at **Nuevo Stock Farm**, Wineville, California. **E. R. Stalder**, owner.

Registered Holstein Bulls of various ages for sale. **Millbrae Dairy**, Millbrae, California.

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For Sale—10,000 Strawberry Plants for this fall's 1920 delivery in five standard varieties raised on new beds and clean soil. Also several hundred of Cory's thornless Blackberry plants, a very large and good berry and a good growing plant, all thorn producing plants culled out, no gloves needed to handle them. **ADDRESS: H. D. RADELEFF**, Springville, California.

For Sale—Limited Banner Strawberry Plants. These plants average 10 tons to the acre. Grown at the foot of Mount Shasta. Place orders while they last, 60 cents per dozen; 100,000 lots \$20 per thousand. **J. C. BELL**, Castella, Shasta County, California.

Berries—We can furnish you with first class plants of all leading varieties. Now is the time to order, because plants will be scarce later. Send for price list. **M. J. MONIZ**, Berry Specialist, Sebastopol, California.

Reliable Cabbage Seeds—I grow them. You want them. Let's get together. Write me for special trial offer on just what you will need. **Isaac F. Tillingshast**, 40 Podel Street, Santa Rosa, California.

For Sale—Strong Mountain Grown Brandywine Strawberry plants at two dollars per hundred postpaid. **B. BRYAN**, Camp Baldy, California.

For Sale—Winningstadt Cabbage Plants, immediate delivery. **E. Willard**, Vignolo Station, on Santa Ana Line near Stanton, or address Anaheim R. No. 1.

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50,000 Florida Sour Stock; 100,000 California Sweet Seedling orange seed-bed stock, 15 months old, suitable for fall planting. It will pay you to plant this fall. **SOUTHLAND NURSERIES**, 1941 East Colorado Street, Pasadena, California. Phone Colorado 6352.

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For Sale—Wonderful Pomegranate, French Prune Trees, Rooted Grape Vines. **W. M. Burton Nursery**, Box 43, Porterville.

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Fruit Trees—Berry Plants scarce, order now. **Cash Nursery**, Sebastopol.

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For Sale—10 Pekin Drakes and 6 Pekin Ducks, 6 months old, \$2.00 each. **Geo. E. Radeleff**, L. Box 146, Springville, California.

Mammoth White Pekin Ducklings 30c each, eggs \$1.00 per dozen. **A. Surtman**, Petaluma, California.

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Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. **The Kruckeberg Press**, 237-241 Court St., Los Angeles.

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Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. **Calac Orchards**, Martinez, California.

Real Good Berkshires, cholera immune. **Frank B. Anderson**, Box 724, Sacramento, California.

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Borge's Big Duroc Jersey Hogs—Herd headed by California Golden Model 3rd. A few choice females of desirable breeding for sale at very low figures. I am offering for sale the tried boar **Dos Palos Chief** (an Orion Cherry King Jr. boar). Here is an opportunity to secure a tried sire at a very low figure. Satisfaction assured. Write at once. **Jack Borge**, **Dos Palos**, California.

Durocs—March, April and May farrow, the large and smooth kind. Boars and gilts by Orion's Johnson Defender, You'll Do and Gano families. Write for prices and description, or write just what you want. If I haven't it will tell you. Every pig sold must be right or no sale. Mayflower Thoroughbred Stock Farm, E. Bakersfield, California. **John Kincaid**, Prop.

Lamb's Durocs—Seven good sows with litters, twenty open gilts ready to breed, weaned pigs, two good boars. All of best blood lines. Priced right to close out the herd. Satisfaction guaranteed. **Elmer Lamb**, Ceres, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. **Harvey M. Berglund**, Dixon, California.

For Sale—6 thoroughbred Duroc Boars, 2 thoroughbred sows. Always a good stock of thoroughbred Durocs on hand. Address: **Paul Zucco**, Independence, California.

Big Type Durocs at Keystone Ranch by Top Sensation 1st, May Rose King, Winsor's Giant Orion. Choice March boars and gilts for sale. **E. F. Myers**, Lankershim.

Bred Sows and Gilts and young stock. Pathfinder and Great Wonder I Am breeding. Monthly payments if you wish. **Derryfield Farm**, Capital National Bank Building, Sacramento.

Durocs—Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. **J. L. Stevenson**, Van Nuys, California.

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. **Hollow Hill Farm**, B. W. Shaper, Manager, Colton.

Winsor Ranch Durocs—Boars and bred gilts of our own and eastern breeding. Write us your needs. **Morris C. Allen**, Manager, Bonita, California.

High Class Durocs—Two fine early litters, 10 each. Dam 2nd in strong class. **Owensmouth**. See **A. V. Austin**, Van Nuys, California.

For the Best in Durocs write June Acres Stock Farm, Davis, California.

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I Would Sell My topnotcher boar by Kings Big Bone Leader; two bred sows by Long Smooth Jumbo; also spring pigs—everything big type stuff. **H. Christlan**, Arlington. Write me.

Bred Poland-China Gilts sired by California Gerstade and bred to Some Price. \$75.00 and up. **J. A. Crawshaw**, Hanford, California.

The Grand Champion El Profitto heads our big type Poland Chinas. Letters promptly answered. **Viola L. Renwick**, Santa Barbara, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. **Ferguson & McKelz**, Orland, California.

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Alredale Puppies with reg. cer., also Poland China hogs. **M. M. Reiman**, Planada, California.

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One ply \$1.50, 2 ply \$2.00, 3 ply \$2.50 complete with fixtures. Rubber roof paint 50c per gallon in 5 gal. lots.

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Men With Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write **J. H. Yetter**, 116 North Broadway, Los Angeles.

FARM LANDS FOR SALE

For Sale by Owner—20 acre orchard of young lemons; ideal location, best of soil. Oranges on this place at the time of the big freeze of several years ago were not affected; no firepots were used. There has been from 1500 to 3000 chickens on this place for the last 8 years, practically no manure has left the place. Cement pipe distributing system throughout. Both gravity and pump water. Small family orchard. Everything goes with place, including chickens, horses, several head of cows, implements, etc. All buildings practically new. One 6 room house, lath and plastered with screen sleeping porches and screen dining porch, bath and electric lights. Also one three room cottage. Price \$40,000 if taken before December 1st. If interested write **R. F. D. 1, Box 36, Escondido**, California, for further information.

For Sale or Lease—400 Acres improved, 7 miles south of Tulare, \$125.00 per acre; 90 acres of alfalfa can be plowed up for cotton or grain. 160 acres improved 5 miles south of Shafter in Kern County, \$225.00 per acre, 54 acres of alfalfa can be plowed up for cotton or grain; cotton demonstration on two sides. 80 ACRES improved ½ mile from Rosedale store, Kern County, \$200 per acre, partly to cotton and corn now. Possession of either ranch this fall and if not sold soon will lease for crop shares or cash. Shallow water lift and pumping plant on each ranch and all are good land. Owner, **W. F. MARKS**, 1313 West Third Street, Los Angeles, California. Phone: 52471.

\$500 Cash Secures

40-Acre California Farm in high profit fruit zone; improved road, mile RR station, easy drive city; all level fields, condition suitable highly profitable orchards, vineyards; 4-room bungalow; owner called away, anxious quick sale, makes price \$2,500, only \$500 cash, easy terms. Details this and ranches and groves in full production, page 90 **Strout's Big New Illustrated Catalog Bargains** California and 32 other States. Just out. Call or write for free copy. **STROUT FARM AGENCY**, 503EJ, Wright-Callender Bldg., Los Angeles, California.

FOR SALE AND EXCHANGE 10-20-40-60 and 80 acre ranches, rich, level, plenty water, proven grape (Thompson seedless), fig and alfalfa land. Price right, easy terms.

FOR SALE Some of the finest dairies in the state. **Chas. McNeely**, Alhambra, California.

For Sale—46 Acre Alfalfa Ranch, good as any in state. Part cash, balance 5 years. Ranch will pay out in five years as dairy. Will sell 60 to 75 tons alfalfa hay with ranch. You must see this place to appreciate it. Full set buildings on ranch. If interested call or write. **John Salaberry**, Chowchilla, California.

For Sale: Grape land (one thousand per cent profit in three years) frostless citrus land; walnut and almond land; dairying, hogs, poultry. Plenty easy water, ideal climate. Close to town and state highway. \$200.00 an acre. Why pay more for less value. **C. E. Howland**, owner, Fallbrook, California.

For Sale—\$5000. Clear 104 acres Mattole Valley land, 50 ft bottom, 8 bearing orchard, 14 cleared, on county road; 6 rooms and 5 other buildings; river, creek, springs, fish and deer, million feet saw-pine. **E. T. Gray**, Box 524, Arcata, Humboldt County, California.

For Sale—10 Acres, good improvements, well equipped and located for dairying. Good family orchard, A-1 water cistern, plenty water. By Owner: **John Hayes**, corner Michigan Avenue and Center Street, R. F. D. Box 182, Hynes, California.

For Sale—Ranches, Homes, Acres, free list. **Wilson Bros.**, Santa Cruz, California.

Irrigated Alfalfa Ranches for sale. Other crops, plenty water. **C. I. Graves**, Fallon, Nevada.

Bishop Land Co. can furnish from 5 to 1200 acres of the best land in the Valley. Address **Bishop**, California.

Irrigated Farms—Five acres and up. **Alex. Murdock**, Brentwood, California.

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- 2 Heavy duty 4 disc plows
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- 1 Cunningham pulverizer (6'x24" diam.)
- 1 California land roller 8 foot
- 1 Hop and Vineyard disc plow
- 1 Set stump-jump harrows
- 6 Blading and furrowing plows
- 10 Four foot disc harrows
- 6 Sets steel drag harrows for Fordsons
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- 1 Disc Cultivator and Weeder, Fordson size (for killing morning glories, etc.)
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Tractor Bargain for Sale—12-20 Yuba, like new. This is absolutely the best buy in a used tractor we have ever offered—cost \$3200—used 21 days—price \$1800.

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For Sale—Fordson Tractor in good condition with two 24 inch disk plows, cash only \$850. Call owner any time. **Take**, Brentwood Park. R. F. D. 1, Box 96, Sawtelle.

For Sale—Used ranch material, windmills, pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for our "Special Bargain" price list. **Demmitt Co.**, Unstair, 120 N. Main, Los Angeles.

Tractor Bargains—Cietrac rebuilt and fully guaranteed \$1,200—Fordson \$700—Bean \$400—Yuba like new \$1,800. Many others. **Leonard Fletcher**, San Fernando.

TURKEYS

Bourbon Red Turkeys, Buff Orpingtons, The Ferris Ranch, S. Reservoir, Pomona, California.

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Wanted—Young man for foreman of Mexican labor on ranch near La Habra. Must have a good command of Spanish and be able and willing to work with head or hands. Agricultural training and experience desirable. Mechanical ability, skill with tools and engineering training would be assets. Must find own quarters in La Habra. \$150.00 to \$175.00 per month. Reply by letter. R. L. Reynolds, La Habra, giving qualifications fully.

Herdsmen Wants Position—Experienced in handling pure bred Holsteins. Herds have made exceptional records. Can take full charge and develop herd. Herd must be first consideration. Address Box H, California Cultivator, 112 Market Street, San Francisco, California.

Wanted—Walnut Meats and Cull Walnuts. We have been in this business 15 years, solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French Street, Santa Ana, California. Phone 551-M.

Wanted—An elderly American who has had several years experience with citrus fruits would like the care of an orange grove. Handy with tools—capable of taking charge. Address: F. B. N., Cultivator, Los Angeles.

Wanted—Position as all-around ranch foreman by married man; specialty of pure bred swine. Address "Mc," Cultivator, Los Angeles.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minnesota.

LIVE STOCK

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

I Am Offering for Sale 800 head of 2 and 3 year old Ewes—"full wool sheep"—either in car load lots or more as may be desired, "110 head per car". For further information write: F. H. Rice, Holtville, Imperial County, California, Route A, Box 239½.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

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Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Settling Estate—Dairy

A dairy ranch is purchased in the name of father with understanding that son shall be partner, although there is no written agreement. Father executes mortgage on place and cows, then dies, leaving no will. Another son is appointed administrator, but the estate consists only of debts. Mortgagee forecloses and dairy and cows sold. Son who originally ran the place makes new agreement with purchaser to operate dairy. What becomes of the father's estate and how are its debts and expenses of administration to be paid? Can any of the heirs claim any interest in the dairy or its proceeds in case of its sale?—Subscriber, Los Angeles.

The creditors and heirs of the estate can look only to the assets of the estate for their fees or interest in any property of the estate. By the sale under the mortgage all interest of the estate in the dairy ceased and any interest which the son might acquire in the dairy is entirely outside of the interest as an heir in the estate, so that his relatives have no claim in the dairy or any of the proceeds thereof.

Fraud in Trade

I entered into a contract for the exchange of Eastern property for California property. The deed for the Eastern property was placed in escrow with instructions to deliver upon presentation of certificate of title showing the California property clear. Thereafter I ascertained the California property was worthless and had been grossly misrepresented to me. I ordered the escrow bank not to deliver the deed. I am now threatened with suit to fulfill the contract. What can be done?—Subscriber, Inglewood.

Fraud vitiates any contract. It will be necessary for the party seeking to enforce the contract to proceed

by a remedy in equity to enforce the specific performance, and unless he can show that the contract was in every way fair, reasonable and equitable, and the property here of substantial value, the court will undoubtedly refuse to decree a specific performance. Gross misrepresentations, such as were stated, would undoubtedly operate to bar any judgment against you.

Agreement Not Carried Out

Mother possessed several parcels of property, which was her separate property at the time she married. She left will providing that her husband should have the income as long as he lived and after his death the property should be equally divided among the four children. There were some incumbrances upon the property and the expenses of the administration to be paid. An arrangement was made whereby children should deed their interest to him, certain of the property be sold so as to pay the debts of administration, and then he was to deed back to the children share and share alike. The deed to him was made and he deeded to one son some of the property but refused to carry out agreement as regards the other three heirs. What action can be taken?—Subscriber, White Road.

Probable action would be to compel specific performance of the agreement, which was originally made to the effect that the property would be equally divided among the four heirs. Action should be brought immediately and notice of action filed so as to prevent any transfer of the property to innocent third persons.

Pipe Line Across Property

A pipe line runs straight through our grounds. We have water for domestic use but wish more for irrigation. Have we any right to use water from the pipe line?—Subscriber, Burbank.

The mere fact that a pipe line runs through property does not necessarily entitle the owner of the property to take water therefrom. That would depend upon whether the pipe line is owned by a public utility or not and various other matters.

Wife's Property

A ranch was purchased with personal funds by my wife and taken in her name. I have worked upon the ranch and improved it. In the event of my death could my children by a former marriage claim any interest in the property and would the wife have to prove that she paid for it in order to hold it against them?—Subscriber, Hollister.

The code provides that wherever any property is conveyed to a married woman by any instrument in writing, the presumption is that the title is thereby vested in her as her separate property. It would be necessary, therefore, for your children to show that it was not her separate property to prove any interest which you might have therein. In this respect they would meet a second presumption to the effect that where a husband performs services upon property standing in the wife's name such services were in the nature of a gift; that is to say, that there is never any presumption that the wife agrees to pay for the performance of such services. It would be necessary to establish any such interest that the party seeking so to establish it should very clearly make out a definite contract whereby the wife agreed to give such interest.

COMPETENT AT LAST

"How long has this reporter been on the staff?"

"Oh, long enough to become really useful as a news gatherer."

"What do you mean?"

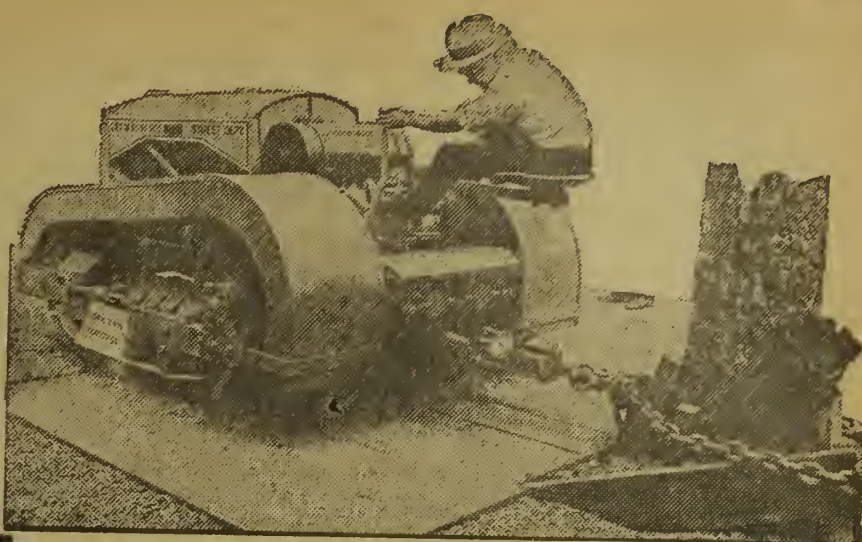
"He has passed through the period of aspiring to write the 'Great American Novel,' or the 'Great American Play,' and is now able to concentrate on a police court item."

HOW WE NEED ONE!

"I've an invention at last that will mean a fortune!"

"What is it this time?"

"Why, it's an extra key for a typewriter. When you don't know how to spell a word, you hit the key and it makes a blur that might be an e, an a, or most anything else."



How Much Power Do You Need?

The 25-40 Trundaar tractor purchased by the city of Riverside demonstrating its pulling power at the National Tractor Show of the West. Is it any wonder it was the talk of the show when people see such beautiful construction, how easily operated, how it will turn completely around in its own length and then to think of a track that is practically without expense or trouble to the owner. Now do not fail to see it.

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Are you practicing transportation thrift in the use of your automobile? Have you computed the cost of operation and maintenance and compared it with what you could travel for by as rapid and as comfortable means; and many times, more rapidly?

As a business proposition you cannot afford to use your machine for business trips to the city, especially if you are making the trip daily. If it is purely a matter of pleasure and desire and you can afford it—that's different, although it is not thrift.

The cost of commutation transportation over the Pacific Electric Railway is one and one-third cents per mile, and books adaptable to almost any number of trips per month desired are available. Tests made by the Government fix the cost of automobile operation at 8 to 14 cents per mile ranging from "Henry's" up. Your pencil need not be very sharp to figure that as a business proposition, your machine does not favor you as compared to the Railway's offer. No machine made can serve you at that cost.

Of course, it's a question: Can you afford it; or, do you just want to, anyway, without reason; or are you thrifty and want to stop all the leaks?

Trials and Troubles of Cotton Growers

By M. E. Bemis



CROWERS of long staple cotton who planted their seed and cultivated the fields with the roseate promise of dollar a pound lint are now facing a market that is made gloomy with dark visaged buyers who are indifferent about making any purchases and reluctantly offer possibly 60, maybe 65, in a few instances more, sometimes even less. The grower who is in a position to hold his cotton is not worrying—much. It is a well known fact that the world's crop of cotton is short. The mills of Britain, of Belgium and other countries of Continental Europe are just beginning to take somewhere near the normal amount of raw cotton. So far as the long staple is concerned the chief supply is from Egypt, and as the amount produced in America represents from ten to 12 per cent of the entire world's crop of long staple cotton, it is reasonable to suppose that the price should be dependent upon the price paid for the Egyptian. So far as can be learned price of cotton in Alexandria, as set by Liverpool buyers largely, is still something over \$1 a pound. Logically the American mills handling long staple cotton should be paying approximately the price of cotton in Egypt plus the freight, commissions, etc. Foreign exchange enters into the problem somewhat, but even with the prevailing low rates of exchange there is an evident justification of the hope and belief that cotton prices must in the final adjustment rule somewhere near the prices that were dreamed of earlier in the year. In other words, the cotton associations are generally advising that cotton should be held for 90 cents or better.

As a basis for the fixing of a price

at which the grower could afford to sell, County Agent H. C. Heard of Maricopa, Arizona, has made a considerable study of the cost of growing a crop of cotton. The following figures have been given out and are believed to be as nearly accurate as any averages that may be made.

Preparation for planting, including stalk cutting, dragging, plowing, disking, bordering and everything prior to seeding, except irrigation, \$14.32; seed and seeding, \$3.65; cultivation, \$8.18; hoeing, \$10.93; thinning, \$3.41; irrigation, water and labor, \$5.86; miscellaneous, \$4.71; total cost of growing, exclusive of rent, interest on growing funds, superintendence, picking, ginning and hauling, per acre, \$51.07. Labor for picking, estimating a half bale, or 900 pounds, of seed cotton to the acre at four cents, \$36; ginning at \$1.30 per 100 pounds, \$11.30; supervising cotton picking, hauling to gin, tent damage, insurance of seed cotton on farm, and incidental picking expense, \$13.50; rent, averaging 13 reports, \$50.43; superintendence, \$7.50. Total cost of growing one acre of cotton, \$170.20. To this might be added an interest charge on the above cost which has been estimated at \$9.76 for a period of nine months. This gives a cost of 71.9 cents a pound for producing 250 pounds of lint cotton per acre. This is slightly above the estimates of the crop for this year and also slightly above the actual production for last year.

The above figures are of course only an average; some growers will produce cotton for less and others will lose money even at 71 cents. Some will get by for less on some items, such as preparation of the land, and find costs of cultivation or picking mounting higher, so the figures, while representative of the averages of many

growers, will be found probably rather near the correct figure for the majority.

If they are correct then it is obvious that growers are justified in holding their cotton for higher prices. One factor of low prices this season is the low price of cotton seed. For the past few seasons the seed as a side line, or by-product, has been a source of considerable revenue, as the price has generally been around \$60 to \$70 per ton. This season the price offered is \$20.

The general industrial situation will of course influence the buyers to a very large degree. The tightening of money by the federal reserve bank has affected the automobile industry more seriously than probably any other single industry. The tire supply is to a somewhat lesser degree affected by anything which concerns the general automobile industry, and tire manufacturers at this particular time are uncertain what the demands are going to be in the next six, eight or 12 months. While most people are optimistic and believe that with a curtailment of certain activities, which will render the whole industry more stable, there will continue the unprecedented demand for tires and automobiles which has made this one of the leading industries of the country. With all their optimism there is an element of uncertainty and the manufacturers are disposed to go slow.

So far as one can see into the future it looks like a good gamble to hold on to cotton until after the first of the year, and possibly longer. Some growers can do this, but what of those who cannot? There are some who have made a crop on the "shoestring" plan who are strictly up against it. Some of these may be helped over the crisis by temporary advances, which are now being arranged through one of the cotton marketing associations. Others will sacrifice a portion of the crop at whatever the market offers and endeavor to hold the balance.

The situation is by no means discouraging. Above the clouds is a rainbow of promise. Throughout the cotton growing districts of the Southwest, and particularly in the Salt River Valley, there was too large an acreage in cotton in proportion to other crops. The uncertain condition of the market this season will result in a much larger acreage of grain and alfalfa this winter and next spring. More grain and more alfalfa means more dairy cows, more beef steers and more chickens and hogs. Smaller fields of cotton on every farm, and this on the soil best adapted, will mean heavier yields and consequently cheaper production. More cotton to the acre, but fewer acres, is the pot of gold at the foot of the rainbow.

DISTRIBUTION OF WATERS OF KINGS RIVER



THE first year's work on an interesting experiment in the handling of the water and its division among the great irrigating systems of Kings River has just been successfully concluded. The work was carried on by the state water commission under the supervision of Engineer Chas. L. Kaupke as water master. This method of regulating head gate divisions through the agency of a public officer, while new in California, has long been in use in other Western states.

It is to the credit of the water users along Kings River that they have had the initiative and courage to voluntarily adopt and apply this method to meet a most vexing problem. The various ditch companies and other owners of water rights first organized and agreed upon a tentative diversion schedule defining their respective rights and priorities. The state water commission was then asked to place one of its engineers in charge of the distribution of the water of the river among the various canals having legal rights to the water.

The work of the water master lay in adjusting the diversions to conform with the constant variation of flow in the river. These variations are caused principally by changes in the rate of snow melting due to temperature, and occur not only from day to day but from morning to night. To equitably distribute the water requires an intimate knowledge of the river

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throughout its whole course, as well as a high order of ability and a wide experience in adjusting the headgates up and down the river following the increasing and diminishing flow of the stream.

Under the old method each canal superintendent or engineer was responsible to the water users under his canal to see that their full supply was being diverted. Obviously such a method, while fairly satisfactory as long as water was plentiful, developed endless disputes and friction during low water stages, as well as involving very large expenditures for litigation in efforts to check against rival claimants. Large losses of water also occurred.

The problem of water distribution from natural streams is thus one in which the public is becoming more and more concerned. The state water commission, foreseeing the need of such supervision, in the 1917 session of the legislature introduced a bill for an amendment to the water commission act. This bill gave the commission authority to place water masters upon the large streams of the state, but the plan was then so little understood and in consequence met with such opposition that it was allowed to die on the files.

The Kings River system is one of the most important in the state, supplying water for an area of over 625,000 acres, and is one of the largest, if not the largest, of the irrigation streams in the country. Its length from the edge of the valley to Tulare Lake is 60 miles and to its juncture with the San Joaquin River, 90 miles. It supplies water to 20 large canals and to some 25 smaller ones, serving one of the richest and most diversified irrigated areas in the world. Among the principal canals are: Fresno Canal, supplying 190,000 acres; Consolidated System, 95,000 acres; Alta Irrigation District, 130,000 acres; People's Ditch, 75,000 acres; Last Chance Ditch, 37,000 acres; Lemoore Canal, 35,000 acres.

It is apparent that the control of the distribution of a water supply to such a large area is one of first importance to the people on the river as well as to the state at large. To successfully and satisfactorily carry this out requires constant observation of the stream flow, including continuous measurements at many points along its course. Legal priorities and definitions of rights must be observed and frequently these vary with the season of the year, adding complications to the problem. Add to these elements of the problem, seasonal variations, sudden hot spells that without warning send down from the mountains large increases in the flow that must be handled and put to use lest it spread to the lower levels and ruin thousands of acres of grain crops; summer thunder storms, as well as accidents to canals or headgates; and the job of keeping several thousand irrigators, normally suspicious of each other, reasonably satisfied; and it can be seen that the job of water master is one full of incident as well as hard work.

That the method is practical and can be successfully carried out has been demonstrated to the great satisfaction of the water users on one of our most important irrigating systems. That it will be eventually applied to all the other large rivers in the state is inevitable. Neither the people nor the state will endure the losses and waste of the old methods after such showing as is being made on the Kings River.

EXPORT APPLE OUTLOOK

With the inauguration of the all water transportation service from Seattle to Europe, and considering the report that England is nearly without apples, due to an unfavorable season, California Grade A and B, as well as the canned and dried fruit interests, should awaken to the possibilities. However, it should be taken into consideration that New Zealand and possibly Australia will be strong competitors for this business, and it is understood at this time that an arbitrary tax will be placed upon foreign apples in favor of the home grown English product.

It is reported from Sonoma County that many pickers of wine grapes are being paid \$5 per ton.

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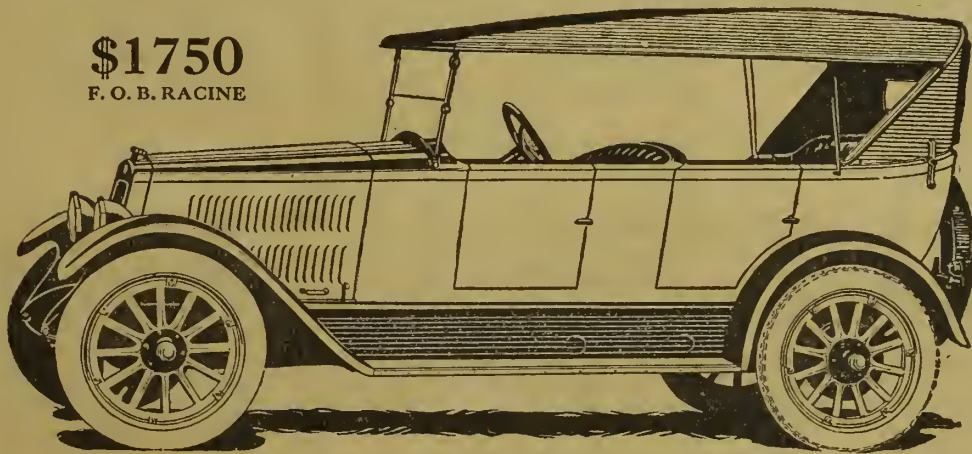
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Los Angeles Markets

Los Angeles, September 29, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 69 cents.

Dairy Exchange price last week on extras:

Sept.	22	23	24	27	28
'20	69	69	69	69	69

CHEESE

Brokers' prices:

California flats, 32@34.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 71 per dozen; case count Produce Exchange closing price 65 per dozen; pullets, Produce Exchange closing price 59 per dozen; pewee pullets, 47.

Dairy Exchange prices last week on extras:

Sept.	22	23	24	27	28
'20	68	69	70	70	71

POULTRY

Price to consumers: Hens, lt., 29; heavy, 32; colored, 35; broilers, 38@42; roasters, 38; old roosters, 14; fryers, 36; ducks, old, 23; ducklings, Pekin, 3½ up, 25; others 23; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47.

Belgian hares, live, 15@19; old, 9.

LIVESTOCK

Los Angeles, Sept. 28—Welghed and delivered off cars without food or water: Hogs (hard-grain): 125 to 175 lbs., 16.50; 175 to 225 lbs., 17.50.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, September 28, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, market steady. Local: Early and White Rose, fancy No. 1's, mostly 1.00 and 1.25 per lug; 100 lbs., sacked No. 1's, 2.25@2.50. Stocktons: Burbanks, quality, generally best, 3.00@3.25 sacked; few poorer low as 2.60. Sweet potatoes, lug, 1.25@1.40.

Onions: Stocktons: Whites 2.25@2.50 cwt.; Browns mostly 1.50@1.75 cwt.

Garlic, lb., 12@18.

VEGETABLES

These are the actual prices obtained September 28 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 8@10; Limas, 7@9.

Beets: Doz., 40@50.

Cabbage: Supplies moderate, market steady, movement good, wide range in quality. Best mostly 3 per lb.; per field crate, best 2.50@3.00.

Carrots: Doz., 35@45; sack, 1.25@1.50.

Celery: Doz. bunches, 80@1.00; cr., 3.00@3.75.

Corn: Local, best 1.35@1.50 per box.

Cucumbers: Market steady; local, best, lug, 1.00@1.25.

Egg Plant: Lb., 4@6.

Lettuce: Field crs., 1.00@1.25.

Peppers: Bells and Chilis, lb., 3@5.

Squash: Local summer, lugs, 75@1.10.

Hubbard, lb., 2½@3.

Tomatoes: Local lugs, best, mostly 50@75.

Turnips: Per doz., 35@50.

DECIDUOUS FRUITS

These are the actual prices obtained September 28 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal. Bushel boxes: Bellefleurs, 4-tier, 1.50@1.75; 4½ tier, 1.35@1.55. Local: Various varieties, 50@1.00 per lug; Jonathans, fancy large sizes, 3.00@3.25.

Bananas: Lb., 11@12.

Cantaloupes and Melons: Cantaloupes—Market steady, supplies moderate, quality and condition wide range. Local Tip-top and Paul Rose, pink meats, standard crates, best 2.00@2.25. Watermelons, lb., 1@1½.

Figs: Box, 1.00@1.25.

Grapes: Muscats, Malagas, 7@8; Tokays, 8@9; Cornichon, 8@9.

Peaches: Local, best, lug, 1.60@1.90.

Pears: Bartlett's, best, lb., local, mostly 6@8; Northern mostly, 8@10.

Prunes: Lb., 6@8.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 3.00@3.25; special packed brands, 3.75@4.25.

Lemons: Market dull, wide range in prices. Local stock: Packed, bx., 2.75@3.25; loose, 1.00@1.50; lug, mostly 50@60.

Oranges: Supplies moderate, market strong. Valencias: Packed special brands, 126's, 150's and 176's, 7.00@7.75. Local packed, second grade, 4.00; packing house culls, 75@1.50.

HONEY

U. S. bureau of markets: Movement limited, market unsettled, prices slightly lower account slump sugar market and financial stringency. Carloads f.o.b. usual terms: White Sage Orange, 18½@20. Extra light amber sage, 17½. Light amber sage, 16; light amber alfalfa, 15@17½; Becawax: 38@44.

BEANS

California Lima Bean Growers Association, September 20.

The association has not yet commenced to quote and sell new crop Limas and baby Limas. The current market as indicated by quotations of independent shippers has apparently shown a steady though not rapid decline during the past

two weeks and stands now on the basis of about 9 cents on regular Limas and 8½ on baby Limas, f.o.b. coast. The harvesting is proceeding quite rapidly under favorable weather conditions and will be completed earlier than usual if present favorable weather continues for two or three weeks longer.

GRAIN AND FEEDS

Grain Exch. prices bid Sept. 28:

Barley: Carlots, on track, 2.00@2.03½.

2.16½.

Milo: 2.85@3.17½.

Corn: Blk., Yellow, No. 2, 2.60.

56.00.

HAY

Alfalfa Growers of California, September 29:

The embargo against shipments of alfalfa to California on account of the weevil has been extended and is now applied against Utah, Idaho, parts of Wyoming and Washoe County, Nevada. This only leaves open shipments from Arizona, which state has this year but little, if any, surplus for shipment to other states. The speculative markets for wheat, corn, meats, lard, cotton, etc., have been declining for some time. The explanation is that this country produces a large surplus of the articles named, which surplus Europe needs badly and is anxious to buy, but has not the money to pay for, and our country is at present not in position to sell on credit to the necessary extent.

The situation is different in regard to production of milk and butter; of these the United States does not produce a surplus. On the contrary, there is a shortage, which in some centers is threatening to become acute, especially as regards milk. To increase the production sufficiently is a slow process; it is a matter of at least several years. The present export situation should therefore not affect the market for dairy products, and least of all out here where alfalfa is the principal dairy feed. The alfalfa production of the state is this year below normal in acreage and yield and provided the association has the adequate support of the alfalfa growers there is no reason why they should not get throughout the crop year the fair prices to which they are legitimately entitled. There were 1,000 tons of hay of all kinds received on the Los Angeles tracks the week ending September 25 and 250 tons held over as against 930 tons the week before.

Fancy dairy 57.00

No. 1 dairy alfalfa 31.00

Standard Dairy 27.00

Stock Alfalfa 23.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats 23.00@25.00

Barley 16.00@22.00

Alfalfa 25.00@27.00

Barley straw 8.00@10.00

San Francisco Markets

San Francisco, Sept. 28, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations:

Extras 66

Dairy Exchange prices extras this week and year ago:

Sept.	21	22	23	24	25
'20	68	66½	66½	66½	..
'19	..	..	63½	63	..

CHEESE

Dairy Exchange quotations:

Jack, full cream 23@26

Jack, half skimmed 17@20

Cal. Y. A. 36

Cal. Flats 37½

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 76

Extra Pullets 64½

Undersized 51½

Dairy Exchange prices, extras this week and year ago:

Sept.	21	22	23	24	25
'20	72½	74	76	74	..
'19	..	..	..	60½	..

POULTRY

Wholesale prices are:

Prices in this market remained unchanged Monday from those of Saturday. There was but light demand in all lines and heavy arrivals expected. According to merchants on Front Street there is every prospect of a break in prices shortly. Quotations:

Broilers, 15 pounds per dozen, 45@50.

Colored fryers—2 to 3 lbs., 38@40.

Colored young roosters (smooth), 3 to 4 lbs., 40; staggy, 25@27.

Old roosters (colored), 20@23; market firm.

Leghorn hens, 3 lbs. and over, 25@30.

Large colored hens, 38@40.

Young Pekin ducks, 25; old ducks, 23@25; young geese, 25; market easy.

Live Belgian hare, 20@22; dressed, 25@30; market firm.

Dressed Turkeys—Young, large, 60; market firm; fancy, 50@53; live turkeys, young, 45@50; old, 45@50.

Squabs—Large, 55@60 per lb., market firm.

Pigeons—3.00@4.00 per dozen; market firm.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1000 to 1200 lbs., 9@9½; do, 1200 to 1400 lbs., 8½@9; do, second quality, 7@7½; thin, 5½@6.

Cows and heifers: No. 1, 7½@8; second quality, 6@7; common to thin, 3@4.

Calves: Light weight, 10@11; medium, 8@9; heavy, 7@8.

Lambs: Milk, 9@10; yearlings, 7½@8.

Sheep: Wethers, 7@7½; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 15½; 150 to 225 lbs., 16½; 225 to 300 lbs., 16; 300 to 400 lbs., 15.

The California Farm Bureau Market-Association reports sales:

McFarland, September 13

No.	Av. Wt.	Dock	Price
59	162	...	\$15.50
46	197	...	13.90
10	184	...	14.90
81	184	...	14.85
85	185	...	14.80
87	208	...	14.75
70	195	...	14.75
11	287	100	13.90
59	128	...	12.65
41	337	500	10.95

Five cars, 22 consignors.

Tulare, September 14

90	189	...	15.05
88	198	20	14.95
12	205	...	14.90
31	192	120	14.75
75	230	...	14.70
50	150	...	13.75
10	175	...	10.55
6	198	...	14.50
37	293	1220	10.55

Five cars, 37 consignors.

Visalia, September 14

88	199	...	14.90
53	199	...	14.75
18	288	...	14.25
47	151	...	14.00
11	289	...	13.50

Three cars, 13 consignors.

Hanford, September 16

82	207	...	15.85
129	188	180	15.65
81	189	310	15.45
30	268	...	15.15
91	137	50	14.05
14	305	170	13.05
8	119	...	11.00

Five cars, 30 consignors.

Corcoran, September 17

50	193	...	16.20
6	218	...	15.95
5	392	100	13.70
2	170	...	15.20

One car, 6 consignors.

Turlock, September 21

73	202	...	\$15.55
5	270	...	15.05
72	160	...	14.00
13	360	...	12.00

Two cars, 30 consignors.

Madera, September 23

103	191	...	15.25
20	164	...	14.25
9	127	...	12.75
24	249	270	12.75

Two cars, 11 consignors.

Fresno, September 24

75	175	...	15.25
4	285	...	14.75
42	230	...	14.50
23	125	...	14.00
10	336	...	12.50
10	301	320	12.00
4	210	...	6.00

HIDES

Hides: No. 1 heavy, 55 lbs. up, 15 per lb.; medium, 45 to 55 lbs., 15c; light, 30 to 45 lbs., 15c; native bulls, 12c; center

branded hides in all grades 2c less base price and No. 2 center branded 3c less.

No. 1 wet salt kip, 15 to 30 lbs., 16c; No. 2 do, 15 to 30 lbs., 14c; No. 1 wet salt calf, trimmed, 24c; and do, untrimmed, 19c; No. 2 calf, 2c lb. less. The price of No. 2 hides will be 1c less than the price of No. 1.

No. 1 dry, 16 lbs. and up, 25c; kip, 7 to 15 lbs., 26c; calf, under 7 lbs., 28c; dry stags and bulls, one-third less than dry hides; dry glue hides, kip and calf, one-third price or less, according to quality; pickled hides and skins, 3c less than dry flint; dry salted hides and skins, 9c less than dry flint.

Pelts: Long wool, 9 to 12 months, 1.50 up; medium, 6 to 9, 75@1.25; short, 3 to 6, 40@70; shearings, good, 1 to 3, 10@15; do, shaved or damaged, up to 10c; lambs, large, long wool, 50c up; lambs, small, 15@30; milk lambs, 5@15.

POTATOES AND ONIONS

Potatoes, per cental: Delta, 2.00@2.75; choice, 2.75@3.00; sweets, 4@4½ lb. for No. 1.

Onions: Fancy, 1.00@1.20; yellows, 90@1.00 cwt.; brown, 1.00@1.15.

Garlic, new, 6@7.

VEGETABLES

Wholesale selling price:

Artichokes: Doz., 25@1.00.

Beans: Lb., String, 5@10; Lima, 12@14.

Carrots: Lb., 2.

Cucumbers: Lug, 1.00@1.25.

Cabbage: Lb., 1@2.

Celery: Doz., 30@40.

AT THE AUCTIONS

September 22
New York: 8 or., 2 lem. Val. 4.85-9.75, lem. 1.65-3.10.
Boston: 5 or., 1 lem. Val. 3.70-7.80, lem. 2.35-2.75.
Cleveland: 1 or., 1 lem. Val. 6.65, lem. 2.35-2.65.
St. Louis: 2 or., 1 lem. Val. 5.70-6.75, lem. 2.65-3.00.
September 23
New York: 16 or., 1 lem. Val. 3.50-10.40, lem. 1.75-3.65.
Boston: 4 or., 1 grapefruit, 1 lem. Val. 5.45-7.90, grapefruit halves 1.35-1.40, lem. 3.00-3.35.
Pittsburg: 2 or., 1 lem. Val. 5.10-6.60, lem. 95-1.50.
St. Louis: 1 or., 1 lem. Val. 5.05-6.50, lem. 2.45-2.80.
September 24
New York: 11 or., 1 lem. Val. 4.10-11.00, lem. 2.15-3.75.
Boston: 3 or., 1 lem. Val. 4.70-7.50, lem. 2.70.
St. Louis: 2 or., 2 lem. Val. 4.05-6.65, lem. 1.85-3.15.
September 27
New York: 19 or., 5 lem. Val. 3.15-10.90, lem. 1.85-3.65.
Boston: 8 or., 2 lem. Val. 3.40-7.00, lem. 1.20-3.90.
Philadelphia: 6 or., 2 lem. Val. 4.60-8.20, lem. 2.15-3.55.
Cincinnati: 2 or., 1 lem. Val. 4.45-7.45, lem. 3.70.
September 28
New York: 14 or., 2 lem. Val. 3.90-11.15, lem. 1.45-2.85.
Boston: 6 or., 2 lem. Val. 2.95-7.00, lem. 1.20-4.05.
Philadelphia: 3 or., 1 lem. Val. 4.20-8.20, lem. 1.20-2.95.

Veterinary

Corns on Horses' Feet

Is there an effective cure for corns on horses' feet?—Subscriber, Lindsay.
Since there is a very great difference in causes of corns, it is somewhat difficult to recommend treatment. The cause should first be determined and that cause removed. Sometimes a change in the method of shoeing may be desirable, although it is not advisable as a general practice to make a sudden change in the method of shoeing. If the corns are chronic a poultice might help to soften the affected part, after which it can be cut out. Care should be taken, however, not to injure the soft tissues of the foot. Some corns can be cut out, after which the foot should be poulticed if it is inflamed badly. If the case is serious and requires much of an operation, it would be advisable to consult a veterinarian who could determine the most effective means of treatment.—G. E. G.

Slobbers

Please give treatment for horse that slobbers on her hay. Had her teeth attended to few months ago, one pulled. She is 12 years old, constantly losing flesh and hair seems very coarse.—Subscriber, Calistoga.

Slobbers is often caused by bad teeth, but as you say you have just had this mare's teeth put in good order, that would not seem to be the trouble in this case. Feed of various kinds will sometimes cause slobbering. A change of feed might remedy the difficulty, as will washing out the mouth with alum water. If a change is not observed in a short time give a dose of eight teaspoons powdered aloes, one teaspoon common soda and one teaspoon ginger. This should be dissolved in a pint of warm water and given as a drench. This remedy will probably give good results.—G. E. G.

Eyes Watering

Six year old mare seems well, takes on flesh easily and keeps in good shape but tears run from both eyes all the time and form crusts. Have had her teeth examined, thinking she had blind teeth, but was told that her teeth are in good shape.—Subscriber, Eureka.

This would indicate inflammation of the external part of the eye. It may also indicate some trouble in the lachrymal apparatus which would interfere with the ducts leading from the eye to the nose. If the eyelids do not show inflammation or swelling it would be well to examine the lachrymal ducts. This may be remedied by sponging out the eye with a sponge or soft rag with warm boracic acid solution. You might also drop a five or ten per cent solution of argyrol in the corner of the eye if it can be applied. Another remedy which some-

times gets good results is to feed warm mash of wheat bran in a nose bag so that the relaxing effects of the water vapor may reach the lachrymal ducts. Sometimes it is necessary to have a veterinarian open up the ducts with a silver probe, but this should never be attempted by anyone other than an experienced veterinarian. Diseased teeth may also cause troubles of this kind.—G. E. G.

YOUNG CITRUS ORCHARDS

During a recent lecture on soils Prof. J. W. Nelson was asked what he would do with the soil in a newly planted orange orchard. He said: "I would keep the root tendency downward in the younger days when only tree growth is taking place and keep the soil stirred as deeply as I could. Then work more lightly or shallowly as years go on, after a time disking instead of plowing. But heavy soils must be aerated and some plowing must be done. Treat light soils with compost if available and turn cover crops under when young and tender. In heavy soils you may leave cover crops until they are older and more more fibrous, for they decompose more quickly in heavy soils. But in light soils mature fibrous growth holds the soil too open; tender growth packs closely and decomposes quickly.

"Get your tree roots down in the early days, for the nearer roots are to the surface the more easily and quickly are they affected by all surface or exterior conditions. It has been found that surface soil at 130 degrees is 30 degrees hotter than that just below and that soil below a summer cover crop is that much cooler than surrounding bare soil. Summer cover cropping should be practiced wherever possible, for with a winter crop only many orchard soils are not being improved. Summer cultivation burns out, by oxidation, all that is gained by turning under in spring and the humus content of your soil is not amended.

"I know of an orchard at San Bernardino, previously in poor condition, that had been plowed deeply and cultivated much, without improvement. For seven years it has been double cropped, whereas previously but the one or winter cover crop was grown. During these later years this orchard has gained 12 to 15 tons per acre in humus content, which means eight times that much in water holding capacity. No plowing has been done during the seven years, but disking three to five inches deep has been the practice. A nearby orchard with but winter crops is still in poor condition through plowing and cultivation. The benefits of winter crops have been lost by gas through burning in summer. If enough nitrogen is present in the soil you may use a non-leguminous summer crop; it is the humus you need. One pound of growing crop requires 600 to 800 pounds of water,

therefore keep weeds from growing. For that reason watch your cover crop. If it is using up too much soil moisture or you are short of water, turn the cover crop under. Always sacrifice the cover for the good of the tree whenever low moisture content demands a change."—E. B.

NOT SAN JOSE

San Jose scale has had a habit of causing a slight red spot surrounding its point of location on apples, pears and other fruits, hence many have jumped to the conclusion that a tiny red spot indicated scale infestation. This is not always correct, as was stated in circular letter sent out by state department of agriculture in effect that apples affected with blemishes referred to by various growers and shippers as sun spots or aphids "stings," but which closely resemble the red spot commonly associated with San Jose scale infection, should not be confused with the latter. These red spots are entirely superficial, amounting to nothing more than a red discoloration, and are properly admitted to the California "B" Grade.

This condition is quite prevalent in the Watsonville district this season, hence this notice.

FOR BETTER CALIFORNIA POTATOES

Without good seed no permanent success can be expected and production of good seed is coming to be an industry in itself. Not only does it pay in increased production for home use but the market for this kind of stock is becoming better every year as growers of commercial potatoes throughout the state are recognizing the absolute necessity of better seed if they are to secure profitable yields.

It is impossible for anyone to determine by merely looking at potato tubers whether they will make good seed or not, as they may carry disease or be inferior in producing power without the tubers giving indication of this. It is, therefore, necessary to inspect the plants in the fields where they are growing in order to determine their productiveness, freedom from disease and general fitness for seed purposes. Because of this fact the state department of agriculture has established a system of seed potato inspection which makes it possible for any grower to have his fields inspected, and if his crop comes up to the required standard for good seed he can get a certificate to this effect and sell his crop as California certi-

fied seed potatoes. A tag is placed upon every sack of such potatoes so that everyone purchasing them can know what he is getting. Full particulars regarding this inspection work can be obtained by writing the state department of agriculture at Sacramento.

FLORIDA ENDORSES CALIFORNIA FUMIGATION PROCEDURE

Professor Wilmon Newell, plant commissioner of Florida, writes the state department of agriculture:

"We are in hearty sympathy with your views on the fumigation and cleaning of railroad cars used in the transportation of plant products. As you doubtless know, the federal horticultural board already has provided for the cleaning of cars used in transporting cotton or cotton seed in areas exposed to danger of infestation by the pink bollworm. We have been trying to do something along this line in connection with fruit cars here in Florida, although this work has been purely cooperative and no regulations covering it have been adopted. We have had the matter up with the principal refrigerator car companies and have arranged for the sanitary disposition of cleanings from the cars at the principal icing plants. If our funds permitted, we would like to go very much farther than this, however, in this direction."

PLAINLY A PERSONAGE

"I don't know who that solemn guy over there is, but I'll betcha he's somebody important," whispered Heloise of the rapid fire restaurant.

"What makes you think so?" returned Claudine of the same establishment. "He never says anything about it, does he?"

"No; but, my gosh, he can actually look dignified while eating spaghetti!"

REAL PLEASURE

"Did your wife enjoy the book I sent her to read?"

"Did she? Had the time of her life. Cried herself sick over it."

WEATHER REPORT

Stations	Rainfall			Temp.	
	Wk.	Season	Norm.	Max.	Min.
Eureka	1.18	2.85	1.02	66	48
Red Bluff	.04	.35	.57	80	46
Sacramento	.01	.01	.25	80	48
San Francisco	.12	.13	.18	68	53
San Jose	.02	.02	.28	76	42
Fresno		.14	.13	90	50
San Luis Obispo	T	T	.35	88	48
Los Angeles	.02	.02	.01	88	56
San Diego	.02	.02	.01	78	54

MERRITT-BOWERS CO.

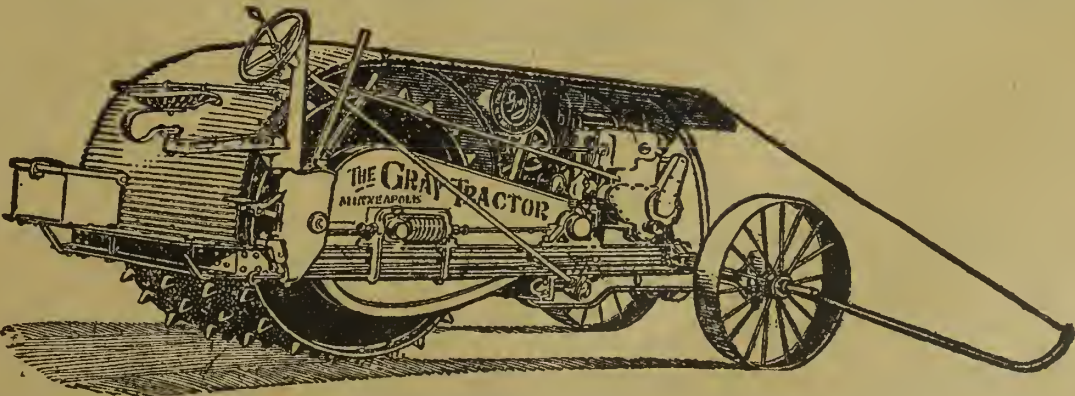
TAGUS RANCH

TULARE, CAL.

Will Show Their Big String of Horses at the Los Angeles Livestock Show.

Everyone welcome at their Barn Number 3.

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An 80 Acre a Day Triumph, with Many Years Successful Operation Throughout the Middle West, Canada and European Countries

Will Be On Exhibition and Will Demonstrate at THE FRESNO FAIR, Oct. 1-2

Mr. John Hughes and other representatives of the GRAY TRACTOR will be glad to meet those who are interested in buying a GRAY TRACTOR, or in securing the agency for its sale. Headquarters, Fresno Hotel, and at Sacramento, Travelers Hotel, October 5-6-7.

CATALOG ON REQUEST

THE GRAY TRACTOR CO.

The Gray Tractor is especially adapted to open farming operations on large acreages. With a Gray Tractor grain farmers can disk and harrow 80 acres a day in one operation, one man handling the tractor and implements, as well as performing all other tractor operations.

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"the genuine **GIANT**
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"I remember well when we used black powder for stump blasting and mining. Just after the Civil War the first Giant Powder ever made in the United States was manufactured in a little laboratory in what is now Golden Gate park.

"Out of that beginning has grown The Giant Powder Co., Con., with its chain of great plants and magazine stocks throughout the entire West. And the Giant Farm Powders are being used for stump blasting, boulder blasting, tree planting, etc., by thousands of Western land owners. Giant Powders have always been so popular that some people have thought any ordinary dynamite was Giant Powder, but that is wrong. The only way to get Giant economy and efficiency is to get the genuine Giant Powders made by the originators of the name."

Just tell us "send me your book," and we will mail you our valuable guide to blasting, "Better Farming with Giant Farm Powders."

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STUMPING

FARM POWDERS

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This is the day and age when you should make every foot of land produce profits for you. If you have any size tract ranging from 80 to 5,000 acres in the Western States that need development you should send for this book at once. It tells you the way to develop your property through the use of Hydro-Electric plants, gravity irrigation systems, pumping plants, grading, and buildings; in fact, it points out the various essentials that are necessary to make your ranch a producing property. Now is the time to act, so that you can get a crop from your land next year. It is a certainty that crops will bring good prices next year, so take advantage of this condition and get your land under cultivation now. Write today, stating location of land and number of acres.

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THE AMERICAN

New Field for Poultrymen in the Southwest

By M. E. Bemis

Recent investigations and experiences of breeders indicate that there is a practically new and undeveloped field for poultry breeders in the extreme southwestern part of the United States. D. M. Green of the United States department of agriculture has been located in Phoenix, Arizona, for the past few months, planning the work for some government experiments to be conducted at the government plant west of Glendale in the Salt River Valley. He recently stated that it was his belief that owing to the long growing season, the very mild winters, dry climate and the ability to produce green feed the year round, poultrymen here have an opportunity to produce breeding stock which may be sold to Eastern breeders to great advantage.

In the East it is a commonly accepted idea that spring hatched pul-

say, they have known that pullets here did make good producers and the progeny were stronger in vitality and in turn produced better stock. Perhaps we have not thought of this as being a factor that could be commercialized. We have found in the last few years that stock produced here, when shipped to other sections stands comparison in the big shows remarkably well. This has been particularly true in the case of Rhode Island Whites and Rhode Island Reds. Two of our breeders of Rhode Island Reds have won notable honors from some of the larger shows outside of Arizona. Several of our breeders of Rhode Island Whites have also met strong competition in the Middle West and have come back with the blue ribbons.

When we come to think of it, there is no reason why the same climatic condition which gives rosy cheeks to

POULTRYMAN'S CALENDAR—OCTOBER, THE PULLET MONTH

October ought to be sacred to the pullets, for much depends on getting them started at the real business of their life in good time. They should be in the laying house by September. On many ranches they go from the brooder house to the laying houses; on others they spend some time in colony coops. However the intervening time is spent it is essential that by October they be at home in the laying house and receiving the full laying ration of mash, grain and greens.

Early pullets may be kept from fall molting by a conditioning mash containing a good deal of corn meal middlings, and, if they are obtainable, ground oats, for the pullet must have surplus fat on her body to keep her laying through the fall. If there is no surplus she stops laying and goes into the molt.

Sanitation must receive adequate attention, especially in the pullet houses. Keep mites away at any cost. Remove droppings daily if possible. Don't overcrowd. Ventilate as carefully as you would for your own family. Don't skimp the green feed.—J. A. K.

lets do not make the best of breeders. This is largely due to the fact that "spring hatch" throughout a great portion of the country means those that are hatched the latter part of March, in April or in May. Here in the Southwest, particularly in Southern Arizona and Southern California, the bulk of the hatching is done in January and February. February is perhaps the ideal month of the entire season. Poultry hatched in February reaches maturity just about the time cooler weather comes and they are ready to begin laying and have laid out their first litters before the breeding season, hence they are in the pink of condition for the breeding pen. Our successful poultrymen have realized this in a general sort of way, that is to

the growing boys and girls or brings back health to the sick, should not be just as potent to produce health and vitality in the animals and fowls. Breeders of dairy cattle who have brought in stock from a distance have almost invariably noticed that the succeeding generation shows larger frame and greater vitality than the imported stock.

Poultrymen generally have come to accept the fact that green feed is one of the very important essentials in the production of healthy poultry and the maintenance of health in the flock. Here where we have 12 months growing season, green feed is not the difficult thing to obtain that it is in the East, where it is necessary to sprout oats for five months in the year.

National Egg Laying Contest

By T. W. Noland

The 300 hens in the egg laying contest at Mountain Grove, Missouri, laid 4,510 eggs during August, or an average of 15.03 eggs per bird. Pen 43, S. C. Reds, owned by W. A. Magruder, Whiteside, Missouri, won the cup for August with a record of 117 eggs. The average production was the highest for the month of August during the nine contests held by the station. The weather being unusually cool during the month helped in the way of egg production.

All flocks that have not been culled during July and August should be gone over now. All specimens that show by the various tests that they have not been good layers should be disposed of on the market or consumed at home. Don't sell to your neighbors or someone else the hens that are not good enough for you to keep. Don't neglect to feed your hens during the molting period just as well as during the heavy laying season. Feed is necessary for the growth of feathers as well as for the production of eggs.

Ten Leading Pens for August

S. C. Reds, Missouri, 117 eggs; S. C. White Leghorns, 111; White Rocks, Idaho, 106; S. C. White Leghorns, New Jersey, 105; S. C. White Leghorns, Missouri, 104; S. C. White Leghorns, Missouri, 102; S. C. White Leghorns, Missouri, 102; Barred Rocks, Illinois, 101; R. I. Whites, Missouri, 99; R. C. Brown Leghorns, Kansas, 97.

Ten Leading Pens to Date

Barred Rocks, New York, 1,057 eggs; S. C. Reds, Missouri, 1,038; S. C. Leghorns, England, 1,029; White Wyandottes, Missouri, 1,023; S. C. Reds, Missouri, 1,011; S. C. Leghorns, New Jersey, 1,003; S. C. Reds, Alabama, 988; S. C. White Leghorns, 985; S. C. Leghorns, Missouri, 985; R. I. Whites, Missouri, 982.

Five Leading Individuals to Date

S. C. Red, Missouri, 257 eggs; S. C. Red, Missouri, 240; Barred Rock, New York, 237; White Rock, Idaho, 228; S. C. White Leghorn, England, 228; White Wyandotte, Missouri, 228.

AMERICAN EGG LAYING CONTEST

By Russell F. Palmer

Report for August, 1920, American Egg Laying Contest at Leavenworth, Kansas:

Ten Highest Pens for Ten Months

S. C. W. Leghorns, Pennsylvania, 1,088 eggs; S. C. W. Leghorns, Texas, 1,027; R. C. R. I. Whites, Kentucky, 1,026; S. C. W. Leghorns, Kansas, 1,020; S. C. W. Leghorns, Iowa, 1,018; White Wyandottes, Pennsylvania, 969; S. C. W. Leghorns, Washington, 958; S. C. White Leghorns, England, 955; S. C. Reds, New York, 951; S. C. W. Leghorns, Illinois, 947.

Ten Highest Pens for August

S. C. W. Leghorns, Texas, 123;



Men Who Know Don't Take Chances

It's the inexperienced man who hangs on to a penny in one pocket while dollars are slipping out of the other. Don't gamble with poultry. Learn more about our famous

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Just send us your name and address and we will send you our Free Catalogue giving you detailed information that is most interesting and valuable to any poultry raiser.

Dept. B-1

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FARMS
AUSTIN-MINN.**

SEED FOR SALE

FROM THE FAMOUS

Hull-less Barley

Of the McNeely Ranch

Big Crop, High Food Value, and an Especially Desirable Chicken Food

Having successfully demonstrated the productive and food value of Hull-less Barley, we offer choice seed for sale at \$6.00 per bushel. It is acclimated, grows rapidly, producing from 30 to 50 bushels per acre in Tulare County. Poultrymen say it is excellent chicken feed because of absence of hulls. Small orders accepted. Dealers will find this seed in big demand. Farmers putting out small acreages will find it a ready seller for seeding purposes.

Chas. McNeely

Alpaugh, Cal.

FOR GREATER EGG PRODUCTION
FEED
COULSON'S EGG FOOD
FULL PARTICULARS IN OUR FREE BOOK
"CHICKENS FROM SHELL TO MARKET"
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PETALUMA, CAL.

CARBO STEEL POSTS
Self aligning
TENSION FENCING SYSTEM
10 Times Strongest, No Breaking, Buckling Etc.
Half the Cost — No Concrete
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White Wyandottes, Canada, 118; S. C. W. Leghorns, Pennsylvania, 117; S. C. W. Leghorns, Michigan, 114; S. C. Reds, New York, 112; S. C. Reds, Nebraska, 108; S. C. Reds, Missouri, 107; S. C. W. Leghorns, Nebraska, 104; S. C. W. Leghorns, Washington, 104; White Wyandottes, Illinois, 104.

Breed Leader to Date

Brown Leghorn, 176; White Leghorn, 227; Ancona, 178; White Plymouth Rock, 179; Barred Plymouth Rock, 203; S. C. R. I. Reds, 212; Rhode Island Whites, 241; White Orpingtons, 204; Partridge Wyandottes, 180; White Wyandottes, 217.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

Santa Cruz, September 18:

The end of the 44th week of the contest finds Bellows Bros. in first place, with a total count of 1,854 eggs for their ten hens. S. L. Gibson of Santa Cruz caught up with B. F. Rose of Santa Cruz, tying him for fourth place.

High pens stand as follows: Bellows, 1,854 eggs; Walls, 1,841; Gibson, 1,806; Rose, 1,794; Gibson, 1,794; Enterprise, 1,787; Neef, 1,782; Barker, 1,748; Wood, 1,709.

High pens for the week: Bellows, 40 eggs; Neef, 35; Gibson, 34; Stalling, 31; Romig, 31; Lehman, 30; Enterprise, 30.

THE POULTRY SHOW AT LOS ANGELES

E. I. Hammond of Riverside, in charge of the poultry, rabbit and pigeon department at the Los Angeles Livestock Show, reports entries having been received from more than 200 exhibitors.

The poultry show will receive birds on October 4; judging will begin at 10 a. m. on Wednesday, October 5. It is expected that many of the displays will remain in place until October 10, closing day of the Livestock Show.

The junior exhibits will be in charge of Andrew M. Stodel, 2018 Magholia Avenue, Los Angeles. Junior prizes range from \$1.50 to 25 cents.

SINCERITY IN LOWER ANIMALS

The conspicuousness of the will in the lower order of animals explains the delight we take in dogs, apes, cats, etc.; it is the entirely naive way in which they express themselves that gives us so much pleasure.

The sight of any free animal going about its business undisturbed, seeking its food or looking after its young, or mixing in the company of its kind, all the time being exactly what it ought to be and can be—what a strange pleasure it gives us! Even if it is only a bird, I can watch it for a long time with delight; or a water rat, or a hedgehog; or, better still, a weasel, a deer or a stag. The main reason we take so much pleasure in looking at animals is that we like to see our own nature in such a simplified form. There is only one mendacious being in the world, and that is man. Every other is true and sincere, and makes no attempt to conceal what it is, expressing its feelings just as they are.—Schopenhauer.

CATS HOLD CITY OFFICES

Owing to the large number of rats that have appeared in Paris since the war, the city government has employed "official cats" to keep the city offices and museums free from rodents. Their pay is not munificent, about \$2.50 a year, in food—but then, no new classes of labor who break into the industrial field are ever highly paid at the start. So what can a cat expect?

These cats earn their salaries. The city is overrun with rats and the war has sadly depleted the cat ranks. Possible means of eliminating the rats have been discussed by officials, but as yet no effective plan has been adopted to keep down their increase. Officials of the American Red Cross on duty in Paris have investigated the matter and have come to the conclusion that about the only adequate rat ratchers have been the cats, but that the cat forces are greatly outnumbered by their hereditary enemies.



End the Monotonous Grind!

G-E Motors Save Both Time and Labor!

FREE yourself from hard tasks by putting G-E motors on the farm.

A one horse-power G-E motor can do the work of six good farm "huskies"—no need of "fine figuring" to see the dollars saved when motors replace men!

For further particulars, consult your lighting company, or write our nearest office.

General Electric Company
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KROGH PUMP AND MACHINERY COMPANY

147-159 Beale St., San Francisco, Cal.

Krogh Pumps Are Absolutely Water Balanced
No End Thrust Possible

No Set Collars Used

The No Trouble Pump



Krogh Direct Motor Driven Pump

Fitted With Ring Oiling Bearings
Renewable Bab-bitted Bushings
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We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.



CRESY-LOL

For Healthy Chickens and More Profit

Cresylol is a coal-tar preparation five to six times stronger than carbolic acid for killing germs, yet it is not poisonous. Mix one part Cresylol with fifty parts water, and spray chicken pens, nests and floors. Healthy hens naturally lay eggs. Keep your flock healthy by frequent spraying. One gallon, \$1.75; five gallons, \$7.50. At your store.

Arthur R. Maas, Chemist 308 E. Eighth St., Los Angeles

GLOBE "A1" FEEDS

— Judge them on Business Principles! —

FEED FOR SWINE, STOCK AND POULTRY

ASK YOUR DEALER



Growing up with COLGATE'S contest!

At least one of the stores in your neighborhood will have a window display of Colgate's Ribbon Dental Cream. These windows will be ready to photograph beginning October 1st.

Anyone not over seventeen years of age may try for generous money prizes, which will be given for the best photographs of a Colgate display.

\$1005.00 in Prizes

Look for a store window with the Colgate pictures and packages in it. The dealer will gladly let you take a picture of his window.

Look on the back covers of some of the October magazines where you will find all the rules of the contest. Or write to Colgate & Co., Dept. 48 199 Fulton Street, New York, for particulars.

Ask an older friend who takes pictures or the man from whom you buy films to advise you how to photograph windows. Taking pictures through plate glass is a tricky operation and one that you may never have tried before.

And let parents remember, too, that by encouraging the boys and girls to enter this unique contest, there is not only added zest to Kodak-ing, but a fresh interest in the importance of brushing the teeth regularly, night and morning. The delicious flavor of Ribbon Dental Cream is an important help in forming that habit for health.

Colgate's—the safe dentifrice—is indorsed by more dentists than any other dentifrice.

115 CASH PRIZES

Enter your photographs in the contest, for which prizes will be awarded as follows:

For the best photograph . . . \$100

For the 3 next best . . . \$50 each

For the 10 next best . . . \$25 each

For the 101 next best . . . \$5 each

Prizes will be awarded before January 1st, and winners will be announced in an early 1921 issue of this magazine. In case of a tie, each will receive the full value of the prize tied for.

Household Department

ROMANCE IN THE CITY

God opens doors to those who knock,
He sends His dreams to those who pray
For some romance the while they toil
In dingy offices all day.
When fog hangs over London town,
And City streets are cold and gray.

Each Bill of Lading's a romance
To make me dream of Eastern seas,
Of towns with strangely sounding names,
Of shining harbors, sun-bathed quays;
I picture grave-faced merchant-men
In dim bazaars as consignees.

I write the vessel's name and port,
And lo! her halliards sing to me.
I am on board and Eastward bound
For Smyrna and Gallipoli,
Thro' archipelagoes that gleam
Like opals on a sapphire sea.

I see the goods I invoice home'd
In palaces of dusky kings,
In corridors all pearl and gold,
In courtyards full of splendid things,
Where slave-girls dance, magnificent
Beyond a man's imaginings.

When fog comes down on London town,
And City streets are cold and gray,
God opens doors to those who knock,
And sends romance to those who pray
For warmth and color, while they toil
In dingy offices all day.—G. E. M.

DRESSMAKING

By Elia W. Peattie in Youth's Companion



LEILA PRIOR'S best aunt, Mrs. Whittaker Browne, had just sent Leila a scholarship at Fairfield. Mrs. Browne was Leila's best aunt not because she had more noble qualities than Leila's other aunts. She was "best" in the sense that a "best dress" is best—because she was associated with holidays and was less comfortable and more awe inspiring. She wrote:

"I owe much that I am in life, my dear niece, to dear St. Mary's, and in sending you this scholarship for four years I feel that I am showing not only my affection for you but my appreciation of my school as well. You will notice that the scholarship includes your residence at Higby Hall and your board at the commons. I have stipulated that you shall have the room that I myself occupied, and I sincerely hope and believe that it will be for you, as it was for me, the beginning of a larger and more genial life than I could have enjoyed in the little town where your father and I were born, and where he, unfortunately, still lives.

"Having no daughters of my own, I naturally take an interest in my brother's girl; he, I suspect, is largely concerned with his boys. I want you not only to acquire a higher education in advanced branches of study but also to have the opportunity of forming your friendships among young people of the finest quality. Your excellent mother will no doubt see the matter as I do. Give my regards to her and to your father, and believe me to be, as always,

"Your loving aunt,
Isabel Prior Browne."

"How like Isabel!" said Mr. Prior, when he had read his sister's letter. "So kind—and autocratic."

"Very kind, certainly," faltered his wife. "And of course it would never do to refuse."

"Why should you refuse? Isabel has covered everything: tuition, lodging, board—"

"But not clothes," said Mrs. Prior. "Clothes! Well, I should hope not. We can afford to clothe our own daughter, I hope."

"Yes," said Mrs. Prior, pensively. Her head drooped a little.

"Leila always has been properly clothed, I believe," continued Mr. Prior in a challenging manner.

"Oh, yes. Yes, Thomas, she has."

"For goodness' sake, Florence, come out and say what you have to say. My sister is doing for Leila precisely what we wished to do, and what we would have done if both of her brothers had not been in college at once. Dick was saying the other day that it seemed an outrage that, although Leila was the best student in the family, she should have to put up with the schools we have in this little town, while he and Fred went away."

"Well," said Mrs. Prior, poking at the fire nervously, "of course Leila has been properly clothed, as you say, but fitting her out for boarding school is a very different matter from making

her tidy at home. Two good winter dresses, a jacket and a coat, some home things, and a hat or two that I furnished up myself, did very well here at home."

"She doesn't go away to school to show off her clothes. I never heard you take such a tone before, Florence, and I can't understand it. The girl hasn't a vain hair in her head."

"Oh, yes, I have, dad!" Leila called from the other room. "I'm vain of not being vain. And the reason I'm not vain is because there's so little for my vanity to feed on."

She came in, laughing, and her father looked lovingly at the small, dark face of his daughter—a face, he had to admit, that had little claim to prettiness. Yet the eyes, at once bright and soft, the sensitive mouth, the little rounded chin and the low, broad brow, with its soft, enfolding hair, were very bonny. Everyone who looked at her face felt its kindness and breeding. Coming over to her father, she seated herself on the arm of his chair. She knew that he would slip his arm round her, and that she could then comfortably bend over him until her cheek touched his hair.

"Mother is right," she said solemnly. "I shall have to have clothes."

He laughed easily. "To hear you speak anyone would think that court robes were required."

"No, only simple things: a street suit, a cloak, two school dresses, three dinner dresses, one evening party frock, two sweaters, six shirt waists, two hats, four pairs of gloves, some furs, a gymnasium suit, a skating skirt, a riding habit, underclothes for cold, medium and warm weather, a negligee or two, a warm woolen wrapper, shoes, slippers, veils, overshoes and an umbrella. Otherwise I shall need nothing. The school is noted for its simplicity. The prospectus says so."

Mr. Prior had some trouble not to look dismayed.

"But you must have many of those things," he said to Leila. "Surely, Florence," he added, turning to his wife, "the girl has something to start on?"

But Mrs. Prior was not encouraging.

"Well, I managed to make a neat school dress for her out of my old blue serge," she said gently. "And I got a new blue silk for her for best. She has her last winter's coat, and of course enough necessary clothing to keep neat and clean." She smiled rather ruefully. "But I'm sorry to say keeping neat and clean isn't enough; is it, Leila?"

"You couldn't buy my outfit," said Leila, shaking her head, "under \$300. I've reckoned it up. Of course you can't afford that, dad darling, after all you've done for the boys. I'll write Aunt Isabel the best letter of thanks she ever had, and we'll forget the whole thing."

"I suppose," he said, "that you'd like to go, daughter?"

(Continued next week.)

MAGIC OF MILK

Here are some interesting recipes taken from "Magic of Milk," put out by the National Dairy Council to encourage larger use of milk:

Popovers

1 cup flour ¼ teaspoon salt, ¾ cup milk, 2 eggs, ½ teaspoon melted butter. Beat eggs thoroughly. Add gradually, while beating, milk and flour to which salt has been added. Add butter and beat two minutes with Dover egg beater. Put half teaspoon butter in hissing hot iron gem pans. Fill half with batter and bake 30 minutes in hot oven. Serve immediately.

Sour Milk Biscuits

1 quart flour, 1 teaspoon soda, 1 teaspoon salt, 1 teaspoon sugar, 2 tablespoons butter, sour milk to moisten

Ironing Comfort

You know you ought to help the good wife to keep cool these hot days by purchasing the Imperial Self-Heating Iron. No running back and forth from the hot stove with the Imperial, because it makes its own gas from ordinary gasoline. Absolutely safe and guaranteed.

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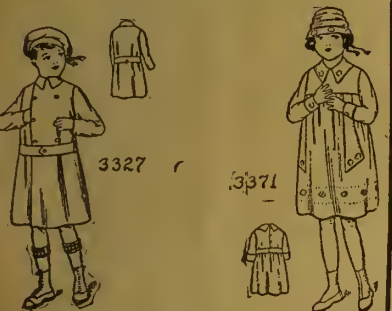
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The Cultivator Patterns



BE SURE TO SEND SIZE

3120. A Smart Coat Dress—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 will require $4\frac{1}{2}$ yards of 44 inch material. Width of dress at lower edge is about $1\frac{1}{2}$ yard. Price, 10 cents.

3372. Girl's Dress—Cut in 4 sizes: 8, 10, 12 and 14 years. A 10 year size will require $3\frac{3}{4}$ yards of 36 inch material. Price, 10 cents.

3360. Ladies' Dress—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require $6\frac{1}{4}$ yards of 36 inch material. The width of the skirt at lower edge as about $1\frac{1}{2}$ yard. Price, 10 cents.

3327. Boy's Overcoat—Cut in 5 sizes: 6, 8, 10, 12 and 14 years. A 12 year size will require about $4\frac{1}{4}$ yards of 40 inch material. Price, 10 cents.

3330. Ladies' Coat—Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. A Medium size will require $4\frac{1}{4}$ yards of 48 inch material. Price, 10 cents.

3092. Girl's Dress—Cut in 4 sizes: 6, 8, 10 and 12 years. Size 10 requires $3\frac{3}{4}$ yards of 44 inch material. Price, 10 cents.

3348. A "Cover All" Apron—Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. A Medium size requires $4\frac{1}{4}$ yards of 36 inch material. Price, ten cents.

3371. Child's Dress—Cut in 4 sizes: 4, 6, 8 and 10 years. A 6 year size will require $3\frac{3}{4}$ yards of 27 inch material. Price, ten cents.

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PATTERN DEPARTMENT
California Cultivator
Los Angeles

(about $1\frac{1}{2}$ cups). Sift dry ingredients together, cut in butter with knife, add milk to make stiff dough. Roll thin and bake in hot oven. Serve hot with honey or maple syrup.

Spoon Cornbread

1 pint coarse white corn meal, $\frac{1}{2}$ teaspoon salt, 1 cup sour milk or buttermilk, 1 tablespoon butter, 1 egg, white and yolk beaten separately, $\frac{1}{2}$ teaspoon soda. Mix cornmeal, butter and salt with enough warm water to make smooth paste. Add egg, sour milk and soda. Beat until very smooth. Pour into hot well buttered baking dish and bake quickly in hot oven.

Cheese Soup

1 quart milk, 1 tablespoon onion, 1 blade mace, 1 pepper pod, 2 tablespoons butter, 2 tablespoons flour, $\frac{1}{2}$ cup grated cheese, 2 egg yolks, 1 teaspoon salt, $\frac{1}{4}$ teaspoon white pepper. Scald milk, onion, mace and pepper pod. Melt butter in sauce pan, blend flour with melted butter. Strain milk and seasonings, and add gradually to flour mixture, stirring all the time. Return to double boiler to cook. When creamy, add the cheese, salt and pepper, stirring until cheese is melted. Then pour over well beaten egg yolks, stirring all the time. Whip until frothing and serve.

Oatmeal and Mushroom Soup

Cook oatmeal with a small onion and sprig of parsley; then with hot milk. Strain and add chopped mushrooms.

Ginger Custard

Canton ginger, 4 eggs, 2 cups milk, $\frac{1}{2}$ cup sugar, $\frac{1}{4}$ teaspoon salt, 2 teaspoons vanilla. Cut canton ginger in thin strips and use for garnishing sides of buttered individual molds. Beat eggs slightly, add sugar, milk and seasonings, and strain into mold. Set in a pan of hot water and bake until firm. Remove to serving dish when chilled thoroughly.

Caramel Custard

4 cups scalded milk, 5 eggs, $\frac{1}{2}$ teaspoon salt, 1 teaspoon vanilla, $\frac{1}{2}$ cup sugar. Put sugar in omelet pan, stirring constantly over hot part of range until melted to a syrup of light brown color. Add gradually to milk, being careful that milk does not bubble up and go over, as is liable on account of high temperature of sugar. As soon as sugar is melted in milk, add mixture gradually to eggs slightly beaten, add salt and flavoring, then strain in buttered mold. Bake as custard. Chill and serve with caramel sauce.

Coffee Custard

2 cups milk, 2 tablespoons ground coffee, $\frac{1}{4}$ teaspoon salt, 3 eggs, $\frac{1}{4}$ cup sugar, $\frac{1}{4}$ teaspoon vanilla. Scald milk with coffee and strain. Beat eggs slightly; add sugar, salt, vanilla and milk. Strain into buttered individual molds, set in pan of hot water and make until firm.

Cheese Sauce

1 cup milk, 2 tablespoons flour, 1 ounce cheese ($\frac{1}{4}$ cup of grated cheese), salt and pepper. Thicken the milk with the flour and just before serving add the cheese, stirring until it is melted. This sauce is suitable to use in preparing creamed eggs, or to pour over toast, making a dish corresponding to ordinary milk toast, except for the presence of cheese. It may be seasoned with a little curry powder and poured over hard boiled eggs.

HOUSEHOLD QUERIES

Three-in-One Dessert

I am sending "Three-in-One Dessert" recipe as requested in Household Queries column.

Three-in-One Dessert: Line a deep pie plate with your favorite pie crust and fill with the following mixture: Mix together 1 cup sugar, 2 heaping tablespoons flour, pinch salt. Add butter size of an egg, melted, and yolks of 2 eggs. Beat all to a cream. Add to this juice and grated rind of 2 medium sized lemons, 1 cup milk, and lastly the whites of 2 eggs beaten stiff. Bake $\frac{1}{2}$ hour in rather slow oven. The result will be a flaky crust on the bottom, a delicate layer of cake on top and a dainty lemon filling between. Served with lemon sauce, you will have pudding, with meringue you have pie or simply frosted you have cake.—Mrs. E. B. O'B., Santa Ana.

Choose a piano for qualities that will endure

A piano is usually bought but once in a lifetime.

It will remain in your home from now henceforth,—a monument to your judgment, a witness to your taste.

As the years go on, associations will gather thick about this instrument. Little fingers will learn to play on it. Songs, old and new, will come from it mellow and familiar. During these years, your piano should come to be the very heart of your Home.

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You'll find your Auto-Wheel Coaster doubly valuable at repairing time. It hauls material for repairing to every section of the farm quicker than by any other method—and it is small enough to slip through places where a team could not go.

But the best thing about the Auto-Wheel is that you don't have to worry about breaking it. Pile on half a ton of lumber. Pick up the tongue and see how light that half-ton load is. You'll be surprised at the ease with which it can be pulled. The

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RHUBARB---Wagner's Giant Plant Now

September, October and November are the best Fall months to plant.

Growers who planted last July and August have already harvested over 15 tons per acre netting \$1000 eleven months from planting. For further information, write J. B. Wagner, Rhubarb Specialist, 1550 East Villa St., Pasadena, Cal.

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EVERY dairy cow needs a feed ration that contains the proper amount of carbohydrates and protein. All authorities agree on that! Now then, alfalfa is the ideal roughage as it is the cheapest source of protein necessary for milk production. But alfalfa alone is not enough! For the very good reason that alfalfa contains *only half* the carbohydrates required. Hence the need of feeding SUREMILK with alfalfa. For it is a highly concentrated grain feed, rich in carbohydrates.

Feed SUREMILK and notice how it improves your milk production. Comparative tests prove that it gives better results (increased milk and improvement in the physical condition of the animal) than any single grain. Because it is a *mixture* of several kinds of grain—and therefore more palatable. It's easy to convert feed into money by following this formula: SUREMILK with alfalfa. It means healthy cows—profit-producers!

SUREMILK

"A Sperry Product"

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A grain feed for HOGS

FOR hogs SUREMILK serves equally well because it supplies the grain feed that's essential. Alfalfa or skim milk provides the protein necessary for muscular development of the pig as well as an abundance of lime and phosphates for the bones; but it is necessary to balance this ration by feeding a highly concentrated grain feed like SUREMILK. It is rich in carbohydrates—an essential element in a fattening hog's ration—and has a greater feeding value than the best barley.

Hog-raisers have found that feeding SUREMILK builds the porkers up and fattens 'em up. They have found it economical, too—because it is highly concentrated in feeding value and does not bulk.

No less an authority than W. A. Henry says in his book, *Feeds and Feeding*: "Skim milk, rich in protein and mineral matter, should always be combined with a starchy carbohydrate, such as corn, barley, kafir, milo, etc., in which case it becomes one of the most useful of all available feeds for the pig."

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CALIFORNIA CULTIVATOR

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Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

October 9, 1920

No. 15

The American Farm Bureau Federation

CF making of farmers organizations there is no end, and many of them have caused much weariness of flesh. It sometimes seems that

when some fellow gets out of a job he proceeds to organize the farmers. Even the Labor Union is endeavoring to strengthen itself in the organization of a farm labor branch.

But still there are organizations and organizations, and many of them have come to stay because of the real benefit they secure to their members, in fact, to the entire country. The American Farm Bureau Federation is yet too new to predict with absoluteness its future, yet it has so many common sense ideas in its fundamentals that we feel fairly safe in predicting long life and usefulness for it.

In a recent issue of the Monthly Farm Bureau Record issued from the office of the secretary of the California Farm Bureau Federation we note a number of facts regarding the national federation:

The American Farm Bureau was organized at Chicago on March 3, 1920.

The national roll call on the organization date was over 700,000 members, and 28 states became charter members.

Since last March the states affiliated have reached 33 in number and the membership is over a million.

The official body contains 33 directors and the executive committee, 12 directors chosen from differ-

ent regional state zones into which the United States has been divided.

Its directorate and leaders are selected from actual farmers and men who sense the agricultural needs of the country.

The officers have appreciated the functions and service the national farm bureau should develop and have taken up projects which the states could not as units carry through.

The national federation has recognized the problems affecting the farmers and will consider in due time every feature in agricultural leadership.

With but a few months activity our national organization has established a leadership and prestige in the executive and legislative branches of the nation second to no other agricultural organization.

The American Farm Bureau Federation has canvassed the entire country for qualified men to carry forward and manage its important projects and departments and has established a financing program which will permit paying adequate salaries for such efficient help.

A bureau of transportation has been created to study the

basic problem of transportation and its influence on agriculture. Primarily the farmers pay 56 per cent of the freight in the country which at once intimates a basis for concern. —(Continued on Page 477).



California Cultivator Cup for Best Producing Pure Bred

Cow testing associations have been in dairy districts the most helpful activities manifested by various county farm bureaus. Los Angeles County bureau is conducting an annual test in its two testing associations. To induce highest effort on the part of the members there have been organized sections or classes amongst the members and cups have been offered. Amongst these cups is the California Cultivator cup shown above which is the prize going to winner of Class E for the highest producing pure bred cow in a period of at least nine months out of the 12 months beginning July 1 last. The winner of first place during the month of August was Burr Farm, Los Angeles. This with a Holstein making the magnificent showing of 78.8 pounds butter fat. The cows in the test during the month of August numbered 3089. The classes are as follows:

- Class A Highest herd average under 60 cows.
- Class B Highest herd average 60-150 cows.
- Class C Highest herd average over 150 cows.
- Class D Highest producing pure bred heifer first calving.
- Class E Highest producing pure bred cow.
- Class DD Highest producing grade heifer first calving.
- Class EE Highest producing grade cow.
- Class F Best 5 cows in class A herds.
- Class G Best 5 cows in class B herds.
- Class H Best 5 cows in class C herds.

Firestone

Buy a set of Firestone 3½-inch tires and discover the big feature behind their uniform service—perfect *balance*.

Firestone has devoted eighteen years to developing the *balanced* tire, giving light car owners more mileage at low cost—most miles per dollar.

The answer to getting more service and more *uniform* service out of all four tires is the Firestone 3½. It is more than thickness of tread or amount of rubber and fabric, greater cushioning or greater air capacity. It is proper *balance*—the way each of these component parts of a Firestone 3½ tire is made to co-ordinate.

Sales of this tire increased 96% for the first six months of this year. The result justifies the effort because the stamp of approval has been set by the public on the Firestone 3½—the *balanced* tire.



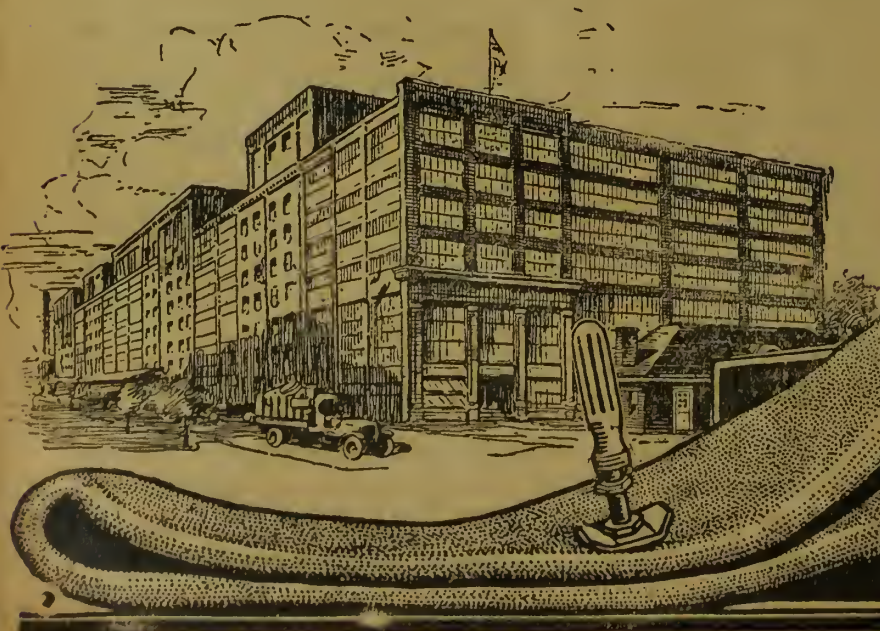
30 x 3½

(non-skid)

\$22 50

Gray Tube \$3.75

Red Tube \$4.50



Firestone
30 X 3½
TUBE

California Cultivator

Vol. LV, No. 15

Los Angeles, October 9, 1920

One Dollar Yearly.

President Giffen Makes Statement



OW that the smoke of battle has cleared away and we know exactly the terms of the compromise made in Los Angeles on last Tuesday it is well that the growers should have a definite statement of the terms.

"This compromise was not satisfactory to us, but was accepted as being the best thing to do under all the circumstances. Some of the things that led to this settlement are now a matter of public knowledge; some cannot, at this time, be given out, and if there is anyone who feels dissatisfied we ask you to be patient until all of the facts can be told.

"The exact terms of the compromise are that we have agreed to sell to Chaddock & Co., Bonner Packing Co., American Seedless Raisin Co., Guggenheim & Co. and Rosenberg Bros., the firms whom we believe are responsible for the bringing of this suit, 20,000 tons of raisins at a price that will net them \$5 a ton if sold at our price. It is also agreed in this stipulation that we will sell to the California Packing Corporation a like amount of raisins; that we will do away with selling 'firm at opening' and 'guaranteeing against our own decline,' but this in no way changes matters, because we were already under contract with the California Packing Corporation for that amount of raisins, and we had by letter to the trade done away with the practice of selling 'firm at opening' and 'guaranteeing against our own decline.'

"Another matter covered in this stipulation is that our option in the growers contracts to purchase the crops of 1921, 1922 and 1923 shall not be exercised during the time that this trial is pending, but as this option does not expire until April 1, 1921, and the case will undoubtedly come to trial either in November or February, this point is not material and we would not have exercised it until April of next year at any rate.

Cost Growers \$100,000

"The stipulation further provides that the grower who was coerced into signing his contract should be released, but so long as practically all the growers have made affidavit that they were not coerced, this fact is unimportant. As we had already, by advertisement and letters, notified every grower that he would be released on the condition that he make an affidavit to the effect that he had been coerced, it is extremely important that every grower now will make that contention, so that the only thing of any consequence that we have conceded is the sale of 20,000 tons of raisins to the above mentioned firms at a price that will cost the raisin growers of this district \$100,000, or approximately 75 cents a ton against their delivery, and in view of this the attorney-general's office has agreed that the restraining order asked for in Judge Bledsoe's court would be dismissed.

"A statement given out in Los Angeles to the effect that by this agree-

ment 60,000 tons would be released, is not correct, as the 20,000 tons sold to the California Packing Corporation are the same raisins sold to them under a former contract, and the balance of the 60,000 tons was already controlled by the independent packers and had been sold to the trade at three cents above our price.

"The net result of this compromise is that the independent packers are to have 20,000 tons of raisins; the consumers of the country, in whose interests the suit was ostensibly brought, have not gained a single dollar; the California Associated Raisin Company has lost \$10,000 in money and \$1,000,000 worth of pride, but had the injunction been granted the Associated Raisin Growers would have undoubtedly lost \$25,000,000 in money and many million dollars worth of pride. Confronted with this choice, we chose the lesser evil.

Have Right to Manufacture

"The thing of importance is that we have not established a precedent that will need to be followed in other years, and that our contention today is exactly the same as it was before the compromise—that we have a right to manufacture and sell our own product, either in part or its entirety, being guided alone by the question of whether or not it is better to sell certain goods to our competitors or pack them under our own brand. In the last few years we have been pursuing the policy of packing all first class goods under our own brands and at times selling the damaged or poorer goods to some of our competitors, and this is the policy we expect to pursue on other crops in future years, as we believe that when the case is tried on its merits the courts will say that we are under no obligation to sell our raw products to our competitors, and this is the point that we consider absolutely fundamental.

"Judging by the experience of the old association, we do not believe it is possible for any organization which does not control its own marketing to exist for a long length of time. We are spending over a half million dollars a year in advertising, and believe this is absolutely necessary to keep up with the increasing production, and if continued the consumption of raisins can be increased in the next ten years to double our present production, and as a result untold wealth will be brought to this state. We do not believe that advertising can be done to advantage if it is done in the hit-or-miss fashion of advertising everybody's raisins without having any control over the brand. We believe it is of vital importance, if the advertising is to be continued, that the people who pay for it should own their own brand and manufacture their own raisins, for it certainly would not avail much to spend a half million dollars a year to advertise the Sun Maid brand of raisins if they all went out under a hundred different brands belonging to our competitors, who contribute nothing toward the advertising.

Growers' Rights to Sell

"Mr. Preston, in a special interview in the morning Republican, says that their fight is to see that the growers have a right to sell to whom they please, and it hardly seems necessary that there should be all this fight over that point when it is conceded by all parties. The packers whom Mr. Preston represents have been doing business in this community for 30 years; the California Associated Raisin Co. has been doing business for seven years; and two years ago, after an experience of 25 years with these firms and five years with the Associated Raisin Co., when every grower in the district had a perfect right to do as Mr. Preston suggests 85 per cent of the growers pleased to sell to us and 14 per cent pleased to sell to the aforesaid packers, and since that seven growers, who signed contracts with us, have claimed that they did so under an undue influence and have been released, so that evidently 88 per cent of the growers less seven growers are doing as they please when they deliver to us, and even if they have since changed their minds we believe that a contract is sacred and should be lived up to until it expires, even if its provisions seem irksome to the people who signed it, so that as far as we are concerned we expect to enforce these contracts in the future as we have in the past, regardless of Mr. Preston's opinion.

Only One Point of Difference

"Reduced to its final analysis, there is only one point of difference between the California Associated Raisin Co. and the independent packers—the growers profess to be grieved because we have taken advantage of the consumer and in order to prove their sincerity have sold their own raisins at a higher price. They also profess to be interested in the question of whether or not we 'guarantee against our own decline' and sell 'firm at opening,' and they pretend to be interested in the welfare of the jobbers who demand that we pack our goods in their private cartons that they may be further enriched at the expense of the growers.

"There is also much ado about the fact that a few merchants and bankers own some stock in this company, and they would have you believe that if we were organized on a strictly cooperative and non-profit basis our troubles would be at an end, and as evidence of their sincerity on this point it is only necessary to call your attention to the fact that Mr. John Preston is the attorney who has brought suit against the Milk Producers of this state, who are organized on a non-profit basis; but as a matter of fact, as proven by the compromise just made at Los Angeles, these men are not at all interested in any of these things, but are interested solely in seeing that we are forced to sell our raw product to them that they may become the selling agents.

"Stripped of all camouflage, this whole controversy is reduced to this simple proposition—are we or are we

not, under the laws of this country, under obligation to sell our raw product in the sweat box, or have we the right to manufacture and sell it ourselves under our own brand. This point is so vital, as we see it, to the future welfare of the raisin and dried fruit industries of this state, that we propose to fight either until we find that under the laws of this country we do have this right, or, failing in this, we propose to fight until the laws are so amended that the raisin and fruit growers of California can do what every other person in the country is doing—pool their interests for their own advantage. This compromise in Los Angeles has in no way dampened our ardor, and our policy today is exactly the same as it was a week ago—that we do not intend to sell our raw product to the packers until the last court in the land has decided that we are under obligation to do so. If, at that time, it seems feasible to run an organization on the terms suggested by Mr. Preston, we will do so, but until then we will run it according to our own judgment.

"And, finally, this is but a continuation of the same old fight and the question is whether or not the packers who now, through the pathetic voice of John Preston, plead for the right to live, and who for years sacrificed the industry for their own selfish advantage, denying the growers the same right to live because of their self-claimed superior ability, are to be constituted the divinely appointed selling and manufacturing agents for all time to come of the raisins and dried fruits of this state. Our answer to this question is that this right is not a divine one, but one that must be determined by the growers themselves, and so far as we are concerned we are willing to leave the question in their hands and abide by their decision, as Mr. Preston says, 'let the growers sell to whom they please.' The question of whether or not we sell the packers a few thousand tons of raisins in itself is unimportant, but the question of whether or not we have to sell these raisins is all important and determines, in the end, the question of whether or not a cooperative organization is worth while, for as we have said many times before, whoever controls the selling of our products controls the destiny of the raisin growers."

PROTECT DEFOLIATED TREES FROM SUNBURN

"Many trees are being defoliated by grasshoppers and by the red spider at the present time," says T. D. Urbahn, field entomologist of the state department of agriculture. "Besides preventing the development of fruit wood, this defoliation stops circulation of sap and exposes the tree to sunscald which may cause permanent injury to the trunk and framework of the tree. The defoliated trees should therefore be thoroughly whitewashed and the tops sprayed with whitewash at least on the south and west exposures. Whitewash formula—Lime 15 pounds, tallow 2 pounds. Water to make it flow well and where grasshoppers are still present add a couple of pounds of bitter aloes."

Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877
Combined with California Cultivator 1914
Livestock and Dairy Journal, Established 1901,
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Saturday October 9, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

EDITORIALETTES

President Roeding and Secretary Paine of the state fair association are both busy doing the Los Angeles Livestock Show. J. I. Thompson and other northerners are also looking in. But more aristocratic than these are the quality livestock that have gathered from all portions of the Coast and the Southwest to win the money and the championships offered. Practically every class of livestock is represented in the exhibits whether it has four legs or wears feathers. Considering the period of the year the showing of poultry is exceptional.

* * *

The show began on Saturday last and the Cultivator representatives have been there and have been observing the placing of the ribbons and even some of the championships, but it is impossible this week to get the photographs and engravings made. Next week, however, Mr. Hughes will touch upon the dairy classes, Mr. Royce the beef, Mr. Bennett and Mr. Hilt the swine, Mrs. Koethen the poultry and pigeon show.

* * *

Note in the livestock department this week that there have been some other fairs and shows held in this state. Both Fresno and Kings Coun-

ties are representative rich producing sections of California and there were held at Hanford and Fresno district fairs at which the products displayed will inspire to better effort those now engaged in food production and give a knowledge of the capacity of those sections as few other events could. Kings County is the Poland China county of the state. Both sections are noted for their raisins, prunes and apricots, their peaches and other fruits.

* * *

Last week's paper, in which we referred to some of the difficulties confronting the farm press, was hardly in the postoffice when it was announced that a farm paper which has been published as a weekly for nearly a half dozen years cuts its service in the middle or at least reduces from a weekly to a semi-monthly. This is greatly to be regretted in these days when agriculture needs all the aid which can be supplied. And the farm press has been one of the biggest factors in disseminating information gathered by departments of agriculture, by state universities, farm bureaus and its own staff.

* * *

But as much as these forces are needed, a bit of retrospection compels the conclusion that the farm paper must travel a rocky road. There are today two papers which have been rendering service to California farmers for over 40 years, of which one is the California Cultivator, in Los Angeles. Neither of these papers has ever had an "angel" to tide over the difficult days of becoming established. It has simply been through hard knocks and continuous hammering to make the papers support themselves and serve the farmer that they have come through to success. The writer of this hasn't sufficient fingers and toes on which to count over farm papers which have come and gone in this state in the score of years he has been endeavoring to serve the Cultivator.

* * *

It costs money under normal conditions to produce a paper of the type of the California Cultivator; under present conditions when white paper has advanced far more than the 300 per cent claimed as the limit on most productions and ink and labor both have advanced, there is temptation to reduce, but the Cultivator intends to continue rendering the same service to the farmers of California which it has in the past—and better.

* * *

Touching upon the official organ, which subject was referred to on this page of last week's Cultivator, we note the Prairie Farmer, published in Chicago, takes identically the same attitude in that an official organ is not especially valuable for publicity purposes. It refers to the fact that in all probability there will be mistakes made by the management: "No organization can hope to remain free from mistakes; no set of officers can do the right thing always. The members are entitled to the truth about these mistakes. Such a paper is run by the officers of the organization. They are not going to print anything about their own mistakes. If an incompetent set of officers gets control, the official organ is a powerful weapon with which to keep themselves in power. Such a thing has happened often in the past, and it will surely happen in the future with any official organs which the farm bureau federations may establish. The best guarantee that the farm bureau federations will go right is full, fair news reports

and constructive criticism in the independent farm papers." And the Prairie Farmer is one friend of the farm bureau movement.

* * *

Saturday of this week, October 9, is Fire Prevention Day, and this because of a proclamation by the governor of California and because of the need of the people of this state pausing a moment and considering the awful loss to this country through the wiping out of billions in value through fire every year.

* * *

Wonderful state, this. In the prune and raisin drying sections and in the great valleys where the wheat still lies scattered in sacks over the field there has been no rain; there is none wanted. Yet up in Humboldt County the weekly summary of the weather bureau reports: "Humboldt County ranchers and stockmen are elated over the copious warm rains, which have helped the root crops raised so extensively for stock feed and started the grass on the ranges."

* * *

One of the most valuable lessons on cooperation is being taught by the poultrymen of California. Contrary to Middle Western practice, the poultry industry in California is not an adjunct to the diversified farm, but has become a specialized business followed exclusively, at least such is the case with the greater number of egg producers. This specialization has made close business management necessary during the last few years of high feed prices and has resulted in a well organized cooperative marketing movement. From a recent circular letter to members, Manager Stanley of the Poultry Producers of Southern California says: "We are now shipping a car of eggs a week to New York. The last car shipped sold there this week at 90 cents per dozen. This car was shipped September 23 and was billed at the market price of that date, 69 cents. The shipment was made by express; the express, war tax, New York drayage and selling charges amounted to approximately 13 1/2 cents per dozen. A good margin of profit will be shown by the sale of this car. On the other hand, fluctuations in the New York market sometimes do not admit of a profit on such a transaction, other than that derived indirectly from the stabilizing of our local market by the removal of its surplus." And this last, that is, the stabilizing of the market, is the one big accomplishment of all cooperative movements.

* * *

Away back in 1914 a reader of the Cultivator sent in to the household department a recipe for the making of some deliciousness—perhaps it was a pie, or something, dear to the heart of man. This recipe was cut out by a housewife and tried with such success that it was repeated many times. Ultimately it was lost. A few weeks ago she wrote to the household department asking for reprinting of that recipe without knowing date of its issue. It was impossible to locate it. However, a note in the columns of the household department some two or three weeks ago requested any subscriber who had preserved the recipe to send it in for the benefit of the inquirer. The paper was barely off the press before old time egg stained clippings began returning from subscribers in all sections of the state. They came by dozens, even by scores. The moral is, "Preserve for future use the good things which appear in the columns of the Cultivator. There is

a lot of this worth preserving stuff, especially in the household department.

* * *

We had in last week's issue of the Cultivator an article regarding the San Diego County fair. It was written by Robert R. McLean, who is connected with the agricultural service department of the First National Bank of San Diego. There are many of our larger commercial and other institutions these days which realize that the largest and the surest profit is not that which comes from the immediate sale or transaction but from service rendered toward the upbuilding of those who may be clients of the institution. The Southern Pacific Railroad once conducted a series of valuable demonstration train excursions simply because "The greater your tonnage production, the greater our tonnage of freight." The bank which can encourage the farmer to use the larger producing pure bred or better cultural operation is encouraging heavier deposits.

* * *

At the state fair the University of California had a remarkably fine showing of its various agricultural activities. One building was devoted to dairy products; another to general farm crops and horticultural products; another to pure bred animals used in connection with the farm school at Davis. This is referred to now to call attention to the admirable arrangement of the stalls or, rather, there were no stalls and the animals were displayed broadside to the passer-by. The usual method of display is in narrow stalls where it is impossible for the visitor to get any satisfactory look at the animal. To be sure, it takes considerable space to let a big draft horse or Shorthorn bull stand full length, but they are there to give information to those who are attending the fair, and this certainly can only be given where the face of the animal may be seen, and as well its other good points, in a broadside view.

* * *

The citrus growers who would sleep soundly during December and January nights have probably secured orchard heaters and have orders in for distillate or other fuel. Practically all our citrus orchards are in the "frostless belt" but a few heaters may aid in maintaining that claim. This is also our off year, that is, we are entitled to an entirely frostless winter season; but again, let's be prepared. Heaters and fuel cost money but oranges—well oranges are oranges for we note an occasional sale in auctions as high as \$11. And lemons—lemon trees—are well worth preserving from the shock of cold. It will not be long till the lemon market will read differently.

* * *

Now the department of agriculture is recommending the production of gas from straw. The department is producing on a small scale on an experimental farm at Arlington, Virginia, by destructive distillation of rye, wheat and oat straw, a gas which has proved exceptionally attractive for illuminating, cooking and other purposes. Well, if 18 years is the earth's gasoline limit and if gas wagons are to increase at the present rate, something must come to give us power, but here's hoping it is something besides straw. We need that for humus.

* * *

Cotton planting was really on an experimental basis in the Perris Valley of Riverside County this year, but results have been so satisfactory that acreage will be largely extended another year.

Concerning the College of Agriculture

If there is one institution in California of which her people are more proud than another it is the University of California. In prestige it is becoming one of the country's foremost; likewise in number it is becoming, not only the country's, but the world's, greatest. We are all proud of its growth and we naturally object to any attack upon it. This very interest impels us all to watch it closely. And this means a greater and a better institution. Through Mr. Royce and others there have appeared in the California Cultivator a number of articles which have called attention to some angles of the university work which may call for slight changes, at least, such is the idea of those who have contributed these articles. This has caused other friends of the university to come back with a showing of wherein the university is succeeding. Some of these letters have been given, and the next succeeding article touches our university from the standpoint of one of the present year's class.

By L. Barnard, U. C. '20

HAVING read an article by R. P. Royce in the California Cultivator of August 28, 1920, I gather that he believes the college of agriculture at Berkeley is not fulfilling the needs of the California boys who wish to study agriculture, or is not of as high rank or as efficient in turning out trained agriculturists or farmers as Oregon agricultural college, or similarly conducted agricultural colleges. I also note with apprehension several statements made by the various young men who contributed to his article, which are untrue, possibly due to the fact that only one side is clearly understood, that of O. A. C. Having attended Davis farm school for a year, then O. A. C. for a year, and the college of agriculture at Berkeley for two years, completing my course here this Christmas, I feel that I am in a position to state a few plain facts that might clear up any misinterpretation in regard to the article written by Mr. Royce, which to an outsider might be misconstrued so as to injure the future reputation of our agricultural college.

The following points were taken from the letters of students which were printed and which seem to me unjust to the California college of agriculture and a blot on its good name unless some loyal California agricultural student takes the time to dispute and explain them for the readers of this paper throughout the United States:

Credits and requirements are stricter at U. C.:

I agree; but that also indicates a very high standard and more credit to the men who buck such odds and come out on top.

Davis does not find vacation work for students:

I have worked at Davis four consecutive summers, omitting the two summers in the army, and have always found the men in charge of the various divisions more than obliging to place men on farms. In fact, while attending O. A. C. I was made a higher offer for labor in the division orchard than O. A. C. could offer me.

At U. C. classes are so large that instructors are not in personal touch with students:

Our enrollment in the college of agriculture at the present is about 550. When I attended O. A. C. the enrollment was 1,500. Our agricultural buildings are separated from the university proper, so that in reality I find that I get more personal contact here with the professors than I did at O. A. C.

No democracy at U. C.:

This is 100 per cent wrong. I find more democracy here at the college of agriculture than I did at O. A. C.,

considering the influence of environment, such as the more cultural courses given in the various other colleges on the campus.

It costs \$400 to \$500 more to live at California than at O. A. C.:

This is also 100 per cent wrong. I find that it is just about the same, and some months much cheaper here, due to the absence of snow and rain and their effect on clothing purchased and soiled. I would say this depended entirely on the man and his source of finances. Of course, the fellow with a gold mine will find many chances here to spend if his money burns his pocket to that extent.

The man who works his way through U. C. is looked down upon:

This is another injustice to students of California. I have worked for my living and college expenses at all the above mentioned schools and, to be fair to them all, I have always been treated well and as an equal. Figures have just been released at the controller's office which state that 48 per cent of the total enrollment in all the colleges of the University of California, which is 10,000, are self supporting. Among the agricultural students I am sure the percentage is much higher than this.

It costs too much to hold up your own socially:

Once more, I believe this depends on the man and his source of finances.

The students at U. C. dress too expensively, which does not promote democracy:

For the benefit of the person who contributed this, I enclose the following information: 1. The women students of U. C. have gone on record in print as against flowers at dances, taxi service paid for by fellow students, immodest and expensive clothing, everyone home from dances by 2 a. m. 2. Twice a month the senior men and women hold informal dances to which men are not welcome except in cords. Flannel shirts have been urged for this affair. 3. President Barrows said, "As long as a man has clean clothes, a shine and a clean shave, he is dressed well enough for the University of California."

I will now tell why I decided to take my degree in agriculture from my home state university.

When I graduated from high school I worked on a Lima bean and sugar beet ranch in San Diego County for a year. While there I became so saturated with the practical side of farming that I enrolled at Davis farm the following year for a two year course in agriculture.

After I had completed a year at Davis I was firmly convinced that my education was too much practical and no theory. I therefore, in company with another student of the same frame of mind, started south through the state, working here and there on various ranches, mainly with the idea of picking up experience and financial means for future study. After working a year in this manner I decided I wanted a broader education in agriculture. I therefore forwarded my Davis credits and high school credits to U. C. for consideration as to entrance as a sophomore. The answer was that I would be admitted as a freshman, as the Davis farm work was not equivalent to university credit towards a degree. I then wrote to O. A. C. for similar information, and

I was admitted as a sophomore, as they recognized Davis work as equivalent to their college work.

However, I did not expect to graduate from O. A. C. as, after staying a year at that institution, I would be a full fledged junior. Accordingly, at the close of my sophomore year at O. A. C. I returned to California and worked in the pomology division at Davis. During that summer I wrote to Oregon for a record of my work there and my status, which stated I was a junior, etc. I turned these in at U. C., asking for admittance as a junior in the college of agriculture. I was refused junior standing because my Davis work was not equivalent to university credit, and also one or two O. A. C. courses were not rated as equivalent to similar courses given at U. C. (This upholds my statement of the high standard and thoroughness of the college of agriculture.)

Notwithstanding my setback as to standing and that I would be only a sophomore, even though I did rank as a junior at O. A. C., I was more firmly convinced that a college with such a high standard was well worth the extra year and the additional expense and labor it took to finally secure the training I was after. I also wanted to graduate from my home university, and to study agriculture under California conditions and in the state I expected finally to settle in. I accordingly entered U. C. and shortly after spent 13 months in the army in various parts of the United States. And during these 13 months of moving about I learned to appreciate my home state and the college of agriculture more, both from the good words I heard spoken of them and more impressively by comparison through observation.

Upon my discharge I returned to U. C., where the faculty members and officials and everyone concerned came more than half way in their efforts to get us fellows who had taken out leave of absence, back into our classes and work with the minimum amount of loss to us.

I therefore submit the above with all due respect to O. A. C., Mr. Royce and his contributors, but above all I hope I have cleared up any doubts in the minds of prospective U. C. agriculture students, as well as everyone who has a loyal feeling toward one of the best agricultural colleges in America, and one that we, the people of California, can call Our Own University.

Another who takes a different view is A. L. Wisker of Grass Valley. Mr. Wisker writes:

By A. L. Wisker

I am much interested in the article by Mr. Royce relative to the Oregon college of agriculture, and particularly in the comparisons drawn between that institution and the University of California.

The several persons quoted gave a number of logical reasons why a student seeking instruction in agriculture would prefer going to Corvallis. Among these, the fact that at Corvallis the student finds constant opportunity to put theory into practice appeals to practical minded men, and this condition is a very great factor in getting results from agricultural instruction.

In agricultural education demon-

stration in indispensable. Without it, the major benefits of instruction are lost and we produce a crop of agricultural graduates who excite the derision of practical men until they learn how to connect their theoretical instruction with the actual operations of farming.

I hope to live to see the college of agriculture removed from Berkeley and located where the important agricultural pursuits of our state may become familiar to the students through field application of classroom theories.

And I further hope to see something else: I hope to see such a house cleaning at the University of California that near-Bolshevism, anti-Americanism and other abominations of a stinking modernism will no longer be linked with the name of that institution in the headlines of the press and that it may become famous for that type of higher education in which character building is considered the keystone of the arch. No other function of any institution of learning is half so important as building up the character of the men and women who graduate from its halls, and any scheme of education which stresses mental and ignores moral development can but result in failure.

Californians hope to see a decided change for the better in the conduct of university affairs and will hail the day when this institution shall prove itself worthy of its great mission to the people of this commonwealth, but the citizens of this state are in no temper to permit a lowering of ideals until they decline to the level of the German universities. A new policy is needed that will restore popular confidence and respect and command popular support.

WINDBREAKS, AN OBJECT LESSON

"A few hours' travel, either by train or motor, across any of the fertile valleys from Mt. Shasta to Los Angeles will soon convince the most reluctant of advocates of the moral, spiritual and physical value of windbreaks," says Director Hecke of the California department of agriculture.

Across these many fertile valleys sweeps a hot wind, a veritable "sirocco" that dries the grain and burns the immature fruit. It is notable that upon reaching a district wherein windbreaks have been systematically placed the temperature is much lower and the general aspect of the surrounding lands more pleasing and inviting. Who can say that much of the agricultural success of some of our fairest counties may not be attributed to the persistent and far sighted work of those who saw future prosperity in the "windbreak?"

One aggressive, thinking farmer in Yolo County told the writer that now he had a good flow of water from a drilled well he would immediately set out to plant windbreaks on his quarter section. He said, "I have not succeeded with the chickens for lack of shade. My dairy cows suffer for the same reason." And a look at his otherwise homelike ranch would convince anyone that he, too, and his family would find life easier if there were trees to temper the heated winds which sweep the valley garden spots of the state.

In the south such work is being done along systematic and methodical lines, and if more generally adopted by the different counties would in a large measure enhance land values and crop returns, where now only indifferent, average or hazardous results are expected.

This movement for adequate windbreaks has long been agitated by the state forester and the California department of agriculture is in fullest accord and sympathy with the work which has so great an influence on the agricultural activities of our state.

Agricultural News Notes of the Pacific Coast

Northern California

Rice binders are busy in Colusa County fields.

The Almond Growers Exchange has fixed prices for the 1920 crop.

Tuolumne County expects to ship some 70,000 boxes of apples this year.

Several small cattle sales have been made in the Livermore Valley of Alameda County.

The Hanks Exchange center of Eldorado County has installed a five ton cattle scales at Pleasant Valley.

Hop pickers have been paid \$1.50 per hundred; it is reported that in some yards they have struck for \$2.50.

The Sonoma County farm bureau has passed resolutions recommending poll tax of \$4 on all resident non-citizens.

Arrests of 12 rice growers in Butte County have been made for permitting water from their fields to overflow highways.

Wool pooled by members of the Mendocino County farm bureau has been sent to warehouse at Chicago for grading and marking.

Fifty Poland Chinas have been purchased in Sacramento County for shipment to the director of agriculture of the Philippine Islands.

A survey of the orange groves of northern Sonoma County has just been made by W. L. Benedict of the federal department of agriculture.

The hay crop of the Livermore Valley is reported at far below normal this year, only about 7,500 tons, less than half the usual output.

President Stephens of the Pacific Rice Growers Association estimates this season's crop at 3,400,000 bags, some 200,000 bags more than last year.

Some growers of wine grapes in the mountain districts of Sonoma and Mendocino Counties have just made sale of their late ripening crops for \$100 per ton.

There was a record attendance at the annual picnic of the Livermore center of the Alameda County farm bureau held the last week in September at Cresta Blanca.

Farm bureau hog auctions will be held at Davis, October 13, for Sacramento, Solano and Yolo Counties; at Durham, October 14, for Butte, Sutter, Glenn, Colusa and Yuba Counties.

A meeting of rice growers at Bliggs, Butte County, was held September 27 to discuss the marketing situation. It was attended by 200 growers. Indications seem to point to a five cent price.

Farm Adviser Weinland of Sonoma County is making arrangements with members to do some test work in co-operation with the deciduous experiment station at Mountain View, Santa Clara County.

There is some late rice in the Wilows district of Glenn County that will extend the irrigation season to as late as November 1. It is now thought that all the rice crop will be matured. Many fields have already been drained.

Meetings of the Tehama County farm bureau will be held at Antelope, October 12; Dairyville, 13; Bend, 15; Richfield, 18; Corning, 21; Los Molinos, 25; Proberta, 27; Liberal, 28; Manton, 29; Bowman, 30; directors meeting, 23, at 10 o'clock.

Central California

Santa Cruz County will expend \$75,000 for bridges and repairs.

The Merced County farm bureau has raised its annual dues from \$2 to \$5.

It is stated that 2,000 cotton pickers will be needed in the Bakersfield district.

A large pack of fancy figs is being sent out from Clovis, Fresno County, this year.

The Farmers Union at Patterson, Stanislaus County, has decided to build a warehouse.

Many entries of livestock have been made for the fair to be held at Chowchilla, Madera County.

A meeting is soon to be held in Monterey of those interested in construction of Pacheco Pass highway.

The fall meeting of the California Fruit Growers and Farmers will be held at Fresno, November 9-12.

The state college of agriculture estimates that 200,000 acres will be planted to Mariout barley in California this year.

Following merger of fig growers interests in California Peach Growers, two new directors and two new trustees have been added.

In the hog auction held at Turlock, September 21, by the California Farm Bureau Marketing Association, two carloads brought total of \$4,650.

Directors of the Turlock and Modesto irrigation districts are making inspection of the Snow Mountain dam on the Eel River in Mendocino County.

The federal bureau of crop estimates places the California almond crop at 60 per cent of normal, which the Almond Growers Exchange considers too high.

The San Luis Obispo branch of the California Cattlemen's Association entertained 2,000 stockmen and friends at a barbecue on Saturday, September 18, at Paso Robles.

Injunction suit against the Raisin Growers has been dismissed and compromise effected whereby the Associated turns over some of its raisins to independent packers.

Modesto County will hold its annual farm bureau picnic on October 30. It will be in the form of a tour through the Delhi Colony, ending with picnic on the Merced River.

Some good reports have been received from grapes shipped to Eastern markets in stock cars. Much complaint is heard of condition of refrigerator cars when the shippers do manage to secure them.

Dairymen of Tipton and Tulare met in Tipton last Saturday on the call of the Tulare County farm bureau to consider affairs of the cow testing department. 1,000 cows have already been signed up in this testing unit.

Beekeepers of Santa Cruz County held meeting at Watsonville recently to discuss foul brood situation. Several beemen from northern Monterey County were present and told of the handling of inspection in their county.

Kern County farm bureau meetings will be held at Delano, October 11; Old River, 12; Wasco, 13; Rio Bravo, 14; Edison-Fairfax, 15. Farm home department meetings will be held at Shafter, October 12; McFarland, 13; Arvin, 14.

Southern California

Ventura reports record attendance at county fair.

The walnut harvest is rather late in Orange County.

Beaumont, Riverside County, is planning an Apple Day.

Machinery is being installed in the new cotton gin at Perris.

Large exhibit of livestock was made at the Ventura County fair.

Bean threshing is about completed in the Chino district of San Bernardino County.

Victor Valley will make exhibit of products at the Riverside fair, October 13-19.

Independent ginners at Blythe, Riverside County, are reported to have cut prices 25 per cent.

The new sorghum mill at Costa Mesa, Orange County, is turning out 300 gallons of syrup per day.

The Claremont Pomological Club held its first fall meeting at Ganesha Park, Pomona, September 25.

The Avocado Association holds semi-annual meeting and luncheon at Hotel Pasadena today, October 9.

Sugar beet growers of Orange County met at Los Alamitos, September 29, to discuss terms for next beet contracts.

Cotton growers state that they can ship cotton cheaper to New England by way of San Pedro than by New Orleans.

Careful check is being made by the Riverside experiment station in walnut orchards treated for control of walnut worm.

Fifty new members have just been added to the Santa Ana Walnut Growers Association. That association now numbers 550.

Lettuce growers of Westmoreland, Imperial County, are suffering serious depredations from gophers and grasshoppers.

Date growers of Coachella Valley are protesting against thefts of motor parties who like to "pick dates with their own hands."

Bean threshing in Orange County shows only about a half crop. The hot weather in July and August is considered the cause.

Because of delay in opening gin at Brawley the "News" reports 75 to 150 bales of long staple are being sent to El Centro for ginning.

Two carloads of date palm offshoots have just been received in Coachella Valley from Egypt. The shipment cost Uncle Sam some \$23,000.

Ruling has been issued by the state department of agriculture that wormy and defective apples may now be sold by growers at their orchards or wayside markets.

A cooperative organization for the marketing of onions is to be formed within the membership of the new Coachella Valley center of the Riverside County farm bureau.

Five and six sacks of beans to the acre is reported as the average from the Harperville section of Orange County. This is attributed to the hot weather and to "nimble toes."

A field meeting and soil moisture demonstration was held for the benefit of citrus and walnut growers at Duarte on September 21. It was given by the Sierra Madre-Monrovia-Duarte farm bureau center. Prof. Nelson was the speaker and demonstrator.

The Coast and General

Arizona's state fair will be held at Phoenix, November 8-13.

Wasco County, Oregon, farm bureau members buy distillate cooperatively.

Potato shippers of Yakima Valley, Washington, have formed an association.

American Fruit and Vegetable Shippers Association will meet in Chicago, January 19-21.

Turkey is now exporting shelled walnuts in considerable quantities, largely to the United States.

An Oregon rancher is advertising that he will pay five cents apiece for rabbits killed on his land.

A large steam drying plant for prunes is being erected by a grower in Marion County, Oregon.

Prizes amounting to \$500 were given to winners in the butter scoring contest at the Oregon state fair.

The exports of onion seed from the Canary Islands amounted to about 53,000 pounds, valued at \$87,000.

The annual meeting of the Oregon Horticultural Society will be held at Eugene the latter part of November.

The state fair board will ask the Oregon legislature for appropriation for erection of new buildings in time for the 1921 fair.

Louisiana's sweet potato crop is larger than last year and showing excellent condition. Early stock began moving late in August.

Loganberry growers in the region near Port Angeles, Washington, received 12½ cents a pound for their fruit for canning purposes.

Five hundred acres in the Caledonia marsh in Klamath County, Oregon, are to be put into mint. This is part of a 1,600 acre planting made by one company.

The island of Madagascar has this year planted to Lima beans some 57,000 acres. The crop is expected to be marketed in France, England and the United States.

Orders have been issued from the Commission on Car Service, Washington, D. C., that refrigerator cars may be held only five days after delivery. Violations will be punished by withholding future deliveries. This order was made to help out the shortage.

Official estimate of Italian silk production for 1920 amounts to 59,500,000 pounds of cocoons against 43,500,000 pounds for 1919. This is an increase of 37 per cent over the previous year. Raw silk is Italy's most important export to the United States, and larger shipments are indicated for the coming year.

Steamship agents are assuring apple growers of the Yakima Valley of Washington that they can ship apples to Europe as cheaply and quickly as by rail to the Atlantic seaboard for re-shipment. It is stated that the apples can be shipped under refrigeration from Seattle to London and Antwerp in 40 to 45 days.

At the reclamation congress held in Seattle, Washington, the last of September, 600 delegates were present from Washington, Oregon, Idaho, Montana, Wyoming. At this meeting was launched the Northwestern Reclamation League to work for reclamation of all Western arid and semi-arid lands, with the Columbia basin project as its biggest task. James A. Ford of Seattle was made secretary of the league.

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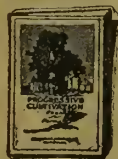
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Farmers and Fruit Growers Convention to be Held at Fresno

By Cultivator Staff Writer



WITH indications of a very strong program, dealing with subjects of vital interest to agriculturists of California, comes announcement that the state department of agriculture has accepted the invitation of the directors of the Fresno chamber of commerce to hold the fifty-third State Fruit Growers and Farmers Convention at Fresno, November 9 to 11, inclusive. This announcement will be welcomed by the growers of the San Joaquin Valley as well as by many growers from all parts of the state who will undoubtedly avail themselves of this opportunity to visit the land of the raisin, fig and peach.

These conventions are held annually under the auspices of the state department of agriculture and are serving the admirable purpose of crystallizing the agricultural thought of the state. Each convention during the past few years has seen the beginning of some movement for the improvement of agriculture which has been a benefit to the state as a whole. During the forty-ninth convention at Napa laws relating to the standardization of fresh fruits were discussed, and we are now operating under the very successful administration of these laws.

At the fifty-first convention at Riverside the Western Plant Quarantine Board had its first meeting. During this week representatives of all the states west of the Rocky Mountains, British Columbia, Lower California and the Territory of Hawaii, met and perfected a permanent organization.

The result of this conference has been far reaching and of great value to the farmers of California, as the efforts of these men have undoubtedly done much in preventing the spread of plant pests from one district to another and the introduction of others from outside territory.

Last November at Chico the farmers and fruit growers at the convention decided that the time was ripe to organize an Agricultural Legislative Committee. This committee is now in active operation and many questions will undoubtedly be discussed at the Fresno meeting which will be turned over to this committee to insure the proper legislative action.

The recent threatened disaster to the raisin growers company and other activities which indicate a general movement looking toward the overthrow of all farmers' cooperative organizations, will probably call forth some lively and spirited discussion, as will the question of evaporation of fruits, improvement of nursery stock and pure seed legislation.

An opportunity will probably be afforded for visitors to see the big new raisin plant in operation at Sun Maid City and the new patented process for peeling peaches which is being used so successfully by the Peach Growers' company.

During the same week the county horticultural commissioners and the State Nurserymen's Association will hold their annual meetings so Fresno promises to be the headquarters of things agricultural this fall.

Kern County Oranges

By Ernest Braunton



THE most noticeable feature about Kern County orange orchards is the extreme cleanliness of the trees compared with those of the great orange growing districts. The writer carefully examined trees in several localities and could find no insect pests nor evidences of their former presence, and foliage and bark were remarkably clean and bright, a noticeable contrast with the dinginess evident in districts where black scale is prevalent. The reason for this is that these pests cannot survive the hot dry spells experienced in mid-summer. Even in the shade of the large Kern County Land and Water Company's building in Bakersfield the trees were as clean as any.

The writer drove through a large part of Kern County's 1,400 acres of citrus groves and found that about one-half are in bearing, the remainder being too recently planted to yield a crop. Among them there is but a slight sprinkling of varieties, Navels being the one favored sort. The oldest groves are about 20 years, the more extensive plantings about ten years old. Very few orchards are on comparatively level land, but occupy the mesa lands well above the valley. The oldest plantings are on the Tejon and San Emidio ranches, and small areas are dotted about in many districts around Bakersfield. But as present planting appears most active about Edison, the writer most critically examined several orchards in that district.

Edison Navels

From Bakersfield we drove about eight miles eastward to the Edison settlement, through small orchards of olives and deciduous fruits interspersed with patches of alfalfa, cotton and other green crops, but these lands are largely devoted to growing cereals. At Edison there are 600 acres in Navel oranges, owned by many individuals, but nearly all under the superintendency of B. R. Harding, an experienced orchardist, formerly living in the San Gabriel Valley near Los Angeles. There is a large and well equipped packing house from which were shipped in early winter, 1919, one car of pomelos and 54 cars of Navels. Here the older groves were planted ten years ago. The only dif-

ference noted between these and Navel trees elsewhere is a slightly dwarfer, more compact habit, the trees spreading but of thick growth. The general condition was of the best and not a single "off color" tree was seen. These orchards mature their crop very early. Last year the picking began in November and the last of the 54 cars was packed at Christmas. This early marketing enables the orchardists to obtain the best of prices for their entire output and the future is very promising. After the visit the writer had a chat with one of the larger owners, a Bakersfield banker, who was more optimistic over this district's citrus development than over that of any of the many horticultural crops for which Kern County is noted. He also said that smaller groves on the mesas near Delano, Jasmine, Kern City, Lerdo and other points mature their fruit very early and that a ranch near Wasco is building a reputation for its pomelos.

THE FARMER AND FOREIGN TRADE

By E. W. Wilson



THE average fruit grower of California, whose surplus products go to foreign markets, sufficiently informed concerning our merchant marine, the prevailing freight rates, insurance premiums covering the various hazards of the sea, the modern methods of packing for foreign shipment and the present financial problems as affected by the various exchange conditions?

The surplus products of the California farmer are now being consumed by the people of Europe, of Central America and South America, of Australia and the Orient. As a result of the United States having become a creditor nation the markets for the farmer have widened very greatly and some very important problems have developed for him to solve. The various business angles that bear on these problems must be thoroughly understood if our producers keep in mind the dollar and cent side of them. Last year the prunes of Santa Clara Valley were consumed by people in almost all of the countries of the world. The peaches, apricots, pears (dried and canned) and raisins of the Sacramento

and San Joaquin Valleys enjoyed a market almost as wide as that of the prunes.

The much talked of "opportunities" for extension of foreign trade are of no value unless the foundation is properly laid in a thorough understanding of the people with whom it is expected to trade; for example, the condition under which the customer lives, the usages and needs of these far distant communities and how they can be cared for upon a basis that will produce a friendly feeling and insure a repetition of the orders. In some countries success in trade development may mean the low cost of production, in others, the superiority of the article of merchandise, in others, prompt service with reasonable credit arrangements, and in others it may be nothing more nor less than catering to "temperament."

How are the California farmers going to know the best plan to adopt unless they familiarize themselves with all the existing conditions in the countries where they expect to find markets for their products? To trade with other nations a bargain must be made, and those who have nothing to give, or are not willing to give, can expect little in return. The war gave us much of the foreign trade we now have. Nothing, however, but our own industry and intelligence in trade matters will save to this country these opportunities and business connections. Foreign buyers for our surplus products grown on the farm will not continue to come here so we must make ready to go where the markets are in search of purchasers.

World geography, ocean transportation, trade routes, foreign laws and customs, foreign finance and foreign exchange are all subjects that have a monetary aspect to the tiller of the soil. Haphazard farming and indifferent marketing will not provide a profit for the farmer in the future.

PRUNE AND APRICOT GROWERS MARKET THROUGH ASSOCIATION

Manager Coykendall of the California Prune and Apricot Growers sends out statement that non-members of the California Prune and Apricot Growers who stand to lose hundreds of thousands of dollars on their 1920 crops through their inability to find immediate buyers for their fruit will be permitted to sell their 1920 crops through the association under terms of an arrangement made public whereby the association will handle their entire production.

The association will take care of the prunes and apricots these growers deliver by forming a second pool and making a first payment to these growers equal to the collateral value of their fruit in the warehouses of the association. Growers taking advantage of the association's offer will sign the regular crop contract and become members of the association.

The manager says that the association will fully protect its present members by not selling a pound of the prunes or apricots received under the new arrangement until it has made complete settlement with its old members for all the fruit they delivered this fall. Hundreds of outside growers were left stranded last August when the association refused to handle crops for non-members after it had named the price it would pay its members for their fruit. The independent packers, finding these outside growers at their mercy, have been declining to buy their fruit except at prices several cents under the existing market quotations.

IMPORTANT MEETING WITH AGRICULTURAL COMMITTEE OF REGENTS

Representatives of many of the farmers' organizations will meet with the agricultural committee of the university regents, at the latter's request, on October 13 in Berkeley, to hear the needs of the various agricultural industries as a preliminary to shaping the budget of the college of agriculture and agricultural experiment station. The agricultural legislative committee, representing 25 organizations, will attend this conference and later make a detailed study of these institutions and present conclusions to the regents. Many of the industries desire expansion of the

present investigational work and appreciate this move on the part of the regents to determine the farmers' needs.

AVOCADOS PLANTED

Human beings are the most curious of all animals. Especially do they wish to know what the other fellow in the same line of business is doing or has done, not always for business purposes, but often out of sheer curiosity. Hundreds have asked us what are the best avocados to plant, but several have said: "What have our best avocado growers in their orchards at present? I am curious to know—I know what they would plant now."

Well, J. T. Whedon of Yorba Linda, Orange County, reports the following in his orchard: 150 Fuertes, 50 six years old, balance top-worked on six-year-old stock in 1917-18; 68 Tafts, six years old; 62 Sharpless, one and two years old; 45 Knights, two years old; 35 Queens, one to four years old; 28 Lyons, two and three years old; 15 Dickey's, six years old; 10 Attlixos, now being top-worked to better varieties; 5 Lindas, four years old; 5 Kists, four years old; 15 miscellaneous, six years old; 15 Wilson Popenoe Guatemalans, all different varieties three to fifteen months old, a total of 453 trees.

L. D. Oliver, also of Yorba Linda, has 263 avocados of the following varieties: Fuerte, 150; Dutton, 140; Knight, 37; Rey, 28; Linda, 18; Taft, 16; Dickey, five; Queen, five; Sharpless, Spinks, Dickinson, Lyon, Ganter, Harmon, Blake, three of each; unknown Guatemalan seedlings, 29.

These two orchards are fairly typical of all. A list of those grown on the Spinks place at Duarte, comprising about 2,000 trees, was published in the Cultivator some months ago.—E. B.

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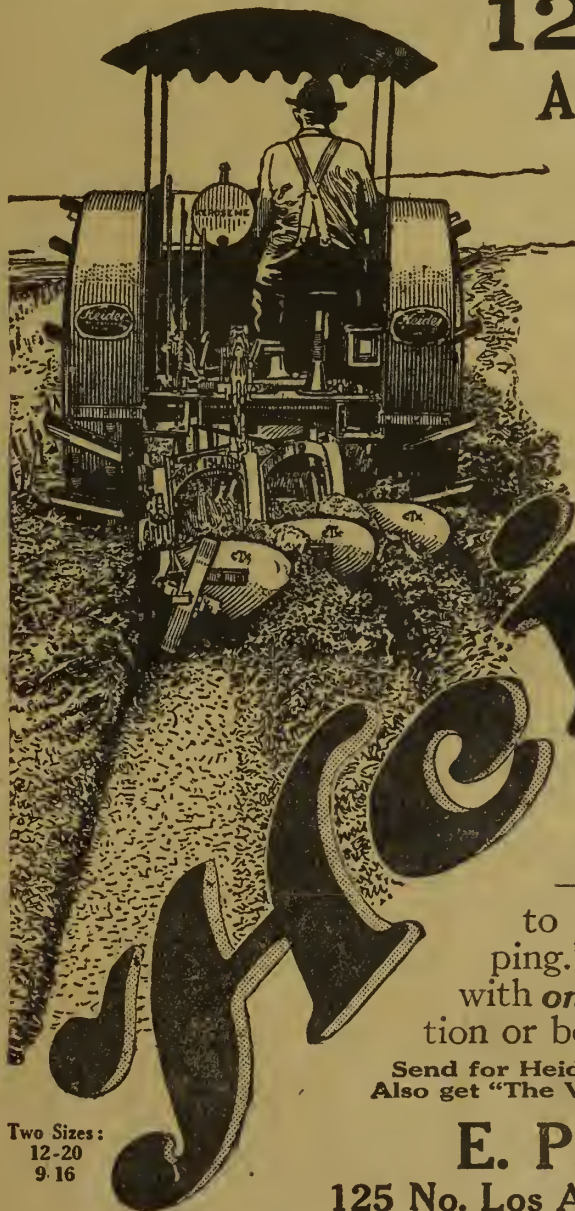
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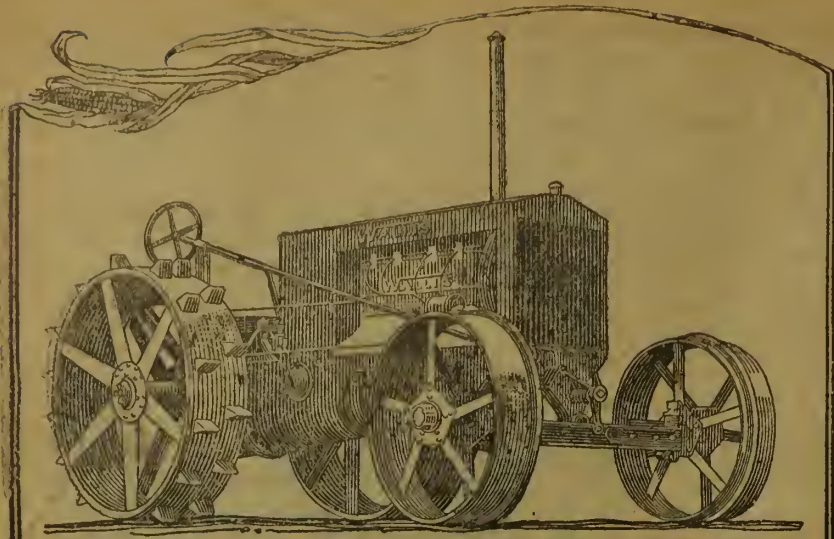
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Shipping Point Inspection

The Southern California branch of the state shipping point inspection service on fruits and vegetables is now open for business, with headquarters in room 217, Wholesale Terminal Building, Los Angeles. This service has been established to meet the insistent demand from carlot shippers for inspection at shipping point, similar to that carried out by the federal government at destination.

Inspections are made only upon request and the certificates issued are practically the same in form as those now in use by federal inspectors at receiving points. Statements as to quality and condition of the products inspected are prima facie evidence in any court in the state and thus provide the shipper with a definite protection in case of attempted rejection or railroad claims.

F. W. Read, formerly in charge of the local office of the bureau of markets, has taken charge of the inspection program under the state department of agriculture, with headquarters in Sacramento. Although the system has been in effect only about two months some 1,000 cars of apples and grapes have already been inspected with satisfactory results to all parties. The work in Southern California is under the direction of H. H. Warner, with headquarters in Los Angeles, and it is planned to enlarge the corps of inspectors as rapidly as demands for the work warrant. Hartley E. Truax, of the grades and standards project of the United States bureau of markets, now has headquarters in Los Angeles and is cooperating with the state department of agriculture in standard-

izing trade terms used in describing carlots of California fruits and vegetables, at loading points.

The fee for inspecting straight cars is \$5, and for cars containing more than five commodities \$10. Requests for inspection should be made in time to allow the inspectors to examine the products while being packed, as it is not the desire of the local office to have the inspectors break down a partially or fully loaded car. The local office anticipates immediate requests for inspection of tomatoes, both from Orange and Los Angeles Counties, and of cauliflower beginning about October 15. Then it is planned to gradually enlarge the force to take care of the requests for inspection service on celery, lettuce and other vegetables, both in the Imperial Valley and local districts. Citrus fruit may also be added to the program if sufficient demand should arise.

The state department of agriculture has now definitely placed this service in operation and its continuance will depend upon the cooperation of the shippers and the extent to which they desire to avail themselves of an official shipping point inspection. The men in charge of the work as well as the present force of inspectors are experienced in the commercial methods of handling the business and are familiar with the practical problems confronting California shippers.

Requests for this service may be made at the local office of the United States Bureau of Markets, Room 206, Wholesale Terminal Building. Phone Pico 3691, or at Room 217, Wholesale Terminal Building.

Lake County Hop Crop

By Ernest Braunton

In Scotts Valley, near Lakeport, Lake County, the writer found hops down on the rich bottom lands that have few rivals and no superiors, rivaled only where the same favorable conditions obtain. The largest acreage is that of O. A. Sanford, 50 acres, being garnered by 150 pickers. The

scribed, but as the hops do not grow large or bear heavily the first year, one neighboring grower has hop poles but two inches square and eight feet high and the vines interset with rows of corn. If crops and prices are good the man of limited means has enough capital at the end of his first season



Largest Hop Ranch in Lake County

Weighing the pickers' bags on the Sanford Ranch in Scott's Valley. The scales, desk and seat are on runners and trailed behind the wagon.

soil is a rich silt, a medium loam, neither sandy nor sticky.

The roots were planted in February and March, and the ground is then planted for a century if hops are desired in the soil that long. Roots have been found to go down more than 20 feet. The rows are planted seven feet apart and plants same distance apart in the row. Stout posts four by four inches and 20 feet long are set at every sixth row, three feet down in the ground. This gives a fine crop of poles without vegetation, 42 by 42 feet apart and 17 feet high. On top of these poles large wires are strung and smaller wires between. At every plant hill a wooden peg is driven in the ground, to which is attached "hop twine," and this is tied to the wires above. All this work is done in early spring before the plants commence to grow.

Hop vines need some training and the fields are generally gone over four times by "stringers" from March to July. Mr. Sanford starts out with the permanent equipment herein de-

to buy and set the lofty larger poles with present high priced labor. All hop farmers grow some other crop in young hop fields, generally corn, in Scotts Valley. No irrigation is necessary, but five or six cultivations are given between March 1 and July 1.

Picking commences about the middle of August and lasts about a month. The pickers receive a cent and a half a pound and make good money, for the average for experienced hands is 250 pounds a day. After the harvest the vines are cut by hand and burned. The field is then cleared for the next year's crop and restringing. No fertilization is necessary and the normal crop in this valley runs from 2,500 to 3,000 pounds per acre. This year, a dry one, the crop is 60 per cent of normal, the vines being of sparse growth and the hops smaller than usual. Some years the vines and hops are so heavy that in a high wind the whole field collapses. This happened in Scotts Valley a few years ago when in a field of 43 acres not a pole remained standing. In the midst of the

fields stands a drying kiln, so the crop haul is very short. In March of each year the roots are heavily pruned and the prunings used to plant new fields or sold to dealers. The first year's crop, if planted at proper time, will range from 600 to 1,000 pounds to the acre.

COOPERATIVE MARKETING

In an effort to eliminate speculation and waste in the distribution of food products and to bring the producer and consumer closer together a campaign is being inaugurated for expansion of the cooperative plan of marketing under the supervision of Gilbert B. Daniels, state market director, backed by the state department of agriculture and the farm bureaus of the different counties of the southern part of the state. The great success attained by cooperative marketing associations in the northern and central parts of the state has been the means of stimulating the activities of the growers of Southern California to such an extent that requests have been received by Mr. Daniels from nearly every county south of the Tehachapi for assistance in forming local and county wide marketing associations.

In carrying out this work Fred N. Bigelow, secretary of the state market commission, and James P. Britt, director for Southern California, are now organizing growers into cooperative marketing associations in Imperial Valley, where the lettuce and melon growers will be grouped together, and in Coachella Valley, where the onion growers, through their own cooperative marketing association, will market their crop. The vegetable growers in Lakeside, San Diego County, as well as at Carlsbad, are being brought together, and also the apricot and peach growers in Riverside County in the vicinity of Hemet and San Jacinto.

The county farm bureaus in connection with this work conduct preliminary investigations as to crop conditions, amount of foodstuffs available, proximity to shipping point, etc. Following this investigation Mr. Bigelow and Mr. Britt will arrange meetings with the growers in the different localities where the aid of the state market director is requested and will prepare subscription and marketing agreements, thus enabling the farmers to band themselves together in an association whereby they will be able to market their crop. It is the plan of the department of agriculture to assist in this work by placing inspectors at shipping points who will issue certificates as to the quality of the product, which will be a protection to the grower in the event of difficulty at point of shipment.

It is the opinion of the state market commission that cooperative marketing will not only increase production but by elimination of speculation and waste will decrease the price of necessities to the consumer.

Headquarters of the state market commission for Southern California have been opened at 310 Wilcox Building, Los Angeles, and it is the intention of the state market director to organize the growers wherever conditions are found favorable.

SELECTING LONG STAPLE COTTON SEED

By M. E. Bemis

Unusual pains are being taken in selecting seed of long staple cotton in the Salt River Valley of Arizona for next year's crop. The first seed was distributed by the government. Later as the demands continued fields of especially fine cotton were rogued by representatives of the plant bureau, and the seed from these fields was used for planting. The acreage now in cotton and the demands for seed from other localities not favorably located for the production of pure seed, owing to the danger of hybridization, have made it necessary to continue this work on a larger scale. Through a cooperative arrangement between the Tempe Exchange, representing the growers, H. C. Heard, county agent, S. H. Hastings of the Southwest Cotton Company, Warren Parker of the county farm bureau and T. H. Kearney of the U. S. department of agriculture, it is believed that a sufficient number of fields of first class cotton have been rogued to insure a generous supply of seed for next year's plant-

ing. Growers this year have generally found that it is false economy to economize on seed for planting, for a heavy planting of seed is more likely to insure germination and consequently a good stand, which is the first essential to a profitable crop. It is expected that seed produced from these fields will be certified to by authorities so that growers will be protected. Under this cooperative arrangement no profit will be made by anyone on the seed. As an example of the thoroughness with which this work has been done, it is noteworthy that in one field recently more than 1,000,000

plants were examined without finding a single hybrid or upland plant in the field.

FROM LAKE COUNTY

Lake County has just finished harvesting a fair crop of pears. Quality good, prices about \$75 per ton orchard run. Prune harvesting is now on, weather very favorable, crop rather light. Walnut crop very good but lighter than last year. The bean canneries have just closed a very successful season. Had a very favorable fall, no frost until they were closed.

Will have a big crop of alfalfa seed, threshing now.—J. B. Hendricks, Lakeport.

KILLING OUT STAR THISTLE

I am a reader of your Cultivator and like it very much. I have a good way of killing yellow star thistle. This is it: In the fall when it begins to sprout and gets about six inches high I pile manure on it about a foot deep and leave all winter. I have tried this on several small patches and none of the thistle returns.—Chris Garrsen, Chico.

Could you use 3 hours more a day?



A Western Electric lamp post outside means an up-to-date farmer inside.

"The chores and odd jobs around my farm took about three hours a day, before I got an electric power and light outfit. Of course, if you know where to get all the farmhands you need—at \$2.00 a day—this letter won't interest you."

Thomas Ball

Editor's Note: Mr. Ball is a farmer near Darlow, Kansas.

A rule we farmers don't give much thought to the value of our time. But we suddenly realize that time is worth money, when milking the cows or mixing the feed keeps us from bigger jobs, out in the fields.

"Last year I made up my mind that I would look for a farm plant with power enough to do real work. The one I picked was the Western Electric Power and Light Outfit, and please notice that putting the word Power first in the name describes the outfit very well. It is powerful. But I'm not going to praise it up to the skies. I just want to describe this outfit and the

work it is doing for me, and let you judge whether it would suit your needs too.

The battery lasts longer

"It is the 'tapering charge' that makes the Western Electric battery last so long. The charge doesn't strain the batteries, because as they fill, the current gradually slacks up by itself. These batteries are powerful too. They can run my portable motor for hours and hours on a single charge. Or they can operate ten electric lamps for thirteen and a half hours.

"Then there is the generator, built for endurance and hard work. In fact, it will run such a combination as an electric iron, twenty lamps and a one-sixth horsepower motor just as long as you keep it going.

"With the batteries and the generator working together, you just add the capacity of both. That explains how I can use electricity to milk the cows, separate the cream,

churn the butter, turn the grindstone and pump water.

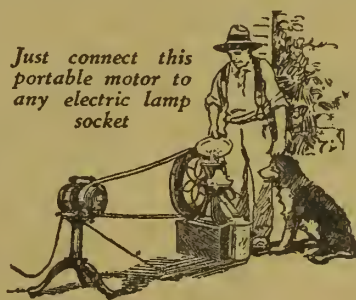
The powerful engine is a big help

"The Western Electric Outfit has an extra size engine, with a pulley all ready to be hitched up to a lot of the machinery I used to turn by hand. So taken all in all, you can see how I save at least three hours a day for work in the field. And in these

times when farmhands are so few and far between, it is mighty important to have this dependable help that my electric power outfit furnishes."

A farmhand you can always depend on—Western Electric Power and Light

Just connect this portable motor to any electric lamp socket



The Western Electric Vacuum Sweeper cleans your house quickly and easily.

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Fresno Electric Co., Fresno, Cal.

Write to the nearest Western Electric distributor for booklet CC6.



For territory still available write to Western Electric Co., Los Angeles

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Scheu Smokeless Orchard Heaters

AT YOUR RANCH

Mail This Coupon

If you would like to see just how these celebrated SCHEU HEATERS work, we will gladly give you a demonstration at your convenience.

Practical Frost Insurance

Even at present oil prices, SCHEU SMOKELESS ORCHARD HEATERS are operated at a cost of \$1.60 per acre per hour when the maximum of 40 per acre are used, many use only 25, with a proportionately lower cost.

Last Chance to Order For This Season Is NOW

In a few weeks cold weather will be here, and right now the last of the season's raw materials are en route, so orders must be placed at once to insure delivery.

Practically Eliminates Smoke

SCHEU SMOKELESS STACKS can be used on the California, Chinn, Claremont, Canco, Citrus, Dunn, Hilo and Hamilton heaters and save fully 50 per cent in cost of operation.

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Whiting-Mead Co. (Orchard Heater Dept.)
Los Angeles.

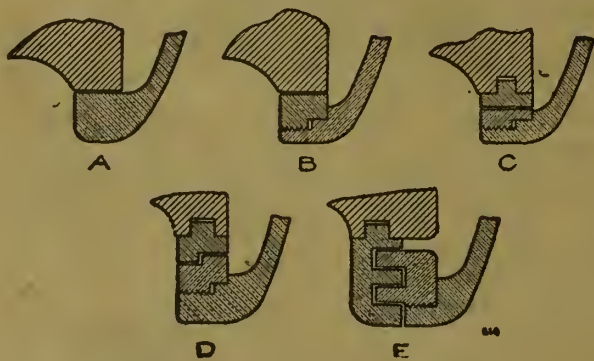
Am interested in seeing a demonstration of the Scheu Smokeless Orchard Heaters.

R. F. D..... City..... C Cult.

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DE LAVAL IRRIGATION PUMPS



High Efficiency Saves Power

Here are shown the five steps in the evolution of the DeLaval labyrinth rings. The advantages attained in reducing the leakage, and increasing the clearances have led the DeLaval engineers to perfect the ring "E." This consists of two removable rings, one attached to pump casing, the other to revolving impeller. The intermeshing grooves greatly reduce leakage without the many disadvantages of the straight rings. These rings are made of bronze and thoroughly tested.

This is one of a series of advertisements explaining the different parts of the DeLaval Irrigation Pump.

Write us and learn what can be saved with High Efficiency Pumps.

Herzog Electric & Engineering Co.
169 Steuart St. San Francisco

FRUIT TREES

We can still supply a limited number of trees.
Write For Our Price List

The Fresno Nursery Co.
FRESNO CALIFORNIA

Uncle Sam's Garden at Chico

By Ernest Branton



EAR Chico, Butte County, the United States department of agriculture, bureau of plant industry, has an extensive garden where everything living is labeled "P. I. G." followed by a number, yet there is not a pig on the place. The letters stand for "Plant Introduction Garden." It has had several directors, but the present one, R. L. Beagles, has been there for 16 years.

In this garden the writer saw many interesting and curious examples of



PLATE OF JUJUBES

One of the most desirable varieties of jujubes. They were grown on the place of Forrest E. Grow, Eagle Rock City.

plant life. Here is one: Some clumps of giant timber bamboo, *Phyllostachys Quiloi*, were planted 12 years ago. Each year bigger canes than before shoot up, grow rapidly, cease quickly. This year a shoot appeared May 28, grew to July 15 and finished for the season. It is five inches in diameter and 45 feet high. Its growth was measured and marked on a stake each morning. Its longest upward flight in one day was 23 inches. That number has ever been considered a hoodoo by many and even a bamboo couldn't pass it.

A giant almond of heavy shell, introduced in 1912 by Dr. Walter T. Swingle, from Granada, Spain, is growing but 30 feet from the Jordan and other standard varieties, yet the new one is three or four times larger and has a kernel bigger than the Jordan, shell and all. What its true commer-

cial value is has not been determined. The ones eaten by the writer were excellent in texture and flavor, but the nut is hard to crack.

A new peach, known as Sutter Creek, promises much, for up to the present it has proven immune to leaf curl while all about it are affected. Its fruits are equal to the Elberta and ripen a little later. It was sent to the garden by Dr. W. A. Taylor, now chief of the bureau of plant industry, who found it on the ranch of W. E. Downs, Sutter Creek, Amador County.

There are a number of very promising pears in the garden, some of which are crosses between standard varieties and oriental sorts immune to pear blight. Fruits of these sampled by the writer were of fine size, form, color and flavor and are full of promise for the California grower. The Chinese "melting pear" is a handsome golden fruit almost as hard as stone yet strongly attractive. When already perfect in color it may be picked and shipped around the world before it is ripe enough to eat. None are palatable in less than three months after apparent ripeness, but are said to be "melting" when once soft.

Jujubes and pistachio nuts are present in great variety, and among the late arrivals at the garden is a jujube specialist, C. C. Thomas, who has studied the trees and fruits in all parts of the United States. One ornamental is worthy of note as a rival of the oriental plane or sycamore for street and highway planting. A few years ago the writer recommended the latter as the only good tree that could be grown along a national highway from the Atlantic to the Pacific. The newcomer is an elm, native from Turkestan to Siberia and North China. Its name is *Ulmus pumila*, and though never a large tree, is of sufficient size for street planting and not slow of growth for the first few years. H. E. Allanson of the station staff says he has seen it at Mandan, South Dakota; Washington, D. C.; in the state of Washington and elsewhere, and in all these widely separated places it appears as thrifty, as much at home, as it surely is in all parts of California. These are but a few of scores of interesting plants now on trial in this great garden.

Citrus Blast

Citrus blast has occurred in various places in the Sacramento and San Joaquin Valleys and foothills and varies greatly in severity. The places and seasons with the most wet weather have most blast. When the trees are kept dripping wet for long periods the conditions appear to be particularly favorable for the disease. The blast has not been commercially serious in the drier places where it occurs.

Spraying with Bordeaux mixture greatly reduced the severity of the disease although not preventing all injury. Sprays with other materials gave less control or none and late sprays (after December 15) with Bordeaux were of little if any value.

Succulent foliage formed late in the season suffers worse than short well matured fruiting twigs. All very succulent shoots of the first year are liable to severe injury. This suggests that all possible skill be used to keep the trees in health with the smallest possible application of water in the summer and fall. This should also conduce to early ripening and high quality of fruit. Also no heavy pruning should be practiced as this causes the growth of large succulent slow maturing shoots. If such shoots are being formed it is probable that their character can be changed by pinching the tips before they become too long.

Navel oranges seem to be most susceptible; with seedling orange, pomelo, tangerine and lemon, less so. It is possible that the difference lies mainly in the greater tendency of the navel orange to form succulent shoots, but it is sufficiently pronounced to recommend the so-called seedling oranges and the various varieties of tangerines to the careful consideration of pros-

pective planters in the more susceptible districts.

Where many leaves are killed the foliage becomes thin and many twigs die leaving the tree depleted in vigor and with production reduced. Where the affected twigs remain alive the dead areas, sometimes an inch long, become reddish scabs and are shed off in three or four years by the growth of the bark below, it is stated.

The brown scabs were found to begin as watery dark patches, suggesting pear blight, but not so extensive; at first they are full of bacteria. H. H. Lee, a graduate student in the college of agriculture, studying these bacteria, was able to produce the disease at will by introducing them into healthy orange twigs and leaves. Additional phases of the study are being made at Berkeley and at Riverside under the direction of H. S. Fawcett.

BERMUDA POTATOES

The 1919-20 potato crop in Bermuda was disappointing as to quantity, being but two-thirds the yield of the previous season. But the prices were the highest ever known, averaging \$13 a barrel. Of the 20,000 barrels of seed potatoes used for the last crop, 6,000 came from the United States. Seed from the ensuing year will be largely secured from an American certified seed farm. The main fertilizer used is castor meal which costs \$72 a ton.

Effort is being made to associate members of the farm bureaus of Merced, Madera and Stanislaus Counties in cooperative buying.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Fence on Line

For the past 25 years I have maintained a fence between my own land and that of my neighbor. May I require my neighbor to pay for one-half interest in this fence and for the upkeep of the fence?—Subscriber, Arbuckle.

The rule is definitely laid down in respect to fences that co-terminous owners are mutually bound equally to maintain the fences between them unless one of them chooses to let his land lie without fencing, in which case, if he afterwards fences it, he must refund to the other a just proportion of the value at that time of any division fence made by the latter. You may, therefore, require your neighbor, if his land is otherwise fenced, to pay to you his proportion of the value of the fence at the present time and require him to pay for the upkeep thereof. If he neglects after demand in writing therefor, a judgment may be obtained against him with interest from the time of such demand for the amount due from him.

Pay for Grading

I graded land for a rancher purchasing his land upon contract. The grading was necessary in order that the land might be irrigated. He says that he has no money to pay. He is also working for wages and I am informed that I cannot garnishee. What are my rights?—Subscriber.

Any person, who, at the request of the owner of any lot or tract of land, grades, fills in, or otherwise improves the same, has a lien upon said lot for his work done and materials furnished and every such improvement done with the knowledge of the owner or any person having an estate in said land shall he held to have been performed and furnished at the instance of such owner and such interest shall be subject to the lien filed, unless such owner within ten days after notice of such work being done posts a notice that he will not be responsible therefor upon a conspicuous place upon the property and records a verified copy of said notice in the office of the county recorder. The notice must contain a description of the property, the name of the owner, and the nature of his title or interest. The lien in this case must be filed in the office of the county recorder within 90 days after the acceptance of the work and within 90 days after the filing of such lien an action must be recommended in the superior court to enforce said lien, in which action sale may be made of the real property in the like manner as the foreclosure of mortgages. If your time has not expired it would seem that if you take the matter up with an attorney who has some knowledge of the law, you might be able to obtain pay for your services. In this case, as in many other cases, the complaint against the law is based rather upon the inefficiency of the person to whom you have applied to take action than upon the law itself, as it would seem that the law would give you a perfect right of recovery.

Collecting Grocery Bill

I owed a grocery bill, but ceased dealing with that grocer and was paying the bill off at five dollars a month.

Without notice, grocer levied a garnishment upon my wages, although I am a married man with family. The constable serving garnishment claimed that he had placed a lien upon some real property which I possessed and collected various fees therefor. Is there no remedy?—Subscriber.

The earnings of the defendant for his personal services rendered at any time within 30 days preceding the levying of execution or attachment when it appears by his affidavit or otherwise that such earnings are necessary for the use of his family residing in the state and supported in whole or in part by his labor are exempt from execution, but where a debt is incurred by the defendant, his wife, or family for the common necessities of life one-half of such earnings above mentioned is subject to garnishment or attachment. In the above case the only lien which could be levied against any real property would be an attachment. The justice of the peace would be entitled to no fees to be collected from the defendant and if such justice of the peace served such papers or attempted to collect fees from the defendant you should take that matter up with the district attorney of that county as it might be that he has committed a serious offense. Anyone to whom an ordinary bill for goods delivered is owed may without notice file his complaint and issue process of attachment thereon. Ordinarily this is not done. In many instances such right is essential to the protection of the claim of the seller. This is another instance of ignorance of the law and possibly abuse of process rather than a defect in the law.

THE AMERICAN FARM BUREAU FEDERATION

(Continued from cover.)

A bureau of trades relations has been created and financed.

A bureau of legislation has already functioned in important national legislative matters.

A bureau of distribution has in preparation a line of work concerning national and world markets.

A bureau of education is just beginning to function in publicity and statistical problems.

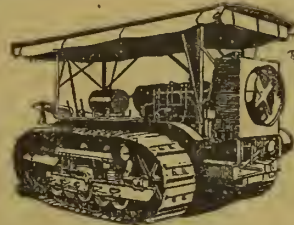
A bureau of economics has begun to work on farm credits, income tax, deflation of prices affecting agriculture, and the general business of farming and farm management.

The American Federation is investigating transportation problems, making a census of freight equipment of the railroads; looking into the livestock and packing business; showing its interest and opinion on the Nolan bill, the Volstead-Capper bill, the Truth in Fabric bill, the Townsend Highway bill, the Adamson law, the National Agricultural Appropriation, and legislation affecting strikes.

WILT RESISTING TOMATOES

The disease of tomatoes known as "wilt" has been very destructive this season, causing loss to home gardens in many sections, according to J. T. Rosa of the Missouri college of agriculture. This trouble is caused by a fungus in the soil which enters the plant through the roots, plugs up the water vessels of the stem and causes the plant to wilt down slowly. The disease usually does not appear until the plants are quite large, often not until fruit begins to ripen. The effect is to kill the plants prematurely so that little or no fruit is produced. Nothing can be done to save infected plants, and since the fungus lives in the soil for several years the tomato crop is likely to be attacked still more severely in succeeding years. Furthermore, the disease is easily spread by tillage tools, wash water, or the feet of animals, so when one spot in a garden becomes infected, soon the whole garden and then the neighboring gardens get "tomato sick."

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Just because it has earned world-wide fame in the exceptional jobs—the almost impossible work—don't lose sight of the fact that the "Caterpillar" Tractor's greatest merit lies in its ability to do the ordinary work extraordinarily well and economically. Every job—big or little, difficult or easy—in which trouble-free power is needed, is a "Caterpillar" Tractor job. Let us show you how.

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Trees, Plants, Shrubs direct from nursery to you. For windbreaks, hedges, and beautification. WRITE FOR CATALOG, which illustrates and describes best varieties for California conditions.

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Model "K" Throttling Governor Kerosene Engine. Users recommend it because of its wonderful service and great economy in operation. Special catalog No. 22-A tells all about the Model "K"—what it is doing for others and what it can do for you. Write today—it's free.

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Easy To Start

TRY THEM 10 DAYS FREE

Overland Aluminum Soled Shoes greatest boon for farmers and workmen. Wear like iron. Easy fitting, light and highly comfortable. Cool in summer, warm in winter. Positively weatherproof. Keep feet healthy, support arches. An ideal shoe. Try them at our risk.

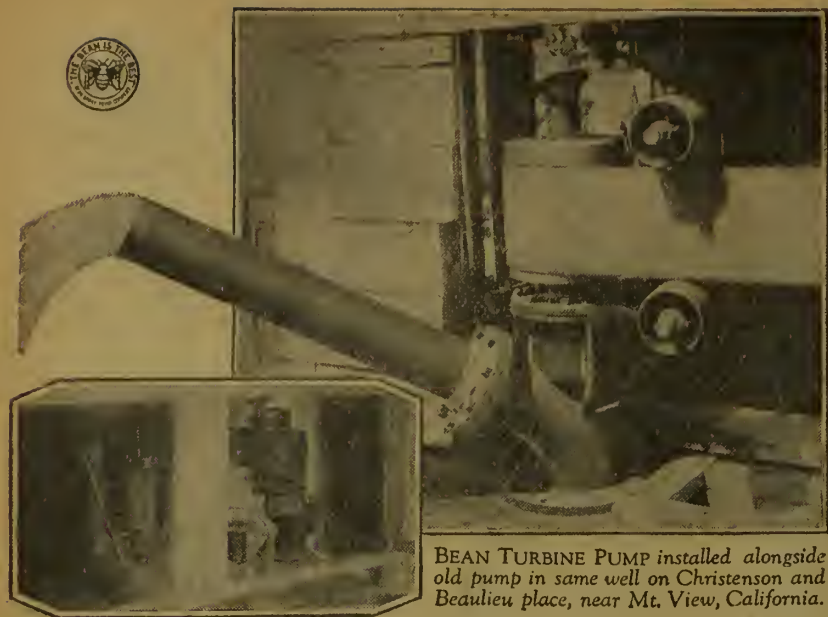
Send name on postal for FREE illustrated and valuable catalog and details of our offer. Send no money.

Write today.

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THIS CATALOG FREE

When Writing Advertisers Mention California Cultivator



BEAN TURBINE PUMP installed alongside old pump in same well on Christenson and Beaulieu place, near Mt. View, California.

Back to Life Again!

(Clip Out and Mail)

BEAN SPRAY PUMP CO.
121 W. Julian Street
San Jose, Calif.

Distance to water below surface of ground _____
Probable distance to water when pumping _____
If water is to be raised above surface of ground, how high? (Length and size of pipeline) _____
Volume of water desired (Gals. per min.) _____
(Inches) _____
If you have pit, give width _____ length _____ depth _____
H.P. of motor or engine if you have that equipment _____
Give total depth of well _____
Inside Diameter of well _____
Is well straight and true? _____
Is electric power available? _____
Name _____
Address _____
Rural Route No. _____
(50-73) Box _____

Christensen & Beaulieu of Mt. View, California, were up against the problem that is now facing ranchers all over the state. The water level in their well had fallen so low that their old vertical pump wouldn't get more than half of a supply.

They might have dug the old pit deeper, and worried along a while with the old pump—but they weren't going to be satisfied with temporary makeshifts. They wanted permanent results! So they installed a Bean Turbine in the same well where the old pump worked—and they got permanent results—

- they have a good supply now.
- a good supply insured for the future.
- pit dangers eliminated.
- money saved.
- time saved.

If your water levels are lowering, your problem is the same—solve it with a Bean Turbine.

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Branches: Fresno Los Angeles

Bean

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supply the right forms of plant food for the greatest fruit production. They are made of selected materials, combined according to the Bradley fertilizer experience extending over sixty years—two generations.

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RELIABLE Seeds

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This Month in the Ornamental Garden

Southern California

By Ernest Braunton



ANY professional gardeners call October the bulb month, and if it prove a cool spell with no prolonged warm weather following bulbs planted this month surpass in floral return those of any other period. It is already into the Watsonia season for they may be as profitably planted in September, but nearly all other bulbs may be planted now. Anemones, freesias, gladioli of the Bride, Blushing Bride and Peachblow type are the first three alphabetically and we must pause to recommend the latter. They represent the dwarf type of gladioli and are of more exquisite color and texture than the larger or summer "glads."

Hyacinths, iris of the Spanish and English types, lilies of many sorts, narcissi of all kinds, ranunculi, or French buttercups, and tulips are but a few of a long list now seasonable to plant. Those generally known as Dutch, or Holland, bulbs are awaiting a place in the garden.

All bulbs do best in a rich free loam, but are often injured by fresh manure, therefore use none but that well rotted, or a commercial fertilizer. In either case thoroughly mix it with

the soil by spading and respading. Where sand is easily available, especially if the soil be heavy or of close texture, it is well to first place a handful of sand under lily bulbs and one on top so the sand will drop down in the scales of the bulb instead of soil containing fertilizer, which may start bulbs rotting.

In seeds of annuals and perennials for present planting the list is a long one, as any seedsman's catalogue will disclose, but a short list of the more common, more easily grown should contain: calendula, Canterbury bells, centaurea, coreopsis, columbine, cockscomb, foxglove, larkspur, mignonette, pansy, petunia, phlox, salpiglossis, salvia, scabiosa, snapdragon, stock, sweet pea, Sweet William and others of the dianthus group of the pink family.

Any plants of these available may now be planted, also clematis, lobelias, primulas, and verbenas. Evergreen trees and shrubs, except those from the tropics, transplant well, and begonias, fuchsias and marguerites easily propagate from cuttings. Roses should be thinned of weak and thick growths, but need not be otherwise pruned until spring. Cultivate and fertilize them heavily.

Northern California

By A. R. Gould



INDICATIONS are for an early planting season. Probable early rains will encourage garden lovers to plan extensive operations.

New shrubs will be secured and the collection of roses added to. Most subjects may be safely transplanted from now on and perennial plants may be subdivided.

Bulbs of all kinds should be put in without delay. A glance through the lists offered by the seedsman will give an idea of the wonderful shades one may secure in the tulips, these having become very popular. Whatever you plan to plant, study your soil and apply manure where needed. It is waste of time to plant in worn out soil. Manure and cultivate between the roses and keep well sprayed, as the aphid or green fly will be very prevalent. Tie up any long branches of climbing roses to the arches or trellis. The same applies to the wistaria and other vines which have made good growth this season.

Winter Flowers

We shall deal with the bulbs under another heading, but here we mention the following, which will bloom for some time and make the garden cheerful during these winter months. Sweet peas of the winter flowering types, forget-me-not, wallflowers, alyssum, stocks, violets pansies, English daisy, anemones, ranunculus, primula and marigold. Secure plants of these if you would have a continual display of color.

Some Useful Climbers

Many people have arches, bare fences or porches to cover and usually are in need of some quick growing climbers. Some varieties of roses, such as Cherokee, pink, Cecile Bruner, American Beauty, White Banksia, Silver Moon, Excelsa and Glorie de Dijon are all suitable. Clematis Jackmanii and C. paniculata are both desirable. Honeysuckle is an old fashioned fragrant vine and jasmine officinalis, the pure white flowering type, is, also. Passiflora, pink and scarlet, are both good. Wistaria comes in purple, pink, lavender and white and is very popular. These are all flowering vines and may be planted now near the house or trellis. For covering old tree stumps English ivy or the mattress vine would be ideal, while for banks vinca, nasturtiums and mesembryanthemum are ideal.

Bulbs

A general survey of the bulb list and past experience of some of the varieties named lead us to advise as

follows, the select list giving the very best, which should be secured as soon as possible, as they are usually none too plentiful. Some seedsman send out their own mixture of Dutch and Roman miniature hyacinths, which include a fine range of colors. For named large flowered we advise planting: Gertrude, deep rose; Rio des Belges, scarlet; Enchantress, light blue; Grand Maitre, deep blue; Sunflower, buff yellow; L'Innocence, white. Tulips—Single early, Artus, scarlet; Cottage Maid, pink; Golden Queen, pure yellow; Double Early Boule de Neige, white; Rubra Maxima. Parrot tulips have brilliant markings. Narcissus, under which are included daffodils, should be in every garden and are some of the earliest to flower among the bulbs, especially the Polyanthus types. Large trumpet flowered narcissus are Olympia, King Alfred, Glory of Leiden, Emperor, Sir Watkin, double daffodils, Von Sion, Silver Phoenix, jonquill campernelle, poet's narcissus. For bordering the walks crocus are very useful and they flower in the early spring. They may be secured in mixed colors or in blue or yellow shades.

Perennials

Sweet William, pyrethrum, rudbeckia, Thalictrum dipterocarpum, veronica spicata, Stokesia and Tritoma.

POINTERS ON PAINTING

Paints and painting cost less than repairs necessitated by decay or disintegration.

There is no such thing as an all-service paint. Paint should be selected according to the material to be painted and the conditions under which it must give service. The wear on a floor is more severe than on a wall; hence the floor calls for a tougher, more elastic paint.

Painting should not be done when the temperature is lower than 50 degrees Fahrenheit, as the paint will not flow well. It is impractical to paint a hot surface. The old painting axiom is: In spring and fall follow the sun; in summer follow the shade.

Outside painting should be done in dry weather. Surfaces should not be painted when wet.

Surfaces to be painted should be gotten as smooth and clean as possible. They should be free from grease. If painting new wood, knots and sappy surfaces should be shelled first. If painting over previously painted surfaces, all blisters and loose or peeled spots should be scraped or burned clean. A brushing with a stiff wire brush followed by sand



Airplanes

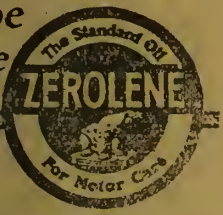
An airplane in operation gives the most severe test to the quality of an oil—and Zerolene meets the test successfully.

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Mariout Seed Barley

Good Clean Seed raised in
Southern California from
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paper is good practice.

A priming coat usually pays for its cost. A firm base for the final coats is very essential to insure long service. The primer should be thin enough to penetrate the lumber; it should be well brushed in.

Only pure linseed oil or pure turpentine should be used to thin paint.

Although frequently used, ochre is not a good primer. The primer should be of as good quality as the body coats but reduced to the right consistency. Elbow grease is a very good thing to use on paint, especially the priming coat.

If the paint is cracked in small hairlines which do not go through to the wood, reduce the first or priming coat with equal parts of raw linseed oil and turpentine, in order to penetrate clear through to the wood. This only applies where the old paint is well bound to the surface.

If the old paint does not adhere well, scrape the surface with a stiff wire brush to remove all scale, then dust with a stiff brush.

Spots from which much of the old paint is scraped should be touched up with a thin coat of paint, reduced with turpentine.

After this has dried the surface is ready for the first coat.

Paint may peel from any one of several causes, but the most frequent cause is the improper application over a damp or frosty surface.

Paint that is peeling rolls back from the surface in thin scales. A coat of paint put over a seemingly good surface will sometimes peel down to the bare wood or to the priming coat, showing that the old paint has lost its grip.

Be on the lookout for this condition when repainting surfaces. The old paint surface should be well wire brushed and dusted, after which the bare spots should be touched up with a thin coat of paint, reduced with pure turpentine.

When these spots are dry, paint over with the first coat.

Blistering is easily recognized and is caused by moisture having come out of the surface under the paint or from priming with cheap ochre.

When this condition exists wire brush and dust the surface, then wash with turpentine to cut any grease or excess oil which may be present.

After this is dry proceed as directed for first coat work.

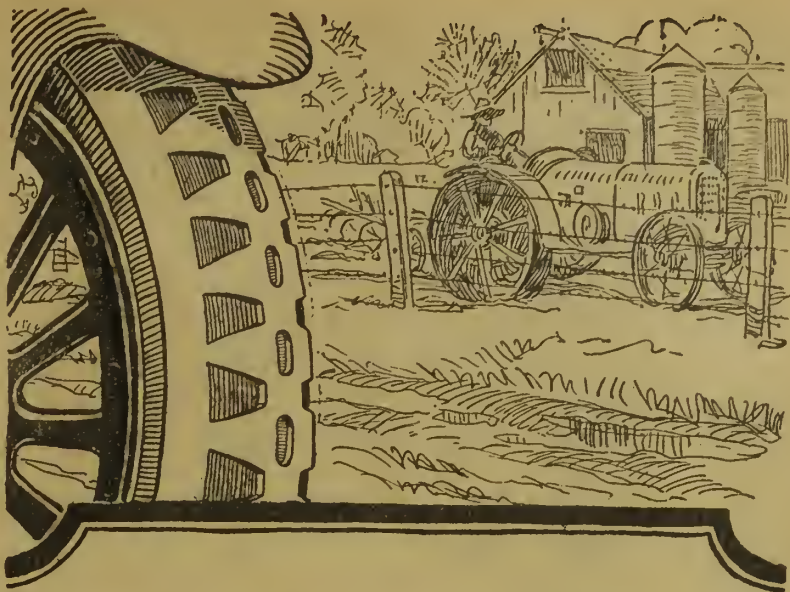
When the paint cracks into large blocks of every conceivable shape (becoming alligatored, so-called) it is caused by the application of heavy, non-drying undercoats, "flat" paint, the use of adulterated oils or from painting over cheap ochre priming. Boiled linseed oil in the under coat will also produce this condition.

The only treatment is to burn and scrape off the paint down to the bare wood.

SUDAN GRASS IN NORTHERN CALIFORNIA

Near Kelseyville, Lake County, on the Shirley ranch, there was grown in 1920 a total of 30 acres of Sudan grass, some of it as a cover, feed and seed crop in a young pear orchard, but for the most part in solid fields. Experiments have proven that it needs much space for best development. J. E. and J. P. Shirley were found in the field and stated they had grown it in rows from 30 to 42 inches apart and that best results came from the latter. The growth on this ranch is extremely vigorous, some measuring fully eight feet high.

The amount of seed used in this section, known as Big Valley, ranges from two and a half to four pounds an acre and is drilled in in early spring, planting time varying with the seasons, and is usually cultivated three or four times. It is grown primarily for the seed crop, yielding a ton and a half to the acre and selling (1919 crop) at ten and one-half cents a pound. One of the Shirleys said the straw is worth five to six dollars an acre and the high stubble and roots are deeply plowed under to form humus. The crop is cut in late August with binders, same as with other cereals. This is the third year's crop on the Shirley ranch and it has paid well. The estimated 1920 Sudan seed crop for Big Valley is about 200 tons. —E. B.



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When Writing Advertisers Mention California Cultivator

Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Fish Fertilizer on Oranges

Will you kindly give me the amount of fish fertilizer necessary to fertilize a five acre Valencia orange grove and the way to use it for the best results? Do you think this fertilizer good?—Subscriber, Garden Grove.

Fish fertilizer is rather indefinite and may refer to scrap, meal or tankage. The difference in value is slight, only the scrap is supposed to contain a higher percentage of nitrogen. But this matter of fertilizers depends on so many other factors that only the most general information can be given. But roughly, on Valencia orange trees apply one pound of any of the three kinds of fish fertilizer per tree per year of its age. That is, if the tree is one year old apply one pound; if five years old, five pounds. However, if on arriving at maturity of the tree, then 20 pounds would be the maximum, no matter how old. These fish fertilizers contain approximately eight per cent nitrogen, 60 per cent phosphoric acid and no potash whatever. They are not as quick acting as dried blood or ordinary slaughter house tankage, and are more liable to contain fats which prevent decay and nitrification, so that they should be applied somewhat earlier than blood and several weeks earlier than nitrate of soda. January is perhaps a good month to make the application, so that they will come into action in time to encourage spring growth.

Winter Potatoes

I would like to have the important information on raising a winter crop of potatoes: The kind that grows and yields best in winter and is most marketable; also best time to plant. My soil is rather loamy and I can irrigate. The climate is temperate.—Subscriber, Ventura.

The key to the situation is frost. If your section is sufficiently free you may successfully grow winter potatoes. They are grown in the coastal foothills near Los Angeles from Santa Monica to San Pedro with abundant success. Neither variety nor treatment differs from that of spring or autumn potatoes so often treated in recent issues of the Cultivator. White Rose seems to be the preferred variety, but we have no proof of their superiority over some others. They are planted in the section noted in November, December and January.—E. B.

Canning Refuse on Orchard Soil

I am living near a fruit cannery and have given them permission to dump their pear and peach peelings in my prune and apricot orchard, believing it would fertilize the ground. Now one of my neighbors tells me it is harmful to the orchard and will sour the ground.—Subscriber, Campbell.

We would by all means use any of this refuse which may be secured. The same question has been raised as to citrus fruit and we remember one year after severe injury by freeze refuse lemons were dumped on orchard soil to the depth of one foot. These were later plowed under or at least partly turned in for they were so deep that they could not all be turned under, and the soil was later declared to be one of the best portions of the ranch.

Specifications for Dairy Barn

Please give specifications for a modern cow barn designed to have the cows' heads to the center of the building?—S. H. A.

It is impossible to give these specifications because of space required. Besides, without knowing more of the number of cows in dairy and numerous other conditions on the ranch even an architect would be unable to plan, but some of the general requirements in the modern dairy barn, such as width of feeding alley, length required for large and small breeds of cattle, depth and width of butter and clearance behind may be given as general

suggestions. This has been referred to G. E. Gordon, who answers:

It is quite difficult to give specifications without showing blue print plans. However, a very good system when the cows' heads are towards the center of the barn is to have the pathway below the two rows of stanchions slightly raised from six inches to a foot above the mangers. This makes feeding quite easy and the mangers can therefore be built in the barn from concrete when the floor is being constructed. The distance between the stanchion and gutter is usually about 4 feet 8 inches. With small breeds this can be cut down slightly or with large ones it can be lengthened. The gutter may be about 12 to 14 inches in width and varying in depth depending upon the slope and drainage facilities.

I would suggest that if you are going to build a barn you write Division of Agricultural Extension, College of Agriculture, Berkeley, California, for a copy of their blue print plans of Standard California Type Milking Barn, which they will be glad to loan you.

Melilot and Barley

Would like to know how to get melilotus started in September. The hot winds dry out the land as fast as it is irrigated, and in furrowing to irrigate it seems to be covered too deep to come through except a little along the bottom of the ditch. They speak of sowing it in September around Los Angeles; they may have a better way; would like to know what it is. Why is barley not used more for a humus crop? It grows quickly and produces well.—Subscriber, El Cajon.

Your only remedy would be to sow as quickly as possible after irrigation and cultivate deeply with a spring-tooth or a weighted harrow. The seeds will come up. But it would be better to use a crop having larger seeds. In the sandy and gravelly soils below Glendora best results come from vetch and doubtless the same would prove true with you. Barley is a fine cover crop for humus, so is rye, but neither gathers nitrogen through bacteria resident on the roots, as do leguminous crops.—E. B.

Trees Immune to Nematodes

Are there any varieties of fruit trees not affected by nematodes? Is any effort being made to find a remedy for the pest?—Subscriber, El Cajon.

No fruit trees immune to nematodes have yet been found, though investigation is going on.

Permanent Pasture

Please suggest a seed mixture to sow for permanent pasture for cow and horse and that could carry a few hogs part of time. Soil is slightly heavy, not real clay but lacking humus. Must depend on rains for water. How soon could it be used after seeding? Can Napier grass be subdivided after October 1, or would it be better to wait till spring? I have one plant about five feet high, probably 50 shoots in it, that I wanted to leave to mature seed so I could use the canes for planting. In case they don't mature, could it be left uncut over winter and planted in spring?—Subscriber, Sacramento.

The time is late for autumn planting and too early for spring planting. Of course barley will give you the best winter forage crop if sown 50 or 60 pounds to the acre, and there then remains enough time to sow a spring crop. Or ten to 20 pounds may be sown for a nurse crop. Nothing will be better. You may also sow melilotus alba, the sweet clover, for immediate results, and put in at same time Rhodes, Bermuda, and Paspalum dilatatum. The three latter will not be seen until spring, but the white melilot or sweet clover could be grazed off in the meantime. One may also sow for immediate grazing: smilo, alfalfa or bur clover. It would be well to sow a mixture of the whole list. It is very difficult to know what will do best on your land. It is not well to divide the Napier now. Leave it until spring for both division of

roots and planting of chopped up stems. You must harrow your soil thoroughly.

Melilot Without Irrigation

Would like to know about sowing Melilotus Indica on light red soil without irrigation. Soil on top of hard pan varies from eight inches to two feet. When is best time to plant? Soil does not dry out until June.—Subscriber, El Portal.

You have no alternative but to sow it later, preferably after first rain. If



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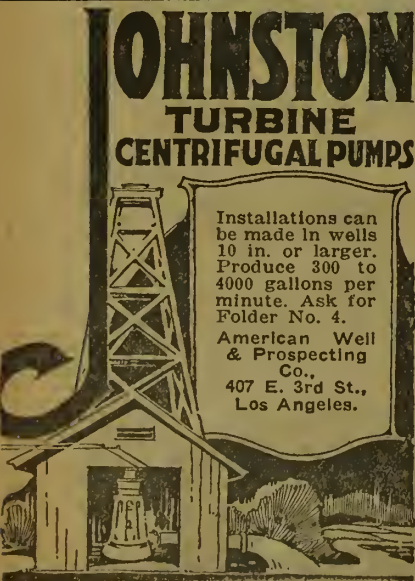
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soil retains moisture in good supply until June you have ample time either to mature it or turn it under when convenient.

Feed During Molt

Will you kindly answer the following questions?—Subscriber, Hemet.

What is the best mash formula for laying hens during the molting season?

Some poultrymen add a small quantity of linseed meal (not more than 2½ per cent) to the regular mash, but the more general practice is to feed the dry mash as before, and in addition to this, once a day, a moist mash. This moist mash may be prepared in a variety of ways. Sometimes the regular dry mash is moistened with semi-solid buttermilk properly diluted or with some other milk preparation. Sometimes, if the poultryman has his own cow or can purchase real buttermilk or sour milk at a reasonable price, he need not look for a substitute. When the flock is small it is a good plan to cook up all kitchen waste once a day and thicken with bran alone or with a dry mash mixture. The aim is to give the birds a little something different to stimulate the appetite.

Do you advise feeding any kind of poultry tonic during the molting season only? If so, what?

Molting is a perfectly normal function, not a disease, and if hens are well cared for and kept in good condition by proper feeding little or no medicine is necessary. But while going through the moult the flock, on account of the extra drain on the system to supply new feathers, is feverish and more susceptible to disease. There are a number of good tonics advertised that if used in conjunction with cooling feeds at moulting time will lessen the possibility of disease and tend to shorten the moult. The most vigorous birds often molt so gradually that production is hardly affected. You notice a few feathers on the floor, some roughening or thinness of plumage, that is all. A splendid way to get hens through the molt is to turn them out into the orchard where they have some green range and a chance to pick up bugs and worms to help out their regular ration.

I have had a good deal of bowel trouble in my flock this summer, caused, I am satisfied, by the laying mash. I tried several prepared mashes, all containing beef scrap. Do you consider mashes containing dried buttermilk or the use of Lactein safer? Some of the mash I used I mixed with an equal amount of bran or mill run.

I have had no experience with either dried buttermilk or Lactein. I doubt if any of the milk preparations contain sufficient protein to entirely take the place of meat. You must have some meat scrap in your mash to keep the hens up to the required production. It is just possible the bowel trouble was not due to the meat scrap but to something else in the ration, or possibly to poor sanitation, poor ventilation causing colds or to impure water. If you prefer mixing your own mash you can test your beef scrap and know whether it is sweet or not. Put a little in a cup and pour boiling water upon it. If it gives out a nice, meaty odor, it is all right. If it smells like fertilizer, beware. When you have found the right kind of scrap, mix it with bran, feed meal and middlings in the proportion of two parts bran, one part middlings, one part feed meal, one part beef scrap. This is by weight. As long as the bowels are not normal it would be better to use less scrap. Bring it up gradually to the proportion given when you see it has no harmful effect. Too much of even the best scrap sometimes has a laxative effect. It is a good plan once in a while to give plain bran without any meat for a few days. Hens will lay fairly well on it, and if they are sensitive to meat it gives them a chance to rest from the more forcing mash.

Fig Failure

We have a large fig tree which we call the White Honey, but are not certain as to the real name. It has been fertilized and is irrigated regularly. Last year in fruiting time it lost practically all its leaves and the fruit was stunted and rather dry. This year it is retaining its leaves though they are undersized and rather weak

looking, while the fruit though plentiful is about the size of a thimble when ripe, while formerly the matured fruit was as large as a hen's egg. What is the trouble and is there any cure for it?—Subscriber.

This tree seems to have had good care but irrigation may still have been too superficial, not penetrating deeply enough. Address of subscriber is not given so we know nothing of soil conditions, but we believe this trouble due to hard pan. Striking an impervious soil layer will of itself stunt a tree but if heavily irrigated the trouble is aggravated. An excess of stagnant soil water in hot weather quickly decomposes and sets up a poisonous condition fatal to plant life. We would recommend digging down three or four feet to ascertain if drainage is good and if not, making it good.—E.B.

Fern Culture

I have been given a nice lot of mountain fern roots. Am anxious to have them do well but do not know how best to treat them. Have heard that oak leaves make the best mulch. Are cork elm leaves good? Any information about the making of the soil and the care of the ferns will be received with pleasure. — Subscriber, Woodland.

Mountain ferns need mountain treatment—cool air and shade. Leaf mold is the best soil and you cannot have it too rich. In your neighborhood you should be able to find, under large oaks, the best of soils. Take dry leaves and the top of two or three inches of soil and work this into the garden soil where the ferns are to grow. Do not avoid taking dry leaves as well as soil for this mixture has proven more beneficial than pure rotted leaf mold. Rotted and rotting elm leaves should serve equally well. Before working mold into soil dig up as deeply as possible for ferns need free drainage.—E. B.

Napier or Elephant Grass

I have several bunches of Napier or Elephant grass. How shall I treat it and when should I cut it for planting the joints next spring?—Subscriber, San Jacinto.

Allow it to remain as it is, if possible, or transplant to warm protected spot. It will start best from ripened but fresh stems. If cut, leave until well ripened and store in cool dry place where it will not dry out. It is best bound in bundles if not green enough to mold. Cut up and plant the joints about April 1.

Pig Club Boy Asks as to Feed

I am going to join a pig club and I would like to know if Indian corn, Gyp corn and barley ground together would be advisable for growing pigs. I will also have skim milk.—Roscoe Bessey, Strathmore.

Either of the grains mentioned fed separately or mixed in equal parts will prove satisfactory. Ordinarily Indian corn has about ten per cent more value when fed to pigs than the other grains named. Therefore, prices being equal, it would be better to use corn. The choice of feeds will depend upon the current prices — use the cheapest. In this connection it is well to bear in mind that none of the grains will prove efficient when fed alone and each or a mixture of the three should be supplemented with some protein concentrate such as skim milk, tankage, linseed oil meal, fish meal, etc. If skim milk is available you have the best supplement for the grains that we know. In the feeding of skim milk it will be found that, with pigs weighing less than 100 pounds, four to six parts of milk to one part of grain will prove most economical, and with pigs weighing 100 pounds or more that the most economical ratio will be three parts of milk to one part of grain.

Drying Up Cows

I have two cows soon to freshen. One is due about the middle of November and the other the last week in December. How soon should I begin to dry them off and what is the best method?—Subscriber, Modesto.

It is quite customary to give a cow a rest of six to eight weeks before calving in order that she may gain in flesh and vigor. The most common

method of drying off cows is to cut down the amount of feed and give less of the kinds that tend to stimulate milk production and gradually stop milking the udder entirely dry. If she is not giving over 20 pounds per day and does not have a tendency to udder trouble it is safe to milk but once a day and when reduced to ten pounds per day to discontinue milking. In drying off a cow care should be exercised in watching the udder in order to guard against udder trouble.

ARGENTINE COTTON

Trade Commissioner G. S. Brady, Buenos Ayres, reports that a German company has been formed to stimulate the growth of cotton in Argentina and thereby release Germany from dependence upon American raw cotton. The company is said to be made up of men directly interested in cotton goods manufacture, and the intention is not only to encourage Argentine production of cotton but also to create extensive German owned plantations in the north of Argentina.

Canvass of labor needs in cotton fields of San Joaquin Valley is being made by the Valley Fruit Growers Association, the Bakersfield Cotton Growers Association and W. B. Camp, cotton specialist of the U. S. bureau of plant industry.



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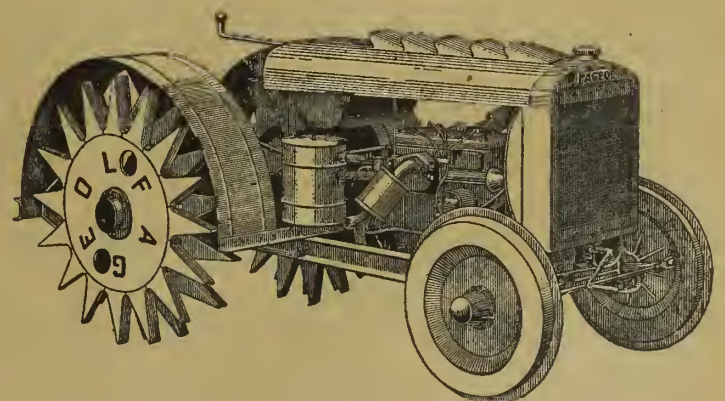
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Thursday, November 4

45—Registered Herefords—45

This is the regular fall offering of picked tops, known more popularly as the "Association Sale." Hereford breeders all over the coast have been striving constantly toward the improvement of their herds, and it is only natural to expect advancement in quality in each succeeding sale of picked cattle.

Foremost herds of the west will be represented in this sale, and the buyer who wants to add one or more extra choice animals to his herd, or the beginner who wants to start with that sort of foundation will find ample range of selection in this offering.

Sale under auspices of

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Friday, November 5

NEVADA HEREFORD RANCH

WILL SELL

55—Registered Herefords—55



Beau Blanchard 76th

HARRIS STANDARD 2ND is as well bred as any bull in the United States and is a wonderful sire. Our show herd for the past three years has shown some evidence of his breeding ability, but to be fully appreciated you must see the uniform excellence of his entire get on our ranch. His get have never been defeated in the Get of Sire class.

IN THIS SALE we will sell over 30 heifers sired by him, and many of them are safe in calf to BEAU BLANCHARD 76TH. Others will be bred to ABE MISCHIEF, by Mousel's mighty Beau Mischief, and to BOCALDO 21ST, by Hazlett's Grand Champion, Bocaldo 6th.

This is the first individual public sale offering made by NEVADA HEREFORD RANCH, and we believe the quality of the offering to be a credit to this herd, and one in which the buyer may rightly expect to secure correct breeding animals.

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At 1920 California State Fair, BEAU BLANCHARD 76TH was Grand Champion in the greatest Hereford Show ever staged at Sacramento, and his young son PILOT, out of a Harris Standard 2nd dam, owned and exhibited by Wm. Briggs, Dixon, was first junior bull calf and Junior Champion.

Four of the first calves sired by BEAU BLANCHARD 76TH, and out of Harris Standard 2nd dams, bid well for high honors in the individual classes, and in the Get of Sire group stood second only to the get of Harris Standard 2nd. Remember that in this sale a large number of HARRIS STANDARD 2ND heifers sell bred to BEAU BLANCHARD 76TH.



Harris Standard 2nd

Owners:

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Saturday, November 6

50—Registered Herefords—50

This offering rounds out the greatest Hereford selling event yet attempted in the breed's affairs in the west, and fits into the three days offerings especially well.

There will be a liberal number of cows, practically all young, and a number of them with calves at foot by richly bred sires. The cows themselves represent some of the most highly approved Hereford families and may well be rated as desirable breeding females of great usefulness.

The offering contains an especially interesting lot of heifers of substantial breeding, the sort that promise to develop into desirable and profitable breeding matrons.

Owners:

BARNGROVER & WRIGHT, SANTA CLARA, CALIF.

Every animal in the three offerings listed above is positively guaranteed to be a breeder; every animal over six months old tuberculin tested and individual certificates furnished.

For catalog of any or all sales, write the management.

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneer: Col. Ben A. Rhoades, Los Angeles

In the Ring: John A. Bunting, Mission San Jose

The Kings County Fair

By J. P. Bennett



THE Kings County Fair Association held its seventeenth annual meeting at Hanford, September 20 to 25.

The fair from a standpoint of attendance was hardly up to expectations. However, the various displays were of excellent quality and were a strong testimonial to the high standing of Kings County as an agricultural and livestock center.

The large fruit crop now being gathered in this vicinity had much to do with keeping the attendance down, many people feeling too busy to attend the fair at this time. However, the men in charge did their part in providing a first class show that was well worth the effort spent in the advancement and upbuilding of the community.

The Cattle

A very creditable display of cattle was made. In fact, this was the strongest feature of the livestock show. Several herds were in competition and included many state fair winners.

The Holsteins were most strongly represented in numbers with Jerseys playing a close second. John Troup, Santa Barbara, judged the cattle in a highly capable manner.

A. B. Comfort, Fred Ross and J. W. Arthur, Hanford, showed Holsteins. J. E. Thorp, Lockford, and A. A. Perkins, Tulare, showed Jerseys. Chas. L. Weaver, Tulare, and E. B. McFarland, San Mateo, were the only exhibitors in the Shorthorn and Ayrshire classes.

The awards follow:

Holsteins

Aged bull—1, Arthur on Prince Gelsche Korndyke.

Junior yearling bull—1, Comfort on De Kol Segis Wayne.

Junior yearling bull—1 and 2, Ross on Rossmead Johanna Yerba and Rossmead Westport Lad. 3, Comfort on De Kol Juliana Mead.

Senior bull calf—1, Arthur on Rossmead King De Kol. 2 and 3, Comfort on Duke Riverside Wayne and King La Polka Lad.

Junior bull calf—1 and 2, Arthur on Creamcup Fidessa Burke and Creamcup Gelsche Walker.

Aged cow—1 and 2, Arthur on Alma Goldstone Girlie and Copa De Ora Holland Bawn. 3, Comfort on Peg o' the Mist Holland.

Two year old cow—1, Comfort on Juliana Pietertje Segis. 2, Arthur on Rossmead Bell Juliana. 3, Comfort on Wisconsin Ormsby De Kol Segis.

Senior yearling heifer—1 and 2, Arthur on Rossmead Colantha Rose and Rossmead Wayne Holland. 3, Comfort on Dora Snowflake Juliana 2nd.

Junior yearling heifer—1, Arthur on Lady Constance Beauty.

Senior heifer calf—1, Comfort. 2 and 3, Arthur on Rossmead Juliana Bess and Rossmead Bell Juliana Walker.

Junior heifer calves—1 and 2, Comfort. 3, Arthur.

Aged herd—1, Arthur.

Breeder's young herd—1 and 3, Comfort. 2, Arthur.

Get of sire—1 and 3, Comfort. 2, Arthur.

Produce of dam—1, Arthur. 2, Comfort.

Senior and grand champion bull—Arthur.

Senior champion bull—Arthur.

Senior and grand champion cow—Arthur.

Junior champion cow—Comfort.

Jerseys

Aged cow—1, Thorp on Nana of Mossdale. 2, Jenkins on Irene's Cadora.

Two year old cow—1, Thorp on Goldie's Nehalem Cowslip. 2, Jenkins on B. S. V. Leora. 3, Thorp on Bonnie of Mossdale 2nd.

Senior yearling—1, Thorp on Violet of Mossdale. 2 and 3, Jenkins on Golden G. Blossom and Golden G. Lilly.

Junior yearling—1 and 2, Jenkins on G. G. Louise and G. G. Beth. 3, Thorp on Queen Bess of Mossdale.

Senior heifer calf—1 and 2, Thorp on Girlie of Mossdale and Jolly Emerto of Mossdale. 3, Jenkins on Gertie's Golden Mary.

Junior heifer calf—1, Jenkins on G. G. Nana. 2, Thorp on Ramona of Mossdale. 3, Jenkins on G. G. Clara.

Aged bull—1, Thorp on Jolly Senator Raleigh. 2, Jenkins on G. G. Victor.

Two year old—1, Jenkins on G. S. V. Financial Owl.

Senior yearling—1, Thorp on Biddy's King of Mossdale. 2 and 3, Jenkins.

Junior yearling—1, Jenkins on G. G. King Pogis. 2, Thorp.

Senior bull calf—1 and 2, Jenkins on G. G. Victor Lad and G. G. Tony. 3, Thorp on Fairy Boy of Mossdale.

Junior bull calf—1, Thorp on K. F. Buttercup King. 2 and 3, Jenkins on G. G. Fox and G. G. Rex.

Aged herd—1, Thorp. 2, Jenkins.

Young herd—1, Jenkins. 2, Thorp.

Calf herd—1, Jenkins. 2, Thorp.

Get of sire—1, Thorp. 2, Jenkins.

Produce of dam—1, Thorp. 2, Jenkins.

Senior and grand champion bull—Thorp on Jolly Senator Raleigh.

Junior champion bull—Thorp on Biddy's King of Mossdale.

Senior and grand champion cow—Thorp on Nana of Mossdale.

Junior champion cow—Jenkins on G. G. Nana.

The Swine Show

Kings County has long been noted for pork production and the strong interest taken in pure bred swine, especially Poland Chinas. The show this year was on a par with previous shows. The pens were full although only two breeds were represented, Poland Chinas and Durocs.

Bassett Bros., Fred Ross, C. A. Vaughn, W. L. Haag & Son, all of Hanford, and H. D. McCune of Lemoore showed Poland Chinas; J. E. Thorp, Lockford; D. G. Cummings & Son, Visalia, and F. B. Ellis, Exeter, showed Durocs.

C. R. Doty, Los Angeles, judged both breeds in fairly satisfactory manner.

Poland Chinas

Aged boar—1, Bassett on King's Timm. 2, Ross on Big Timm. 3, Bassett on King's Gerstdale Jones.

Senior yearling—1, Haag & Son on Lendoris Liberty Bond. 2, Bassett on Model Giant.

Junior yearling—1 and 2, Bassett on The Comet and California Inspiration. 3, McCune on Pacific Prospect.

Senior boar pig—1, Haag & Son on Lendoris Liberator. 2, Fred Ross.

Junior boar pigs—1, McCune. 2 and 3, Bassett.

Aged sow—1, Bassett on Columbus Lady. 2, McCune on Edith Rose. 3, Bassett on Hopeful.

Senior yearling—1, Ross on Mollie's Ideal. 2, Bassett on Joe's Big Lady.

Junior yearling—1 and 2, Bassett on Gerstdale's Best and Miss Bob Orange.

Senior sow pig—1 and 2, Bassett on Timm's Glantess and Jumbo Girl. 3, Haag & Son on Lendoris Queen.

Junior sow pig—1, Bassett on Orange Glantess. 2, McCune. 3, Bassett on Miss Rainbow.

Produce of sow—1, Haag & Son. 2, Bassett. 3, McCune.

Aged herd—Bassett.

Young herd—Bassett.

Champion boar—Bassett.

Champion sow—Bassett.

Durocs

Aged boar—Ellis on Major Disturber.

Junior yearling—1, Cummins & Son.

Senior boar pig—1, Cummins & Son on Big Orion King.

Junior boar pig—1, Thorp on Mossdale Sensation. 2, Ellis on Tulare Pathfinder. 3, Thorp on Sensation of Mossdale.

Aged sow—1, Cummins & Son on Big Orion Wonder. 2, Ellis.

Senior yearling—1, Cummins & Son on Golden Sensation.

Senior sow pig—1 and 3, Cummins & Son. 2, Ellis.

Junior sow pig—1, 2 and 3, Thorp.

Get of sire—1, Thorp. 2, Ellis. 3, Cummins & Son.

Produce of dam—1, Thorp. 2, Ellis. 3, Cummins & Son.

Pair of pigs—1, Thorp. 2, Ellis. 3, Cummins & Son.

Champion boar—Ellis on Major Disturber.

Champion sow—Cummins & Son on Golden Sensation.

The Sheep

The Corriedale Sheep Co., Hollister, was the only exhibitor in this department and had very good exhibits of Corriedales, Leicesters, Southdowns and Shropshires and was awarded all premiums.

WHOLE MILK VS. SKIM MILK

An Iowa correspondent writes in Wallace's Farmer of Des Moines as to comparative values of whole sweet milk and separated milk for hogs:

"Whole milk has almost exactly the same composition as separated milk except that in each hundred pounds there are three and a half to four pounds of butterfat as compared with scarcely any butterfat at all in separated milk. Each pound of butterfat in the whole milk has a feeding value when fed to hogs of perhaps eight or ten cents, or, in other words, ordinary whole milk has a feeding value for hogs about 60 per cent greater than separated milk. Inasmuch as butterfat can be sold at the creameries for about five times as much as it is worth when fed to hogs, no one except possibly an occasional pure bred man feeds whole milk to hogs. Even pure bred men have found that whole milk has no decided advantage over skim milk which is properly supplemented with corn."

Another writer in the same publication says:

"We do not know of any experiments in the United States along this line, but we remember seeing in an Australian publication an account of an experiment which indicated that for pigs under 70 pounds in weight skim milk had a feeding value 50 or 60 per cent greater than for fattening hogs over 100 pounds in weight. Everyone knows that skimmilk is peculiarly worth while with pigs which have just been weaned. In fact, under some conditions we can see how skimmilk at this time might be worth two or three times as much a hundred

as with fattening hogs. For fattening hogs, 100 pounds of skim milk is customarily worth the equivalent of about ten pounds of corn plus five pounds of tankage."

A PLAN TO MOVE THE WOOL CROP

When congress reconvenes in December the American Farm Bureau Federation will urge immediate passage of a bill establishing a credit with Germany and her former associated countries equal in amount to the net proceeds of the sale of alien property in this country during the war. The money received by the alien property custodian during the war amounted to nearly a billion and a half dollars and the remainder now in the United States treasury after various claims and expenses are allowed will run well up toward a billion dollars. Sooner or later this money must be turned over to Germany and her associates and now is the time the central European countries can use it to best advantage. The raw materials which this money would buy in this country are the very things needed by Germany to start and operate her factories.

A careful survey of the world's wool supply gathered from the best available sources—some direct by cable—shows that the world's wool stocks are somewhat greater than usual. Where the usual holdings prior to 1919 amounted to about half a year's supply, or around a billion and a quarter pounds, the stocks now available seem to amount to about a full year's supply. But nearly all of this surplus is of the coarser grades. Apparently there is no real surplus of the finer grades of wool—the kinds which we use in this country to manufacture our clothing. The accumulation of coarse wool stocks seems to be a direct result of the inability of Germany and Austria to buy and consume their usual quotas. These markets have been practically closed for a long time now, and as a result coarse wool stocks have accumulated in all parts of the world, to depress the fine wool market also. Sending large quantities of coarse wool into German mills, where it is badly needed, would have a very wholesome and stimulating effect upon both the coarse and the fine wool markets the world over.

DISEASE PREVENTION IN ANIMALS

Increased suffering to farm animals from legalized inability to carry on experiments to discover causes and remedies of animal diseases will follow in California if the proposed anti-vivisection measure, number seven on the November ballot, is adopted, according to G. M. Haring, professor of veterinary science and director of the agricultural experiment station of the University of California.

In a letter to R. N. Wilson, secretary of the agricultural legislative committee in Sacramento, Professor Haring declares that if the act becomes law it will seriously hamper projects conducted by the agricultural experiment station in human and animal nutrition and stop work on five of the seven projects in which members of the division of veterinary science are engaged at Berkeley, Davis and Petaluma.

"Such a situation would be especially injurious to the swine raising industry, the security of which is now based on the use of anti-hog-cholera serum and virus. Even the poultry industry would be injured in that the manufacture of chicken pox vaccine would be stopped.

"Prohibition of the manufacture of vaccines against blackleg and anthrax, brought about by the bill if adopted, would render useless one of the greatest advances in eliminating unnecessary losses and stabilizing the beef production industry.

"Further reason for rejecting the measure is seen in the absolute prohibition of investigations on bacillus botulinus, which has been held responsible for the many cases of food poisoning, and the resultant wiping out of the olive industry of the state.

"It is necessary to use guinea pigs or chickens or other animals to determine whether canned goods or laboratory samples contain toxin. Should the measure pass it will be necessary to transfer the bacillus botulinus investigations and the manufacture of anti-toxin to another state.

Mammoth Dispersal Sale Rosamaines Rancho, Riverside, Cal. OCTOBER 19-20-21, 1920

Gerben Abbekerk Maid and Four of Her Daughters



GERBEN ABBEKERK MAID three times above 30 lbs. butter in 7 days, twice above 34 lbs., dam of nine living sons and daughters, six daughters and three sons, only 9 years old, and there are 105 of her descendants in this sale. She is a daughter of Sir Skylark Ormsby Hengerveld, who has the largest list of 30 lb. daughters of any bull yet developed in California. She can rightfully be called one of the world's great dams.

Tuesday, October 19

Promptly at 9 A. M. the dispersal opens with the sale of ROSAMAINES RANCHO in two parcels.

PARCEL NO. 1 — 235 acres with Rancho buildings and improvements costing over \$200 per acre. 100 acres bottom pasture; 60 acres fine alfalfa; 40 acres corn; two motor equipped pumping plants with unfailing water supply; all buildings electric lighted and sewerage; absolutely one of the greatest livestock breeding plants in the west.

TERMS ON PARCEL NO. 1—One third cash, balance six equal annual payments, interest 7 per cent, 2 per cent discount for cash on deferred payments.

PARCEL NO. 2—397½ acres adjoining Parcel No. 1 on the north. All first class vineyard, orchard, or alfalfa land, in crop regularly, with an abundance of cheap water. A first class investment either in connection with or separate from the balance of the Rancho.

TERMS ON PARCEL NO. 2—One half cash, balance in four equal annual payments, interest 7 per cent, 2 per cent discount for cash on deferred payments.

Immediately following sale of the Rancho we will sell

90 big red grand Shorthorn cows, 3 to 5 years old, fat and heavy with calf

18 registered Percheron mares and stallions

50 registered Duroc-Jersey hogs

1800 White Leghorn hens and pullets

A small herd of grade dairy heifers

All of the implements and equipment.



ARALIA MAID, 23.61 lbs. butter in 7 days, 86.49 lbs. in 30 days at 4 yrs. 1 mo. She is by Prince Aralia Walker, son of Prince Gelsche Walker and the 1100 lb. butter cow Aralia De Kol 3d, whose dam also made over 1100 lbs.



ROSAMAINES ORMSBY ABBEKERK, sired by a 32 lb. son of King Pontiac Netherland Segis 3d.



ABBEKERK PONTIAC, 24.24 lbs. butter in 7 days, 85.65 lbs. in 30 days at 3 years, 4 mos. She is by King Pontiac Netherland Segis 3d.



ROSAMAINES DUCHESS ORMSBY, a full sister to Abbekerk Pontiac. Due to freshen before sale.

Wednesday & Thursday October 20-21

We will disperse the splendid herd of

150 Registered Holsteins

Including:

KING PONTIAC NETHERLAND SEGIS 3D, the senior herd sire. By a son of King of the Pontiacs and out of Gerben Abbekerk Maid, whose picture and records are shown above.

SIR ORMSBY SKYLARK RAUWERD, the junior herd sire, by the same sire as the world's record cow Duchess Skylark Ormsby, and out of a 34 lb. dam by a half brother to King Segis, second dam a richly bred 29 lb. cow. He is a show bull.

GERBEN ABBEKERK MAID and her four daughters shown in the illustrations.

105 DESCENDANTS OF GERBEN ABBEKERK MAID, a very choice lot of uniform breeding.

50 FEMALES with official records up to over 34 lbs. butter in 7 days.

43 DAUGHTERS of King Pontiac Netherland Segis 3d, with records up to 29.91 lbs. butter in 7 days for a 3 year old.

30 FEMALES bred to King Pontiac Netherland Segis 3d.

50 FEMALES, or more, bred to Sir Ormsby Skylark Rauwerd, many of them daughters of the senior herd sire.

SEVEN DAUGHTERS of Sir Skylark Ormsby Hengerveld, sire of Gerben Abbekerk Maid.

ONLY NINE animals in entire herd six years old or over, and ONLY TWELVE OVER 4 YEARS OLD.

Every animal positively guaranteed to be a breeder; every animal over six months old tuberculin tested and sold subject to retest by the buyer, except as announced at sale.

Management
California Breeders Sales
and Pedigree Co.

C. L. Hughes, Sales Manager
Sacramento, Cal.

Auctioneers:
Rhoades & Rhoades, Los Angeles

THE BIG QUALITY SALE OF THE SEASON

10th Semi-Annual Sale of Poland Chinas

By The Kings County Poland China Breeders Association

Tops from eleven of Kings County's leading herds

Sale Held at Hanford, Cal.

Wednesday, Oct. 20th, 1920

40 HEAD

3 Boars 37 Sows and Open Gilts

Sired By

Liberator	Meteor
King's Timm	McCunes Buster
Big Timm	Big Knox Boy
Yankee Jr.	Buster Defender
Fresno Boy	California Gerstdale
The Californian	Buster Defender
King's Massive Orange	Col. Jacks Surprise

For Catalog and Information Write

R. L. Waltz, Sec'y, Hanford, Cal.

Geo. W. Bell, Auctioneer

ROYAL I AM

Junior Champion and Reserve Grand Champion
at Los Angeles Livestock Show, 1920

Royal I Am is a son of Great I Am, grand champion Duroc boar of Nebraska, 1920.

We are fortunate in being able to offer some choice fall Royal I Am pigs.

Address

GRAHAM-HENSHAW

Lancaster, California

Italian Vineyard Company

Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

Alex. Wilson, Supt., Guasti, Cal.

Bastanchury
Better
BERKSHIRES
LA HABRA, CAL.
E. N. WHITTEMORE, MGR.

The boar is 60 per cent of the herd. We showed the 1st prize aged boar at the state fair this year. We have some of his pigs, both sexes, for sale at reasonable prices.

The Fresno Fair

By J. P. Bennett

The annual Fresno district fair was held at Fresno September 28 to October 2. It was successful in every way. The livestock show was one of the best in the history of the county and under the capable direction of Superintendent Fred Gatewood everything went very smoothly.

The horticultural and agricultural departments were extraordinarily good. The exhibits of autos, tractors and farm machinery were equalled only at the state fair. Large crowds were in attendance not only to see the livestock but to witness the auto races and other attractions that usually draw a crowd.

The Cattle Show

The cattle show was one of the strongest held this season outside of the state fair. The dairy breeds led in point of numbers with good herds of Jerseys, Holsteins, Ayrshires and Milking Shorthorns. There was very keen competition in many of the classes. Prof. W. E. Tomson of the university farm, Davis, placed the awards.

R. L. Holmes, Modesto; Harry Hill, Riverdale, and Santa Maria Stock Farm, showed Holsteins.

Guy Miller, Modesto; J. E. Thorp, Lockeford and A. A. Jenkins, Tulare, showed Jerseys.

Chas. L. Weaver, Tulare, and Murphy Bros., Perkins, showed Milking Shorthorns.

The big feature of the dairy show was the competition for the best five head of dairy cattle owned by one exhibitor. The prizes offered each year, \$200, \$150, \$100 and \$50, always bring out a strong show. This year R. L. Holmes of Modesto was first, E. B. McFarland, San Mateo, second; J. E. Thorp, Lockeford, third, and Guy H. Miller, Modesto, fourth.

Holstein Awards

Aged bull—1, R. L. Holmes. 2, Santa Maria Stock Farm.

Two year old—1, Harry Hill.

Senior bull calf—1 and 2, R. L. Holmes.

Junior bull calf—1 and 2, R. L. Holmes.

3, Santa Maria Stock Farm.

Aged cow—1 and 2, R. L. Holmes.

3, Santa Maria Stock Farm.

Two year old—1, R. L. Holmes.

Senior yearling heifer—1 and 2, R. L. Holmes.

3, Harry Hill.

Junior yearling heifer—1, R. L. Holmes.

2, Harry Hill.

Senior heifer calf—1, Holmes.

2, Hill.

Junior heifer calf—1, Holmes.

2, Santa Maria Stock Farm.

Aged herd—1, Holmes.

Breeders young herd—1, Holmes.

Calf herd—1, Holmes.

Produce of dam—1, Hill.

Senior champion bull—Holmes.

Junior champion bull—Holmes.

Grand champion bull—Holmes.

Senior champion cow—Holmes.

Junior champion cow—Holmes.

Grand champion cow—Holmes.

Jersey Awards

Aged bulls—1, J. E. Thorp. 2, Guy Miller.

3, A. A. Jenkins.

Two year old—1, Jenkins.

Senior yearling—1, Thorp. 2, Miller. 3, Jenkins.

Junior yearling—1, Jenkins.

Senior bull calf—1, Thorp. 2 and 3, Jenkins.

Junior bull calf—1, Thorp. 2, Miller. 3, Jenkins.

Aged cow—1, Thorp. 2, Jenkins. 3, Miller.

Two year old—1 and 2, Thorp. 3, Jenkins.

Senior yearling—1, Thorp. 2, Miller. 3, Jenkins.

Junior yearling—1 and 2, Miller. 3, Jenkins.

Junior heifer calf—1, Miller. 2, Jenkins.

3, Thorp.

Aged herd—1, Thorp. 2, Miller. 3, Jenkins.

Breeders young herd—1, Miller. 2, Thorp. 3, Jenkins.

Calf herd—1, Miller. 2, Jenkins. 3, Thorp.

Produce of dam—1 and 3, Miller. 2, Thorp.

Senior and grand champion bull—Thorp.

Junior champion bull—Miller.

Senior champion cow—Thorp.

Junior champion cow—Miller.

Grand champion cow—Thorp.

Milking Shorthorns

Aged bull—1, Chas. S. Weaver.

Junior yearling—1, Murphy.

Senior bull calf—1, Weaver.

Junior bull calf—1, Weaver. 2, Murphy.

Aged cow—1, Weaver. 2 and 3, Murphy.

Two year old—1, Weaver.

Senior yearling—1, Weaver.

Junior yearling—1, Murphy.

Senior heifer calf—1 and 2, Weaver. 3, Murphy.

Junior heifer calf—1, Weaver. 2, Murphy.

Aged herd—1, Weaver.

Calf herd—1, Murphy.

Produce of dam—1, Murphy.

Senior and grand champion bull—Weaver.

Junior champion bull—Murphy.
Senior champion cow—Weaver.
Junior champion cow—Weaver.
Grand champion cow—Weaver.

The Ayrshires

E. B. McFarland, San Mateo, stopped off on his way to Los Angeles with his strong herd of Ayrshires and took all premiums in this division.

The Swine Show

Fresno County brought forth her usual strong showing of swine. The Poland Chinas led in numbers with hogs from 22 herds on the grounds. A large per cent of the animals shown had been winners at the state fair. Judge C. R. Doty, Los Angeles, placed the awards in a very satisfactory manner.

Poland China Awards

Aged boar—1, A. Buckland & Son, Fresno. 2, Fred Grant, Fresno.

Senior yearling—1, C. E. Johnson.

Junior yearling—1, Kern County High School, Bakersfield. 2, Buckland. 3, H. H. Johanson, Fresno.

Senior boar pig—1, Gatewood & Stephens. 2, Chas. Gatewood. 3, C. E. Dack.

Junior boar pig—1 and 2, Dack. 3, Joe Caesar & Son, Reedley.

Aged sow—1, Buckland. 2 and 3, Chas. McNeil.

Senior yearling—1-3, Caesar. 2, Buckland.

Junior yearling—1 and 2, McNeil. 3, Dack.

Senior sow pig—1, Caesar. 2, Buckland. 3, Cecil Temple.

Junior sow pig—1, 2, 3, Caesar.

Aged herd—1, Buckland. 2, McNeil.

Young herd—1, Buckland. 2, Caesar.

Get of sire—1, Buckland. 2, Caesar. 3, U. F. Clifton.

Senior champion boar—Buckland.

Junior and grand champion boar—Gatewood & Stephens.

Senior and grand champion sow—McNeil.

Junior champion sow—Caesar.

Duroc Awards

Aged boar—Fred B. Ellis, Exeter.

Senior yearling—1, J. B. Mallory. 2, Lowell Beaver.

Junior yearling—1, Beaver.

Senior boar pig—1, Ellis. 2, J. E. Thorp.

Junior boar pig—1, Thorp. 2 and 3, Ellis.

Aged sow—1, Ellis.

Senior yearling—1, Ellis.

Junior yearling—1, Ellis.

Senior yearling—1, Ellis. 2, Beaver.

Senior sow pig—1, Ellis. 2, Thorp.

Junior sow pig—1, 2, 3, Thorp.

Aged herd—1, Ellis.

Young herd—1, Thorp. 2, Ellis. 3, Beaver.

Get of sire—1, Thorp. 2, Ellis. 3, Beaver.

Senior and grand champion boar—Ellis.

Junior champion boar—Thorp.

Senior and grand champion sow—Ellis.

Junior champion sow—Ellis.

The Sheep

The Corriedale Sheep Co., Hollister, had its good flocks of Corriedales, English and Border Llecesters, Cotswolds, Shropshires and Southdowns on exhibit and secured the bulk of the premiums in this department.

National Poultry, Butter and Egg Association meets in Chicago, October 18, 19. Southern Poultry and Egg Shippers Association meets in Nashville, October 22.

Facts in
BLACK & WHITE

[Holstein-Friesian Cows

Produce Most Milk
Produce Most Butter

They hold all World's Records for production. Champion yearly butter record, 1,506 lbs. Champion yearly milk record, 33,425 lbs.

Ask for Free Illustrated Booklets.
THE HOLSTEIN-FRIESIAN ASSOCIATION
120 Hudson Street
Brattleboro, Vermont.

Poland China Pigs

Fine little Fellows that will surely please you

Theron J. Seits
Geyserville California

Vaughn's Jones

Is a boar that is siring a high class of POLAND CHINAS

good enough for the most discriminating buyer. Come and investigate; can show you.

A. J. Van Cleef, Riverdale, Cal.

SOME FACTS FOR THE PORK PRODUCER

Experimental and demonstration work by the University of Missouri college of agriculture has shown:

That the proper use of supplementary feeds like tankage, linseed oil meal or wheat middlings increases profits derived from swine feeding. With corn worth \$1.20 per bushel, a ton of tankage saved corn to the value of \$203.64; likewise, a ton of linseed oil meal was worth \$113.80 and wheat middlings \$45.80.

That fattening hogs gained 23 per cent faster on a ration of corn and middlings than on corn; 32 per cent faster on a ration of corn and linseed oil meal than on corn alone; 32.6 per cent faster on a ration of corn and tankage than on corn alone; 38.5 per cent faster on a ration of corn and soy beans than on corn alone; 17.6 per cent faster on a ration of corn and germ oil meal than on corn alone.

That fattening swine gain 7.4 per cent faster when self fed than when hand fed the same ration.

That self fed hogs require no more

that the mice were not affected the experimenters ate freely of the cheese without bad results. It has been of interest to note that the gases used were successful in destroying the cheese parasites when they were on the surface of the cheese or in the storage rooms, and that they have not injured the palatability or wholesomeness of the cheese.

It has been of value to use mice in this feeding experiment, showing the safety of such material for human beings. Investigations of this character would be illegal if the Initiative Measure No. 7, prohibiting the use of animals for experimental purposes should not be voted down.

IT WOULD NOT LAST

The recent merger of the New York Herald and Sun, which resulted in the closing of the Herald office, caused no little disturbance among the newspaper men affected, several of whom had spent a lifetime at the desks they then held.

An old copyreader on the Herald, who had been on the desk for a little more than 40 years, threw down his blue pencil in disgust at the announcement that the old shop would go out of business.

"I knew darn well when they got me to take this job," he said petulantly, "that it would not be permanent."—Exchange.

SHE WAS FROM BOSTON

An observant young lady from Boston, on her first trip West, saw when crossing the Plains a herd of branded cattle.

"Oh, see the engraved cows!" she remarked enthusiastically.—Everybody's.

Johnson's Defender Jr.

Heads my herd of carefully selected sows. He should be seen to be appreciated. I can spare a few choice females or young stock either sired by or mated to this good boar. You will be pleased with any purchase made from me.

H. C. WITHEROW

Live Oak, Cal.

Over Two Million Calves

protected against Blackleg for LIFE with ONE treatment vouch for Purity Blackleg Aggrassin (Germ-Free Vaccine made by the Kansas Process). Absolutely safe to use. Cannot transmit disease. Brand, castrate, etc., when you vaccinate. OTHER PURITY PRODUCTS: Anti-Abortion Vaccine for Cattle; Hemorrhagic Septicemia Vaccine for Cattle, and Sheep; Anti-Hog Cholera Serum, and High Count Mixed Infection Vaccine for Swine. For service that counts write, phone, or wire

PURITY SERUM CO., J. L. Thatcher, Mgr. Riverside, California

COMING EVENTS

Los Angeles Livestock Show, Los Angeles, October 2-10, Secretary C. R. Thomas.

Siaklyou County Fair, Yreka, October 5-9, Secretary Claude R. Gillis.

Orange County Fair, Huntington Beach, October 7-9, Secretary, J. K. McDonald.

Southern California Fair, Riverside, October 13-19, Secretary W. W. Van Pelt.

Northern Arizona Fair, Prescott, October 14-16.

Kern County Cotton Festival, Bakersfield, October 16.

Mendocino Apple Show, Ukiah, October 27-30.

Western Royal Livestock Show, Spokane, Washington, November 1-5, Secretary Bert L. Hilborn.

Arizona State Fair, Phoenix, November 8-13, Secretary Shirley Christy.

Farmers and Fruit Growers' Convention, Fresno, November 9-11.

Pacific International Livestock Show, Portland, Oregon, November 15-19.

feed to produce a given amount of gain than when hand fed. Hence the practice can be recommended as a method of decreasing labor.

That when each feed is placed in a separate self feeder the hogs will choose the different feeds so that the gain will be both rapid and economical.

That the saving of grain resulting from the use of pasture crops is from 20 to 50 per cent.

The kind of forage crops best adapted for hog pastures by showing that clover produced 567.7 pounds of pork per acre; rape and oat forage produced 354.1 pounds of pork per acre; rape, oats and clover forage produced 414.6 pounds of pork per acre; sorghum forage produced 275 pounds of pork per acre; cow pea forage produced 212.7 pounds of pork per acre; soy bean forage produced 117.6 pounds of pork per acre; rye grain forage produced 211.7 pounds of pork per acre.

That a ration of corn alone is too expensive for producing pork, but that it must be supplemented by feeds like tankage, linseed oil meal, soy beans, germ oil meal, semi-solid buttermilk, skimmilk, wheat middlings or fish meal.

CHEESE PARASITES DESTROYED

Old cheese kept in storage is sometimes injured by attacks of cheese mites and by skippers which grow from the egg of a fly. This fly will attack cheese if permitted to live in such rooms. A cooperative experiment has been carried on for several months by the divisions of entomology and dairy industry in determining procedure that may be followed in destroying such insects without going to the expense of removing the cheese from the curing rooms and still maintaining the cheese in a condition safe for human consumption.

These experiments have included the use of hydrocyanic acid gas and carbon disulphide for fumigating, and the question of importance has been whether or not the cheese was injured by contact with the gases. In order to demonstrate this point the cheese was fed to mice immediately after it was removed from the fumigating room with no bad effect, and after noting

Diamond Bar Wins On Duroc-Jersey Hogs At Los Angeles Livestock Show

Senior Boar Pig 3rd—Second prize fall futurity Reformer's Model.

4th Fall Futurity—Cherry Model.

Jr. Boar Pig—1st Cherry Pathfinder, by Ace of Pathfinders.

Aged Sows—1st, Queen of Pathfinders.

2nd, Pathfinder's Molly.

4th, Lucy Pathfinder.

Senior Yearling Sow — 1st, Pathfinder's Very Best.

2nd, Orion Girl.

Jr. Yearling Sow—1st, Orion Sensation Lady.

2nd, Smooth Duchess.

Senior Sow Pig—2nd. Open Class and Senior Futurity.

Cherry Rose, 4th. — Open Class, and Senior Futurity.

Lena Sensation, 5th—Senior Futurity—Wonder's Queen.

1st and 5th Jr. Sow Pig — Pig sired by Ace of Pathfinders

1st Aged Herd—Headed by Ace of Pathfinders.

3rd Aged Herd—Headed by Mammoth Sensation Junior.

1st Young Herd—Sired by Ace of Pathfinders.

3rd young Herd.

1st Herd bred by exhibitor — Sired by Ace of Pathfinders.

1st Get of Sire—Get of Pathfinder.

4th Get of Sire.

1st Produce of Dam.

Reserve Jr. Champion Boar — Sired by Ace of Pathfinders.

Reserve Senior Champion Sow — Pathfinder's Very Best.

Reserve Grand Champion Sow — Pathfinder's Very Best.

Reserve Jr. Champion Sow — Sired by Ace of Pathfinders.

Senior and Grand Champion Sow — Queen of Pathfinders.



DIAMOND BAR RANCH

F. E. LEWIS, Owner and Manager

R. K. Walker, Hog Dept.

SPADRA

Los Angeles County

CALIFORNIA



Lendorris Liberty Bond, Skyrocket and Lendorris Liberator

Three good sons of three good sires are our herd boars. We will have a few representatives of our herd on exhibit at the state fair. When in need of choice Poland China breeding stock, write for our prices. You will find them very reasonable.

W. L. Haag and Son **Hanford, Cal.**

WEANED PIGS

of either sex, September farrow at ten weeks old for \$25.00 each. Sire, the Sequoian

Z. M. Dickey **Dinuba, Cal.**

Victory Bob, the Greatest Son

of the grand champion Giant Bob heads the Sunland herd of big type Poland Chinas. Some choice young animals of select breeding for sale at all times.

H. A. Johansen

Fresno, Cal.

McCune's Quality Herd

of BIG TYPE POLAND CHINAS

The home of Edith Rose, King's Massive Orange and many other noted individuals. A McCune bred Poland China is backed by many generations of the best breeding.

H. D. McCUNE,

Lemoore, Calif.

King's Big Bone Leader

A Grand Champion, and Giant Bob 2nd, a son of last year's Grand Champion, are my herd boars. They are siring a high class of Poland Chinas. Write for prices and information.

Les McCracken

Ripon, Cal.

Eastman Ranch Poland Herd

Herd headed by Buster Bob by Belmont Buster. The largest junior yearling in the state. Our sow herd courts comparison. A few young animals for sale at all times. Satisfaction assured.

H. L. Graham, Mgr.

San Fernando, Cal.

Trehwitt's Big Type Polands

Are the result of careful mating and selection. Size and feeding quality have always been essential features in this herd. Write for prices and information. I can interest you.

W. D. Trehwitt

Hanford, Cal.

The Forrestview Herd of Polands

I am now located on my new place near Chico, where I am better prepared than ever to care for my customers. My intention is to raise more and better Poland Chinas in the future.

J. H. Cook

Route 4, Chico, Cal.

Oakmere Ranch Durocs and Polands

sired by Great Model, Great Sensation 3rd, Winsor's Giant Orion in Durocs, and Oakmere Price, by Black Price, Black Bob, Wonder Boy, and our Great Liberator Boy, in the Polands. Breeding stock priced low for early delivery. Special, 2 great Duroc boar prospects of January farrow, Tops from big litters, and 600 pound sows, fit for any herd. 1st choice \$60, 2nd choice \$45, crated, immuned and guaranteed. We refund money to any buyer without questions.

R. A. Chapman, Mgr.

413 Owl Block, San Diego, Cal.

CLARK, HUNTER & CLARK

The Livestock Auctioneers

Sales made any time and any place. Write for sale dates, we can fill them. **Clark, Hunter & Clark** **Modesto, Cal.**

FOR SALE---Young Hampshire Boars

Pure Bred Stock. Ready for November service. Every one a choice individual. Some recent prize winners. Prices reasonable. Write immediately.

Oak Knoll Ranch

JUPITER FRUIT CO.

R.F.D. Box 77

Woodlake, Cal.



The McCarty-Shinn-Elliott Sale

The joint sale of Poland Chinas from the herds of Alex. D. McCarty, Modesto, Hugh C. Shinn and A. J. Elliott, Tulare, was held at the fair grounds at Tulare, Monday, September 27. The offering was an exceptional lot of Poland Chinas. While the hogs sold did not bring anything like their real worth, still they sold at a time when it was thought impossible to dispose of such an offering and demonstrated the fact that good stock will always bring the buyers.

It would be hard to find three more popular breeders than these three men and their high standing as well as the high class of their stock had much to do with helping the sale along. There were rather too many hogs listed for the buyers present, and until they were supplied the sale was very snappy. H. K. Dickson, Kern County Pig Club leader, was on hand with several of his club boys from Bakersfield and secured several of the best lots sold. H. L. Graham, Tom Edmundson, San Fernando, E. B. Peers, Owensmouth, and Earl Sturgis of the Santa Anita Rancho were there with bells on and not only secured some 12 head but, together with the Kern County support, made it possible to sell practically the entire offering. Johnny Glusing, Winton, who showed the grand champion boar at Sacramento, bought quite a number of choice sows to mate with his good boar.

The top of the sale was Perfect Beauty 2nd, prize junior yearling at the state fair. She was purchased by Lloyd and Tolinton, Santa Rosa, at

\$500, and after the sale resold to A. J. Elliott.

Paul B. Long, Tulare, secured the next top in lot 38, a great senior gilt sired by Hercules, at \$450, a litter mate going to Merle Sholts at \$260.

The average on 45 head sold was \$125.

Col. Geo. W. Bell was on the block and assisted by Fred Gatewood, Fresno, and E. A. Mead, Tulare, sold the offering in a very high class manner.

Following is a list of sales:

1. A. J. Elliott, Tulare, \$210.
3. A. J. Elliott, Tulare, \$500.
4. Tom Edmundson, San Fernando, \$65.
5. Johnnie Glusing, Winton, \$85.
6. Santa Anita Rancho, Santa Anita, \$105.
9. Eastman Ranch, San Fernando, \$100.
10. Kern County Pig Club, Bakersfield, \$120.
- 10A. Kern County Pig Club, Bakersfield, \$120.
11. E. A. Mead, Tulare, \$50.
12. S. Nelbandian, Tulare, \$75.
13. Santa Anita Rancho, \$90.
14. Santa Anita Rancho, \$90.
15. E. B. Peers, Owensmouth, \$40.
17. E. B. Peers, Owensmouth, \$35.
18. Eastman Ranch, \$135.
- 18A. Eastman Ranch, \$80.
19. Johnnie Glusing, \$135.
20. Kern County Pig Club, \$180.
21. Santa Anita Rancho, \$105.
23. Kern County Pig Club, \$160.
24. Kern County Pig Club, \$205.
- 24A. Kern County Pig Club, \$205.
25. Johnnie Glusing, \$175.
26. Santa Anita Rancho, \$160.
27. Johnnie Glusing, \$175.
28. Hollister Boys Pig Club, Hollister, \$200.
29. Oscar Dimmick, Tulare, \$65.
32. Oscar Dimmick, Tulare, \$75.
34. H. D. McCune, Lemoore, \$100.
35. Johnnie Glusing, \$130.
36. A. D. McCarty, Modesto, \$150.
37. Bassett Bros., Hanford, \$90.
38. Paul B. Long, Tulare, \$450.
39. Merle Sholts, Tulare, \$260.
40. Santa Anita Rancho, \$65.

Better Livestock---Better Homes

As a rule, better stock means better homes and better homes better stock. There are exceptions, of course, but when you think of the one it is very likely that you think of the other also.

Even if you are making no effort to grow high grade stock or purebreds you are apt, after taking more pride in your home and your buildings, to take better care of the ordinary stock on your farm. An expert can get better results with less fuel from an old and poor heating plant than a slipshod person will get from a high grade outfit. The most money is not always made with the highest grade or purebred animals. There are some men who make really good returns by handling good grade animals in an intelligent, practical way.

The thoughtful farmer knows that the only profitable animal is the well cared for animal. Many a man who is not at heart very kind has learned the lesson—so far as cattle are concerned—that the exercise of consideration and gentleness means the saving of dollars. Very few men are mean enough to be mean when they know it hurts their pocketbooks. Any one who gets a notion that it pays to give the best possible attention to the animals he has, even if poor, will not need much argument to convince him that better bred stock will yield him still better results.

In some of the older settled regions of the United States there are men who have stock that is bred well enough but has been handled in so shiftless a way that the animals might just as well be scrubs. In some of these cases the advent of an "up and coming" neighbor has worked a change of conditions.

In the more progressive communities organizations, county breeders associations, extension workers of universities and county agents have worked wonders and produced splendid results. Boys and girls livestock clubs have been able to bring reforms that no other agency could reach. Occasionally the older men who have never had very good ways and have become set in them are reached only through the kiddies.

About the first thing that may be done toward getting better stock and better homes is to check up on conditions as they are and see the many ways in which they may be improved. But most people are not able to make the best of what they have. A man who lets his buildings and fences fall down, pays no attention to rotation of crops, lets his manure leach away into

creeks, forgets or neglects to feed and care for his stock regularly, and lets his wife go out to pump water and split wood is apt to instill into the minds of his children the idea that nobody is ever a farmer who is smart enough to be anything else. On the other hand, one who maps out his course and lets no season go by without making some improvements in his way of doing things will surely find himself getting better animals and gaining in self respect and importance, not only to himself but to the community as well.

Gradual, continuous livestock improvement has been practiced for many years by the most successful livestock farmers everywhere. Improving livestock—grading up, eliminating the scrub, etc.—is merely following the practice of these successful men who for years have been keeping the best and "breeding the best to the best." It is well known that a good cow, for example, bred to a good purebred bull will usually produce a good calf. It is also well known that a better bull bred to a better cow will produce a better calf, and this applies to other kinds of livestock.

It was to emphasize this important practice that the United States department of agriculture, in cooperation with the different state agricultural colleges, inaugurated the "Better Sires—Better Stock" crusade to raise the general quality and usefulness of our animals. Not only the scrub sire is to be eliminated but the undesirable sire as well, even though he is a purebred.

A SHEEP WITH REAL FUR

The Karakul sheep imported from Siberia some years ago is making good in his adopted country, California. This sheep is especially noted for its fur, and as a result a new fur industry is now being developed in our state.

Although this sheep is especially prized for his fur, the mutton is good for food and the fat is very valuable. It has been claimed that a more vigorous sheep is produced by crossing the Karakul with a Mexican wool sheep.

Hawaiians are getting interested in milk goats, and a San Jose paper chronicles the sale of 57 Toggenburgs by the Ivy Lodge Estate, all of which were shipped on one vessel on September 4. It is said this is the largest single shipment yet made out of the state.

Veterinary

Bloody Milk

We have a three year old Holstein helper that is giving about six gallons of milk a day but the milk from one quarter of udder (right front) is quite bloody and has been for some little time. She has been fresh since June 2, and shortly after freshening she had the same trouble for a few days but apparently got entirely over it. She appears perfectly well and normal so far as I can tell, except for this. Have been milking that quarter separately, and the milk from the balance of the udder does not leave a trace of blood in the separator bowl. The teat in this quarter has always milked harder than the others, is a little larger and lately has a small lump or kernel like growth (size of a pea, perhaps) within it. If you can give us any assistance in correcting this trouble we would appreciate it greatly, as we are a hundred miles or more from the nearest veterinarian.—Subscriber, Wagner.

Bloody milk may be caused by a number of things. Often an injury or bruise on the udder causes the rupture of some blood vessels. It may be that in milking this quarter, since you say it is more difficult to milk than the others, the udder may have been bruised and the small lump within it may be the result of some injury that did not heal properly. It may be, however, a small tumor like growth in the udder which may be responsible for the bloody colored milk. I would suggest that you treat this quarter by applying hot and cold cloths intermittently just as hot as possible without burning. This can be done for about 15 minutes twice a day or even once a day for a few days, after which the udder may be carefully massaged with sweet oil or olive oil containing a little turpentine. Another remedy made for massaging the udder is iodine ointment one part, soft soap two parts. It is very essential that the udder be handled carefully and not bruised.—G. E. G.

Goat Gives Bloody Milk

What can be done for a goat that gives bloody milk? There seems to be sediment in it also. When she had her first kid, milk was bloody, but after a time cleared up. This time it stays slightly bloody all the time. If I remember right, it had nearly cleared up when she slipped and partly fell on her bag on a box and since then have noticed a small, somewhat hard lump up high next her body. Also, two months ago she was bitten by dog in same place. Both times milk flow was affected for few days. She seems to feel well in every way, but does not give as much milk from that side as before.—Subscriber, El Cajon.

The indications show udder injury, probably caused at the start by the udder being inflamed and swollen, causing rupture of some of the small blood vessels. Injuries of this kind will naturally cut down the milk flow. The lump on the udder is probably the result of failure to heal properly after the injuries. I would suggest that you apply hot and cold cloths intermittently for about ten or 15 minutes twice a day. These hot cloths should be as hot as possible without danger of burning. After this application it would no doubt be well to massage the udder gently with sweet oil or olive oil to which a little turpentine has been added. Great care should be exercised so as not to injure the udder.—G. E. G.

Rancid Butter

Have Jersey cow and recently butter has been getting rancid and bitter soon after churning. Feed is one of best of dairy mashes with bran, beet pulp and alfalfa.—Subscriber, Chula Vista.

Rancid butter is usually caused by volatile fats decomposing. In most cases, however, feed is responsible. From the feed you mention there should be no difficulty of this kind. However, if the cow is allowed to get any pasture some undesirable weeds might easily cause this trouble. In other cases this annoyance is increased by utensils that have not been properly sterilized. I would suggest,

therefore, that if the cow is getting any pasture she be taken from it or changed and that the utensils used in handling the milk be sterilized more carefully. These things might be of some assistance.—G. E. G.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

October 19-21, A. J. Stalder, Riverside.
October 28, George Kounias, Modesto.
November 10-11, Toyon Farms Association Sale at Sacramento.

December 1, H. E. Vogel, Fresno.
December 2, Consignment Sale, Tulare.
December 16-17, Consignment Sale, Sacramento.

Herefords

November 4, Pacific Coast Hereford Breeders' Association, Sacramento.
November 5, J. H. Cazler & Sons, Sacramento.
November 6, H. M. Barngrover, Sacramento.
November 18, Finner Ranch Company, Sacramento.

Shorthorns

November 16, Caledonia Farms, West Sacramento.

Jerseys

October 22, Grant A. Brown, Clearwater.

Poland Chinas

October 20, Kings Co. Poland China

Breeders Assoc., Hanford.

October 27, Newton & Christiansen, Pomona.

Duroc-Jerseys

October 27, E. Avery Newton, Lankershim.

E. F. Meyers of Lankershim is one of the breeders of big type Durocs in San Fernando Valley on his Keystone Ranch. He has March boars and gilts got by such sires as Top Sensation 1st, May Rose King and Winsor's Giant Orion that are real foundation material. A pair of very typy brood sows are Golden Model Lady 1st and 2nd. These sows were bred by Meyers and they were futurity winners

What One Dairyman Learned About HEBE

He had heard many conflicting stories regarding this new food product—some that it would injure and some that it would benefit the dairying industry. Desiring to form his opinion from facts rather than hearsay he started out to investigate. During the course of his investigation he called at the offices of the Hebe Company and asked some very searching questions.

"I have been told," he said, "that HEBE is being marketed as evaporated milk or a substitute for it. Is this so?"

"It is not," was the reply, "HEBE is produced, labeled, advertised and marketed as a distinctive dairy product for use in the home as a cooking and baking ingredient."

"But some dealers sell it as, or for evaporated milk" he objected.

"There are such cases of misrepresentation," was the reply, "but they are becoming fewer each day due to the widespread campaign of education which the Hebe Company is conducting by which the consumer is learning the exact nature and uses of HEBE and the dealer is being made to realize that his greatest profit lies in selling the product for just what it is." He was shown the methods employed by the Company to correct misrepresentation on the part of the distributor and misuse by the consumer. His attention was directed to the label which specifically states what HEBE is and its uses.

"Is not the real purpose of HEBE to develop a market for cocoanut fat rather than a market for skimmed milk?" he asked—

"Decidedly not," was the reply. "To make every hundred pounds of HEBE it takes 210 pounds of skimmed milk and only 7.8 pounds of cocoanut fat and this small amount of non-dairy ingredient is used for the sole purpose of supplying the large amount of dairy ingredient with the shortening and other elements necessary to make it desirable as a cooking medium. It is no more true that the skimmed milk is used as a vehicle to bring cocoanut fat to market than is it true that butter is used to bring salt or ice cream to bring gelatine to market. These non-dairy ingredients all serve the same purpose—to make the dairy ingredients better for the uses intended."

"How will the sale of HEBE benefit the dairy industry?" was the next question.

"By developing a human food market for skimmed milk" was the reply. Government reports were produced which showed that yearly over 30 billion pounds of skimmed milk was not finding its natural and most profitable market as a direct human food. The statements of government and other authorities were read to show the need of creating such a market if the dairy industry is to best serve humanity and itself. HEBE, it was pointed out, is one means to this end.

"How will this benefit all dairymen?" he next asked.

"That which benefits the industry as a whole must benefit each individual member," he was answered. "Every can of HEBE sold and every bit of advertising put out is helping to educate the public to a greater use of dairy products. The ice cream industry is a parallel case. Every dairyman, whether he ships his product to an ice cream factory or not benefits by the increased demand caused by the use of nearly 4 billion pounds of milk yearly by the ice cream manufacturers."

"Why are you advertising HEBE in the farm papers?" he asked.

"For no other purpose" he was told, "than to give other dairymen as we are giving here to you the facts of HEBE in its relation to the dairy industry so that these men may have a complete and accurate knowledge of the subject and form their opinion of our product and our company from facts and not from prejudice or from mis-statements on the part of wilful or uninformed persons."

At the close of the interview the dairyman visitor expressed his satisfaction at the frank and straightforward answers given to his questions and made this significant remark "If every dairyman who now sees in HEBE a menace to his business could have the opportunity of going into this subject with you as thoroughly as I have, I am sure he would see HEBE in an entirely different light."

We will be glad to discuss HEBE with any person interested, either by personal interview or by correspondence. Write for our booklet "The Missing Third" which discusses in detail the relation of HEBE to the dairying industry. Address 3073 Consumers Bldg., Chicago.

Chicago

THE HEBE COMPANY

Seattle

at Los Angeles last year. One of them now has fine litter by Top Sensation 1st.

J. M. Roberts, formerly field man for the American Jersey Cattle Club and who served as superintendent of livestock at the recent state fair, has accepted an invitation to serve as superintendent of dairy cattle and dairy products at the Pacific International Livestock Show to be held at Portland next month.

Prices ruled very conservative at the dispersal sale of Shorthorns held at the Willota Ranch, Suisun, September 30, but were no doubt influenced by the lack of condition of the offering—the cattle selling directly from the range. The entire lot, including many young things, made a general average of \$130. The Pacheco Cattle Company, Hollister, was the heaviest buyer, taking 17 cows with calves at foot and 12 yearling heifers. Merritt-Bowers Company, Tulare, were the

strongest bull buyers and secured several lots that were distinct bargains. Other buyers were: J. W. Bauman, Suisun; J. B. Alameda, Suisun; J. M. Brazelton, Vacaville; W. L. Claton, Suisun; W. K. Ford, Ukiah; F. L. Gordon, Suisun; Thos. Harrison, Santa Rosa; A. Humburg, Danville; Y. M. Hardin, St. Helena; Claus Mangles, Suisun; Henry Oeste, Davis; A. B. Spreckels, Stock Farm, Napa; J. J. Summerfield, Santa Rosa; W. C. Whitman, Vacaville; T. F. Walsh, Vallejo and F. L. Gonsalves, Vacaville.

farm bureau at Petaluma, a Holstein calf, King Marco Elzevere, consigned by Jane Garden Farms, Sacramento, topped the offering at \$420. Two Jersey bulls from the herd of A. B. Purvine, Two Rock, sold for \$300 each. Sixteen head were sold.

Building operations have been started at Strayloch Farms, the breeding establishment of C. Harold Hopkins, near Davis. Manager J. I. Thompson expects to have the large cattle barn well under way before the fall rains set in. When the building plans are completed Strayloch Farms will be one of the show places of Northern California.

Chas. Gatewood, Fresno, reports the sale of ten Poland China sows and gilts, including Polandale Betty, first prize junior yearling sow, to C. B. McNeil, Fresno. Mr. McNeil is building one of the best herds in the state and this recent purchase has helped him very materially toward that end.

Maxwell & Penfield are ambitious breeders of high class Durocs at Lankershim. Their fine brood sow, Henrietta, by Grand Model, raised ten March pigs sired by Great Model. These and other foundation litters are strictly of herd building character.

Manager Chapman of Oakmere Ranch, San Diego, writes that Big Bess was made grand champion at the San Diego fair; that as the ideal Big Type Poland, backed by the best blood imported from the East, she has made a host of friends among the breeders.

COMING "WEED BULLETIN"

Copy for the bulletin, "Weeds of California," will go to press some time in November. This publication, which is the result of wide investigation and careful study, will include over 100 illustrations and much valuable information relating to the noxious weed pests of this state. It will be issued by the state department of agriculture.

Sulton Mayflower, the famous Shorthorn bull owned by the University of California, is dead and his death can be considered a distinct loss to the livestock interests of the West and the Shorthorn breed in particular. This bull was sired by Sultan Stamp, one of the best sons of the noted Whitehall Sultan, and his dam was the imported cow, Mayflower 16th. Individually, Sultan Mayflower was quite outstanding and reminded one of his famous grandsire. However it was his worth as a sire that brought him the greatest fame. With limited opportunity he sired many of the best Shorthorn productions of the West. He was the sire of California's Marvel, grand champion steer at the 1918 Pacific International Livestock Show and champion Shorthorn steer at the 1918 Chicago International. He was also the sire of California Model, the highest priced Shorthorn bull ever sold at auction on the Pacific Coast. California Majestic, another son, was the winning senior steer calf at the 1919 International. In many of the better herds of the state will be found daughters of this famous bull. The cause of his death is ascribed to a form of paralysis.

W. N. Carruthers, Live Oak, reports sale of the Shorthorn cow, May Blossom 12th, a daughter of Hallwood Villager and out of May Blossom 11th, to the Estate of Thomas Dibblee, Santa Barbara, for \$1,500.

At the recent auction sale of dairy bulls held by the Sonoma County

Any One of Three Good Breeding JACKS FOR SALE

Animals in good condition—aged—proved breeders—and well known locally. They are more than needed on this ranch. Any one—buyer's choice—at

\$350 Cash

A Bargain Price to move them quickly.

Write or call at the Ranch and inspect them.

**ROY M. PIKE
EL SOLYO RANCH**

Stanislaus County, Cal.

P.O. Address Vernalis, San Joaquin Co.

Ranch is on the west side San Joaquin River Road near Vernalis—14 miles south of Tracy—10 miles north of Patterson—20 miles due west of Modesto.

TOYON FARM ASSOCIATION

WILL SELL AT PUBLIC AUCTION

150 Registered Holsteins 150

November 10-11, 1920

State Fair Grounds, Sacramento, Cal.

The herds of Toyon Farm Association, Los Altos and San Francisco, are to be consolidated into one big herd on their Brentwood Farm. The herds now total approximately 350 head, and for the present the owners plan to carry only about 200 head, hence the sale of 150 head at this time.

100 Milk Cows in This Sale

Their first individual offering will include approximately 100 head of cows and heifers in milk, of splendid type and breeding, many with large official records and out of high record dams. There will also be about 30 bred and open heifers, and about 20 bulls in the sale.

Females Bred to High Record Bulls

The females in this sale are bred to Sir Pietertje

Ormsby Mercedes 43d, son of Sir Pietertje Ormsby Mercedes and Aaggie Wayne Peep, whose yearly records for five years exceed the total of any other cow; Sir Aaggie Mead, son of Sir Aaggie De Kol Acme out of a 1200 lb. daughter of the 1142 lb. cow Aralia De Kol; a son of the 33 lb. cow Bonnie Lass Pauline; and a 30 lb. son of Johanna Bonheur Champion.

A Healthy Lot of Unblemished Cattle

In this entire offering there are only three cows with blemished udders; no female of breeding age will be offered unless she is believed to be safe in calf; every animal is positively guaranteed to be a breeder; every animal is tuberculin tested by a Federal Veterinarian and sold subject to retest by the buyer.

Catalog Free on Request. Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. John W. Davis, Manteca

Dispersal Sale

67 REGISTERED HOLSTEINS 67

Kounias Registered Stock Farms
Modesto, California

Thursday, October 28, 1920

This offering will contain the highest record cows ever offered in a public sale in Stanislaus County, substantially bred, and practically all young.

There will also be a choice selection of bred and open heifers and heifer calves of good type and breeding.

The list of bulls affords selection of high quality and breeding for dairymen, and a few of registered herd heading caliber, including the herd sire KING KORNDYKE AAGGIE FAYNE, whose dam is a 33 lb. daughter of King Hengerveld Aaggie Fayne; a choice young son of the famous Hollywood Farm sire, JUDGE SEGIS, out of a 21 lb. daughter of Forward Prince Segis, her dam a 31 lb. daughter of Sir Skylark Ormsby Hengerveld that made 1127.27 lbs. butter in one year; and many others of excellent breeding.

Every animal positively guaranteed to be a breeder; every animal tuberculin tested and sold subject to retest by the buyer except as announced at sale.

Catalog free on request. Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. J. H. Corley, Modesto

King Korndyke Pontiac Mead

Average of his Dam and Sire's Dam (Both Former World Record Holders)

At Average Age of 4 yrs. 2 mo. 10 dys.	1062.64 lb. Butter
Semi-Official, 365 Days	21173.75 lb. Milk
Official Test, 7 Days	31.91 lb. Butter
	615.60 lb. Milk

His Sire—King Korndyke Pontiac 20th

His Dam—De Kol of Valley Mead 2d

Four of his seven nearest Dams have held World's Records

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3 miles south of Downey on Downey-Long Beach Boulevard

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Pineland Registered Jerseys

TUBERCULIN TESTED

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Of the Grant A. Brown Jersey Herd at El Monte

Will Be Offered at the Rhoades & Rhoades Sales Pavilion
CLEARWATER, CAL.

Friday, October 22nd, 1920

Write Auctioneers for Catalog. See next week's issue for descriptive ad.

Auctioneers: Col. Ben A. Rhoades, Harold B. Rhoades

1505 South Main Street, Los Angeles

When Writing Advertisers Mention California Cultivator

SECOND PUBLIC SALE Caledonia Farms' Shorthorns

(AT THE FARMS)

West Sacramento, Cal.

Tuesday, November 16

60 Registered Shorthorns

NOTICE

The date announced last week, has been changed from Tuesday, October 26, to the above date.

50 Females—10 Bulls

In announcing the forthcoming sale of Caledonia Farms' Shorthorns it is felt that offering is in every way equal to former drafts, and in many respects it constitutes a better balanced lot than have ever left the herd. In inviting the cattle interests of the West to appraise this lot we do so with confidence. The mature cows, 30 in all with 15 calves at foot, represent desirable and proven Scotch and American bloodlines. Individually they are of high excellence. The calves selling at foot are all sired by one or another of our three great herd bulls and the females selling bred will carry the services of the same bulls.

20 Heifers

A real attraction of the sale will be the 20 young heifers that have been bred. These young females will fit into any man's herd and will prove excellent investments for years to come. The established breeder or the beginner should not overlook this opportunity to add such material to his herd.

10 Bulls

The ten bulls that we have catalogued range in age from 12 to 18 months. Several of them are splendid prospects for herd bulls and all are the sort that will work improvement in any range herd. They are well developed, heavy-boned, strong constitutioned bulls, of good colors. Several are Scotch.

In considering this sale bear in mind that there will be a wide opportunity to select the blood of our three famous herd bulls—

IMP. CALEDONIA

(One of the top bulls of America)

GAINFORD MATCHLESS

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PINE GROVE KING

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Senior herd sire Altama Interest, sire of 12 cows in Register of Merit.
Junior herd sire Jap's Perfection Owl, a line bred Spermiel Owl bull.

Guy H. Miller, Modesto, Cal.

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FOR SALE

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The Hereford is the range bull without a peer.

My Herefords have size, bone, constitution and are notably thick fleshed. Visit my ranch and get my prices. Send for free literature.

Mission Hereford Farm

John A. Bunting

Mission San Jose

Cal.

DIAMOND HEREFORDS

A few choice young bulls, Big, heavy-boned husky fellows sired by DON PERFECT 2nd, one of the best sires in the West. Priced right and guaranteed.

H. H. Gable

Esparto, Cal.

Selection of Tractor Implements

By C. A. Bacon

(The following article was prepared for the benefit of California power farmers, at the request of the California Tractor and Implement Association, to increase public knowledge of the practical points of power on the farm. Mr. Bacon is manager research and agricultural extension of the Oliver Chilled Plow Works.



HE purchaser of a tractor has but one object in mind—greater production. The only service that he can secure from his tractor is power. The tractor must pull. The implement that follows the tractor determines the production. Hence, the selection of implements to follow the tractor is very important because the efficiency or worth of the tractor is determined by the volume of production. Increased production can only result from better methods and better work. It is perfectly obvious that the tractor will receive the blame for decreased crop production due to use of implements not fitted to work with the tractor, or not good for the purpose.

Many farmers who have been in the habit of using horse drawn tools for years do not understand why they cannot use the tractor in place of horses for pulling their implements.

As far as the plow is concerned, there are two fundamental reasons why this cannot be done successfully. The first one is—the tractor produces much more unyielding power than horses. The second one is—the center of power on the tractor is at the rear while on the horses it is at the front, making a much longer distance between the center of weight and the center of power, requiring entirely different hitch connections. Of course, there is another reason, and that is the inconvenience of attempting to operate a horse drawn plow from the tractor. But from the standpoint of the quality of work the two first named reasons are vital.

A plow bottom to turn the earth successfully must be operated in its true line of draft. The attempt to operate a plow built for horses with the center of power in the neighborhood of nine feet ahead of where it would be on the tractor necessitates a wider range of vertical hitch adjustment than is ever put upon horse plows. The other reason is that plows for horses are built light. Whenever an obstruction is met the horses will yield and the plow will not be sub-

jected to the severe stress that it is subjected to when it strikes an obstruction with the tractor pulling it. Something must give. It is usually the plow, if it is a horse plow, because of its lighter construction.

Another important phase in the selection of a plow lies principally in the quality of work the plow does. While ease and convenience of operation are largely to be desired, a more important item is the quality of plowing because it depends upon the way the earth is plowed how the crops get their start. The better the start the greater the chances for larger yields. The additional strength of the tractor plow enables the operator to plow deep, which is very desirable in many places. Horse plows are not made to stand the continuous hard work occasioned by plowing nine and ten inches deep.

If farmers would only remember that the start of their crops depends more upon the plowing than any other single operation it would be a comparatively easy matter to select the implements that give the most efficient service. But in these days of competition when everybody is talking light draft, light weight tools, that will do any kind of work any time, under any condition, and making other equally foolish statements about the phenomenal things implements do, it is sometimes very difficult to make a selec-

tion. However, if everybody would first consider what is necessary for growing plants in their soils they would soon begin to study the fundamental parts of plows and other tillage implements necessary to put the ground in that condition. Most of us are inclined to look at the surface of the ground and if it looks well on top we think we have accomplished a great deal in the preparation of the seedbed, but the trouble always happens lower in the ground. We must constantly bear in mind that the condition which determines plant growth is beneath the surface of the ground, not on top. If the ground is poorly plowed no amount of after preparation can put it in proper shape to make it produce 100 per cent in any given season.

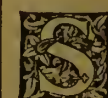
The work for which the tractor is to be used is one of the important things when selecting implements. Obviously, for orchard work the farmer would not select an outfit intended for use on a grain ranch, but yet, as far as the principle of plowing is concerned there should be absolutely no difference in the arrangement of the soil particles by the plow. When it comes to the question of convenience of operation among the trees, doing the least possible damage to the trees by the outfit, there is a necessity for an entirely different selection of levers and convenience of operation as far as the implement is concerned. Such implements can be secured.

The use of the disk harrow, roller pulverizer and spring tooth harrow with the tractor is worthy of special attention because of the saving in time and the volume of work these implements can do. A tractor disk harrow cutting ten feet will do the same volume of work as two five foot horse harrows and do the work much more efficiently because the operator from the tractor can handle the angling of the gangs and will leave no uncultivated strips either on the corners or through the field. He will experience no trouble with turning such as he must with improvised hitches necessary for a battery of horse tools. The same rules hold true with roller pulverizers.

In a general way the additional strength of all tractor built tools makes them last longer, cause less trouble for repairs, effecting a saving in both time and money. While specially designed tractor implements are more expensive to purchase at the start, yet the better quality of work they do has a very important bearing upon increased crop production. Keeping the outfit operating continuously at vital seasons of the year can mean the difference between a crop failure and a crop success.

BUTTE COUNTY FARM BUREAU TRIES OUT MARIOUT BARLEY

By H. E. Drobish



SEVENTEEN farm bureau Mariout barley demonstration plantings in Butte County gave an average increase in yield of seven sacks per acre over the production of common barley in the check fields. This new barley, developed at the university farm, proved superior to common barley in every respect in all demonstrations in Butte County. Not only did the fields of Mariout yield more sacks per acre but the barley weighed from six to 15 pounds more per sack. It ripened from two to three weeks earlier and was much better filled than the common barley.

This early maturing characteristic of Mariout barley not only causes the kernels to fill better but enables the farmer on irrigated land to get his soil in shape for the fall crop a little earlier. One farmer said that this feature alone, if there was no increase in yield, would cause him to plant Mariout barley.

Mariout barley came originally from the desert regions of Africa. It was introduced because it seemed to be especially valuable for poorer soils in a region of light rainfall. The Mariout barley has a much shorter straw than common barley but the heads are heavy and the kernels grow very compact in the head. It is not as good as the common for a hay crop.

This barley is adapted to the lighter types of soil. In Butte County this year excellent results were secured on the heavy adobe soils. Such results

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The International 8-16 is adaptable to all forms of farm work. Its snug compactness, light weight, easy control, ample power, three speeds forward and general fitness for diversified service make it highly popular with farmers in all branches of agriculture. It has a place on practically every farm.

Fifteen years of tractor-building experience and over three-quarters of a century of general farm machine success, backed by a broad-as-agriculture reputation for fair dealing, quality and service—these factors are your assurance of SATISFACTION when you buy an INTERNATIONAL 8-16 KEROSENE TRACTOR. Talk with your nearby International dealer.

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The Apary Department, which is in charge of experienced Bee-Keepers, is one of the largest of its kind in the United States and maintains a constant excellence of product and unsurpassed service.

Write for catalogue and if a beginner for Cottage Bee-Keeping, which will be promptly mailed free.

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Farmers, Miners, Builders—people in every kind of business are saving money buying used or renewed pipe from us. We sell every kind of pipe. Send in a list of your requirements today and get our prices. We have saved hundreds of people 33 1-3 to 50% on their pipe bills. Here's a partial list of some of the miles of pipe we have in stock for immediate delivery:

8000 ft.	6-Inch Riveted	16 gauge
700 ft.	8-Inch Riveted	16 gauge
5000 ft.	12-Inch Riveted	12 gauge
1000 ft.	18-Inch Riveted	12 gauge
800 ft.	22-Inch Riveted	14 gauge
300 ft.	24-Inch Riveted	14 gauge
500 ft.	36-Inch Riveted	12 gauge
10,000 feet	light wrought iron	8-Inch pipe with cast iron collars.

All above pipe thoroughly overhauled and inspected and ready for immediate use.

We also have large quantity standard pipe and screw casing, pressure tested and guaranteed.

Don't delay—write for our prices on your pipe requirements today.

PACIFIC PIPE COMPANY
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should not be expected, however, in the ordinary wet years when seeding is done prior to January 1. On heavy soil where early planting is desired Tennessee Winter barley should be used.

This year's planting in this county was merely an experiment, but the increase in yield of Mariout only in the fields where checks of common were planted, figured at \$2.50 per hundred weight, resulted in a profit of \$6,366.40. If all the Mariout barley harvested in Butte County in the farm bureau demonstrations is sold at \$6 per hundred weight, which is the present price in the state, the return over and above the return which would have been secured by planting common barley would amount to \$36,755.88. To say the least, this little farm bureau experiment has paid well, but the real value of the demonstration will be realized in the years to come.

The following is list of those who grew Mariout barley alongside common barley as a farm bureau demonstration, giving yield per acre in sacks of each:

D. L. Smith, Gridley, 34 sacks Mariout, 19 common; C. Cliffman, Gridley, 32 sacks Mariout, 22 common; T. Peterson, Chico, 13 sacks Mariout, five common; W. Green, Biggs, 30 sacks Mariout, 20 common; G. Canfield, Chico, 30 sacks Mariout, 20 common; C. Somes, Chico, 25 sacks Mariout, 16 common; B. Phillips, Chico, 33½ sacks Mariout, 11½ common; John Guill, Jr., Chico, 23 sacks Mariout, 10 common; J. P. Samuelson, Durham, 29 sacks Mariout, 14 common; F. E. Baxter, Durham, 33.09 sacks Mariout, 30.3 common; H. Nelson, Chico, 17.6 sacks Mariout, 16 common; S. Mealey, Gridley, 25 sacks Mariout, 23 common; Dodge Land Co., Chico, 27½ sacks Mariout, 15 common; A. Andrews, Oroville, seven sacks Mariout, four common; W. D'Egilbert, Nelson, 15 sacks Mariout, common fit only for hay; Ray Reedy, Chico, 17½ sacks Mariout, 10¾ common; W. F. Doty, Biggs, 18 sacks Mariout, 14½ common.

DURHAM FARM PRIZES AWARDED

In the belief that it would promote better farming and increase the interest of the farmers and farm laborers at Durham some of the members of the land settlement board and friends of the settlement who live at Durham offered the following prizes to be competed for in the season of 1920:

First prize, for best planned and cultivated farm, registered Romney Marsh sheep, given by Mortimer Fleishacker; second prize, for best dairy herd, pure bred cow or heifer, given by E. S. Wangenheim; third prize, for best cultivated ditch bank, pure bred Duroc-Jersey gilt, given by S. T. Mason; fourth prize, for best arranged and best cultivated garden on farm laborer's allotment, collection of garden seeds, given by T. C. Mitchell; fifth prize, for second best garden on farm laborer's allotment, pen of pure bred fowls, given by Elwood Mead.

The inspection of the farms and gardens of the settlement took place in September 22. The judges were: R. L. Beagles, superintendent plant introduction garden at Chico; L. C. Shirley, vice-president Butte County farm bureau; George Jones, farmer and fruit raiser of Butte County. George C. Kreutzer, superintendent of the Durham colony, acted as secretary. The following settlers were awarded prizes and honorable mention:

First, best cultivated farm—Frank E. Baxter, first prize; honorable mention, E. O. Messenger, Carl Nielsen, Bernice Bahmeier.

Second, best dairy farm—Thomas C. Christensen, first prize; honorable mention, Carl C. Nielsen, George E. Pearl, John Daly.

Third, best cultivated ditch bank—Carl Nielsen, first prize.

Fourth, best garden, two acres—O. N. Bigcraft, first prize; E. M. Willhoite, second prize; honorable mention, D. C. Crandall, Campbell Schooling, T. F. Megenity.

The judges expressed the belief that many of the farms inspected were worthy of prizes. They felt that the results obtained in the two years that settlers have been at Durham were remarkable and that in this time of social and industrial unrest, settlements like Durham are a source of inestimable political strength to the state.



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The Cletrac will do it for you. It will speed up your plowing and discing—working 24 hours a day if necessary, 7 days a week. The Cletrac is the all-purpose tractor—adapted to all conditions. Used alone or in "fleets", it is the right size and type for almost any ranch.

Laying its own endless track, the Cletrac travels over the ground with a light, sure foot and a steady, powerful pull. The Cletrac is economical, too. Operates perfectly on kerosene, distillate or "gas".

Soft or sticky soil does not interfere with the Cletrac's performance. The endless track takes care of that. No danger from the Cletrac sinking in or packing the soil. The Cletrac does not miss the corners either. Turns short, swings back to the furrow quickly without loss of time or power.

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POULTRY

Baby Chicks. We are now filling our hatcheries in preparation for the fall season which will soon be in full swing, and we can make deliveries in small or large quantities of the following kinds of chicks: R. I. Reds, Barred Rocks, White Leghorns, Brown Leghorns, Anconas, White Minorcas, Blue Andalusians and Mammoth Bronze baby turkeys. Send for our prices and place your order as early as possible so as to be sure of getting your chicks at the time you want them. Pioneer Incubators, Brooders, supplies, etc., always on hand. **PIONEER HATCHERY, 320 S. Spring Street, Los Angeles, California.**

S. C. White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Now booking orders for this fall and next spring delivery. Prices and terms gladly sent on request. Hatchers and shippers of Baby Chicks since 1898. **MUST HATCH INCUBATOR COMPANY, 438 Seventh Street, Petaluma, California.**

POULTRYMEN — POULTRYMEN Both the novice and the experienced poultrymen should have a copy of "Poultry for Profit" in order to prevent mistakes commonly made in the poultry business. This cloth bound book of 225 pages and 18 illustrations is written by Jean Koethen a practical authority on all branches of the poultry business in California. Price \$1.00 postpaid. Cultivator Publishing Co., 115½ N. Broadway, Los Angeles.

Raise Fall Chicks. They are profitable. Write for circular. See why they pay. Chicks every week. R. I. Red, Barred Rock, White Leghorn. Also booking for spring delivery. Order now and get a desirable date. Safe arrival guaranteed. **Stubbe Poultry Ranch and Hatchery, P. O. Box 67, Palo Alto.**

Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. L. W. Clark, 615 Main Street, Petaluma, California.

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White Leghorn Baby Chicks—Send us \$4.00 and we will send you 25 chicks by mail postpaid. Chicks are from Hogan Stock Hoganized. Will send 1,000 if you want them, our last hatch this fall, October 27. **Lyon Hatchery, Gardena, California.**

White Leghorn Baby Chix from heavy laying HOGANIZED STOCK. Safe arrival of full count, live, strong chix guaranteed. Price list and interesting literature on application. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

White Leghorn Baby Chicks from Extra heavy layers, all Hoganized. Booking orders NOW for fall and spring of 1921. Safe delivery guaranteed. **HICKS ELECTRIC HATCHERY, R. 2, Box 22, Petaluma, California.**

In order to prevent mistakes and disaster in the poultry business every poultry raiser should familiarize themselves with the rules and teachings of "Poultry for Profit." It contains 225 pages and 18 illustrations bound in cloth and sent postpaid for \$1.00. Cultivator Publishing Co., 115½ N. Broadway, Los Angeles.

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White Leghorns—Chicks and hatching eggs from the home of heavy layers. Spring orders being booked. Send for price list. **Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, California.**

For Sale—Pullets \$2.00; Cockerels \$5.00 each and upward—White Leghorn, Brown Leghorn, White Rock. **Mahajo Farm, P. O. Box 597, Sacramento, California.**

Eastman's Bred-to-Lay Hoganized and Trapped Barred Rocks. **FALL CHICKS.** Fairmead Poultry Farm, Fairmead, California.

For Sale—125 of the best Blue Andalusians in America. Will sell all or part. J. R. Huddleston, 342 Edgeware Road, Los Angeles, California.

Day Old Chix—Barred Rocks, R. I. Reds, Buff Orpingtons, Black Minorcas, Anconas, Buff, White and Brown Leghorns. **Enoch Crews, Seabright, California.**

Thoroughbred Barred Plymouth Rocks. Mrs. M. A. Warren, 36 Little Delmas Ave., San Jose, California.

Baby Chicks from selected egg type S. C. White Leghorn hens. **Tupman Poultry Farm, Box 7-C, Ceres, California.**

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Either one, land, hog, cattle in exchange for 1 Holt Caterpillar and 3 plows, cost \$6,600. Valued at \$5,000. P. Miller, Gustine, California.

TURKEYS

Bourbon Red Turkeys, Buff Orpingtons. The Ferris Ranch, S. Reservoir, Pomona, California.

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Jerseys for Sale—The greatest herd of St. Lambert Jerseys in the West. Dr. Belknap has sold his sanitarium and will disperse his famous herd of Jerseys at private sale. Rich in blood of the world famous King of St. Lambert, Ida, Mary Ann and Lucy of St. L. Stoke Pogs 3rd, and all the St. L. notables. Never in recent years has such a herd been offered for sale. Great udders, heavy producers, 6% fat. This herd held the state championship 3 years. Free from all disease. No old cows. Headed by a grandson of King Roter Lad. Will offer them at 14th their value rather than make a sale. \$5000 for 21 head. Come any day but Saturdays. L. J. Belknap, M. D., San Jose.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 821, Petaluma.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Wineville, California. E. R. Stalder, owner.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

Reg. Shorthorns—Fair Oaks Ranch, Wilts, California.

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For Sale—Limited Banner Strawberry Plants. These plants average 10 tons to the acre. Grown at the foot of Mount Shasta. Place orders while they last, 60 cents per dozen; 100,000 lots \$20 per thousand. J. C. BELL, Castella, Shasta County, California.

Berries. We can furnish you with first class plants of all leading varieties. Now is the time to order, because plants will be scarce later. Send for price list. M. J. MONIZ, Berry Specialist, Sebastopol, California.

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For Sale—Strong Mountain Grown Brandywine Strawberry plants at two dollars per hundred postpaid. B. BRYAN, Camp Baldy, California.

For Sale—Winningsstad Cabbage Plants, immediate delivery. E. Willard, Virgin Station, on Santa Ana Line near Stanton, or address Anaheim R. No. 1.

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50,000 Florida Sour Stock; 100,000 California Sweet Seedling orange seed-bed stock, 15 months old, suitable for fall planting. It will pay you to plant this fall. **SOUTHLAND NURSERIES, 1941 East Colorado Street, Pasadena, California. Phone Colorado 6352.**

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Borge's Big Duroc Jersey Hogs—Herd headed by California Golden Model 3rd. A few choice females of desirable breeding for sale at very low figures. I am offering for sale the tried boar Dos Palos Chief (an Orion Cherry King Jr. boar). Here is an opportunity to secure a tried sire at a very low figure. Satisfaction assured. Write at once. Jack Borge, Dos Palos, California.

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Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. Hollow Hill Farm. B. W. Shaper, Manager, Colton.

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Tractor Bargains—Cletrac rebuilt and fully guaranteed \$1,200—Fordson \$700—Bean \$400—Yuba like new \$1,800. Many others. Leonard Fletcher, San Fernando.

For Sale—One heavy duty subsoiler. N. E. Heacock, Simons, California.

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Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. W. P. Dwyer and W. S. Gullford, Box C, Butte City, Glenn County, California.

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Wanted—Walnut Meats and Cull Walnuts. We have been in this business 15 years, solicit culls for cracking only, paying cash. Fred L. Mitchell & Son, 214 French Street, Santa Ana, California. Phone 551-M.

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FOREST CARE MEANS GROWTH
OF AMERICAN IDEAS

By Charles H. Shinn

At this time of the year when millions of people are taking trips to see friends, are traveling over the national forests and renewing their health and energy, some will be where they can do a little first-hand study of one or two of the problems of continued human existence on this planet.

We once asked one of the greatest of American thinkers: "What does the world most need?" Came the instant response: "Better brain power!" By that he meant, of course, more education of the right sort, higher average ability to do straight thinking, and broader fellowship everywhere.

It was a California newspaper man on his vacation this very month who complained in almost the same breath of the high cost of gasoline for his car, the high price of paper and books and the cattle that were grazing near to where he was camped. To all this a mountaineer replied: "Look deeper, please, and see the immensity of the whole great group of problems before our forest workers."

"Show me," the newspaper man responded.

"Let us begin with forest fires. If absolutely prevented—the end which foresters desire—none of the so-called 'forest waste' will be destroyed. Modern science, as so finely shown in the industrial research work at the ten year old forest laboratory, Madison, Wisconsin, is showing us how to utilize every cubic inch of it. You should visit that place and read an article about it in the July-issue of 'American Forestry.'

"As grazing improves on the national forests by reason of fuller co-operation between the owners of livestock and the government it is possible that large areas of moist meadows will be covered with paper producing woods, such as poplars. The sawdust piles and waste around old millsites will be utilized for paste-board and packing papers.

"Lastly, consider what men will do when all the oil and coal is exhausted. For one thing we shall make alcohol out of wood waste and sawdust to such a vast total that every forest floor will be swept clean. Long before that our private and our public foresters will be working together in perfect harmony."

"Write that down," the newspaper man told the mountaineer—and here it is!

FABRICS NAMED FOR CITIES

The origin of the names of popular fabrics is even more interesting than the tracing to third lingual roots of ordinary words. About the year 1329 the woolen trade of England became located at Worsted, about 15 miles from Norwich, and it was at this place that the manufacture of the twisted double thread woolen, afterwards called worsted, was first made. If not invented. Linsey-wolsey was first made at Linsey, and was for a long time a very popular fabric. Kerseymer takes its name from the village of Kersey and the mere close by it, in the County of Suffolk.

We have to thank Gaza in Palestine, the gates of which Samson carried away, for gaze or gauze. Gaza means "treasure." Voltaire, wishing to describe some intellectual but dressy woman, said, "She is an eagle in a cage of gauze."

Muslin owes its name to Mossoul, a fortified town in Turkey in Asia.

Tulle obtains its name from that of a city in the south of France. Travelers by rail in Brittany often glide past Guingamp without remembering that it was here that was first produced that useful fabric gingham.

Damask derives its name from the city of Damascus; calico from Calcut, a town in India formerly celebrated for its cotton cloth, where also calico was printed; cambric from Cambray, a town in Flanders, and tweed from the fabric worn by fishermen upon the River Tweed.

THE ATMOSPHERE OF ARGUMENT

"How's your singing society getting on?"

"Fine," answered Jud Tunkins. "The music hasn't come along very strong yet, but the debating is something extraordinary."

Household Department

HIS PARENT'S OPINION

He's never been to college and has little use for books.

Except the ones with lots of pictures in. He's not a fluent talker, though you'd think it from his looks.

But pretty soon we think that he'll begin.

We don't know how he learned so much, you'd be surprised to see

What marvelous intelligence he shows; It's just a source of never-falling wonder, sir, to me

The heaps of things our little baby knows.

Some children are accomplished; they can do a lot of things.

And do a number of them fairly well. One dances to perfection and another plays or sings.

Or in some other manner may excel. But not at two years often; they're comparatively old.

Our little skeezlecks now is barely two; You hardly would believe me, I imagine, if I told

You half the things our little one can do.

I've heard of other babies that their parents brag about;

They're prodigies, you'd naturally think.

The fond and foolish fathers quite believe it all, no doubt.

But I just smile and turn my head and wink.

I'm not disposed to blame them for their foolishness a bit;

They've got to make the most of what they've got.

But if you saw our youngster you would cheerfully admit

The cunning little rascal beats the lot.

DRESSMAKING

(Concluded.)

"O dad, need you ask? I'm so sick of this little old town that I can hardly stand it to walk to the postoffice. I know every teacher, every boy and girl, every possibility of school. I race through my books ahead of the rest and then have to go over the thing again with the class. And you don't have to be told that the school, like the town, is not what we'd like it to be."

"No," Mr. Prior admitted, "I don't have to be told that. I've made the mistake of sticking to the town till I can't leave, but I want my children to get out and make something of themselves."

He had found the paper he was looking for, and he held it out of Leila.

"There's a check for a hundred and fifty dollars," he said. "It came to me yesterday—as commission for selling Mrs. Lyon's house. Now, you can have it if you'll make it do the work of three hundred."

"O dad, thank you—and no thank you! How could I do it?"

"How could you make it reach? By using your brains. Your aunt has done her share, and now I'll do mine. The rest is up to you."

Leila's eyes questioned her mother, and read there that she was to accept.

"Very well," she said, flushing. "I'll do it, dad, somehow."

But her voice faltered. She knew why her mother, who was staring at a magazine, failed to turn the pages. She, like Leila herself, was absorbed with the thought of that outfit.

Two days later Miss Mina Lee appeared with her four pairs of scissors, her three cornered pincushion and her emery bag, and the village knew that the Priors were in earnest about sending Leila away. When the most self-effacing and industrious sewing woman in the county settled down in a house, it meant there was something being done. She was a friend of the Priors as well as their handy helper, and so she took it as a matter of course that she should be told the whole story of their difficulties.

"We've got to do it!" she declared. "Only think of Leila's going to St. Mary's! I once hoped to go there myself. That was before father died." She spread out her fashion books hastily, as if to apologize for having brought her affairs into the conversation. "Mrs. Prior, shall we shop by mail, and so save the expense of going to the city?"

So they studied fashions, estimated amounts of material, put down the requirements so far as possible and began work.

"I shan't need the riding costume," said Leila, "because I can't afford a horse, and my present school dress will do for tennis and skating. I'd like a silk gymnasium suit, but I suppose I'd better do with sateen."

"Your blue silk will serve for one

dinner dress," Mrs. Prior declared, "and I really think your old pongee could be cleaned and trimmed with coral colored satin and be made to do for another. Then you'll have to have one new one."

"A black taffeta, perhaps, with turquoise blue velvet on the bodice," suggested Miss Lee.

"If only my old coat were good enough!" said Leila with a sigh.

But they unanimously decided that it was not. The coat and the street suit they would buy ready made. Leila, who had talent for millinery, made the hats herself.

Of course Miss Lee's needle was not the only one that was busy. Leila and her mother sewed in every available moment, and soon forgot their scrupulous ideals about dusting. The meals became rather slapdash. Mr. Prior heard no talk except of the desired width of collars, the fashionable flare of skirts and the styles of sleeves, until he fled—even after supper—to his office. Miss Lee ceased to go home at night, but, like an anxious physician, "stayed on the case," sewing evenings and rising early in the morning to take some extra stitches, as she put it. Mrs. Prior began to look worn. There were circles under her eyes and her hands trembled. Once she put in a plea for moderation.

Can't we send some of your things on to you later, Leila?" she inquired. "Then Mina and I could finish them at our leisure."

But both Mina and Leila rejected the suggestion. They were feverish with their dressmaking orgy, and nothing could stay them.

"It will be so nice for Leila to be able to take everything out of her trunks in perfect condition!" said the enthusiastic dressmaker.

"Oh, let's finish everything up," Leila said.

The neighbors were forever dropping in to see how things were getting on, and their calls became more and more irritating to the three flushed and eager women. Hospitality at the Prior house languished as never before. It seemed the last straw when several of Leila's friends insisted on giving farewell parties. There was nothing she wanted so much as to be left to her tasks; but she could not reject the kindness of her friends. But it seemed to be the clothes of her friends rather than their faces that interested Leila at the parties. She had become possessed with the idea of fashions, and all of her usual sympathy, tenderness and geniality were swept into the background.

"The girl seems to be off her head about clothes," Mr. Prior complained to his wife. "Hasn't she another idea in her head? It seems to me education is going to be wasted on her."

"Oh, you don't think that really, Thomas," said her mother. "We've set a hard task for her—too hard, perhaps. Be patient; she'll come to herself presently."

"I don't understand women. Who'd think my little Leila would lose her head over clothes?"

Mrs. Prior could not deny that Leila had done so. Even in the tremulous hour of farewell, when for the first time the girl was leaving her home, she seemed occupied with the snaps on her gloves and the angle of her hat.

As Leila stood on the rear platform of the train, waving her farewells to her parents and her friends, she herself felt that something was wrong. It seemed to her that memories and regrets, loves and associations, were knocking at the door of her spirit and that she was refusing them entrance. All the room in her heart seemed occupied by other things—by little vanities and worries, details and fears. What if, after all, the tunic of her black taffeta were too long? What if they were not wearing girdles? Mina had such a liking for girdles that she had put them on everything.

There, the train has turned the bend. She had caught her last glimpse of all the people she knew best. Well, she must go in and ask for a paper bag for her hat, and she must remember not to rumple her Georgette crape collar against the chair back.

As she sought her seat she caught a glimpse of herself in a mirror and thought what a dark, fussy, fretful little thing she was. She wished she

The Cultivator
Patterns

BE SURE TO SEND SIZE

3169. Ladies' Dress—Cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. A Medium size will require 6 1/2 yards of 40 inch material. Width of skirt at lower edge is 1 1/2 yard. Price 10 cents.

3365. Boy's Suit—Cut in 4 sizes: 3, 4, 5 and 6 years. A 4 year size will require 1 1/2 yard of 27 inch material for the blouse, and 1 1/2 yard for the trousers. Price 10 cents.

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terial. Price, ten cents.

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(California)

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could look like her mother—only not so tired. But there were those forbidden thoughts knocking again! How would her mother spend the rest of the day? Lying down, resting at last in the dear little sitting room that had been allowed to fall into such sad neglect? Oh, why had she not made everything beautiful before she came away—put flowers in the vases, and left all the silver shining, and all the closets and shelves in order? Such a little treasure of a home as it was! And such parents as it held! And such friends as came knocking at its door—or, not even waiting to knock, came walking in, sure of a welcome, until that last fatal, feverish, curiously month when everything in the world had seemed blotted out except clothes.

"I'm a stupid, selfish, horrid pig!" said Leila to herself.

She had a ride of only four hours, and the last of it was enlivened by the young girls who got on the train, and who, Leila felt convinced, had the same destination as herself. But she was too shy to ask them, especially as most of them were with their parents. Watching them silently, she noticed their manners, their faces and their clothes—always their clothes. Several of them wore suits that Leila knew were quite out of date. But the wearers seemed unaware of that fact; they were very merry and rather noisy when at last the train reached Fairfield. A group of teachers and girls were on the platform, and all the passengers on the train craned their necks to watch the joyous greetings.

"This must be Leila Prior," said a pleasant voice. "I'm Mary Greer, and I was delegated to meet you. I know your aunt, Mrs. Whittaker Browne; she's my next door neighbor in the city, you know."

"Oh, I've heard of you," said Leila with awe.

This girl had indeed been long held up to Leila as a model. But Mary Greer failed to comport herself as Leila had feared she would. She was cordial and jolly, and Leila noticed, at first almost with shocked surprise, and then with relief, that she was wearing simple, unassuming clothes—a gray and green striped skirt and a soft green sweater. Somehow those clothes looked as natural as grass or leaves. Leila suddenly felt stiff and self-conscious. Was it possible that she could be too grand in her home-made things?

Mary Greer was introducing Leila to some of the girls round her and to some of the teachers, who gave her a hearty welcome. The scene and the occasion were quite as she had pictured them, yet she could not enjoy them as she should. Her heart leaped at sight of the beautiful campus and the mellow, old, rose hued buildings, but it sank again. She felt that she could not meet the occasion. She wanted to lie down in some quiet place and cry.

"Were you at all car sick?" asked Mary Greer sympathetically. "You're looking rather pale, aren't you? Or do you belong that way?"

Leila had to smile. "No, I don't," she said. "I'm dark and weird, but I have red cheeks when I'm feeling all right. I can't tell why it is, but I'm awfully tired—not fit to get up those steps, really."

Mary Greer put a vigorous, tennis hardened arm about Leila's waist.

"Here we go," she said commandingly. "Make a sprint of it. I'll take you to your room. It's next to mine. Formalities can wait till a more propitious hour."

Once in the quaint little room that had been her aunt's, and that she had dreamed of as the veritable antechamber to innumerable girlish delights, Leila broke down and sobbed. Mary Greer closed the door and locked it. She wisely let Leila's tears have their way for a moment or two. Then she asked:

"Is it breaking home ties?"

"I don't think so," faltered Leila, very much ashamed of herself and struggling to regain her calm. "I guess it's clothes."

"Oh, I know all about that," announced the senior. "Dressmaking's the serpent in the grass, the enemy in ambush. Wasn't I a victim of it myself as a freshman? The poor little freshies come here fagged to the verge of prostration. All nonsense. Could get along with half of what they have. Oh, yes, I know about the requirements, but take them with a grain

of salt. Wear your old clothes; borrow your sister's; tell the dressmaker to send them on later; but don't come into school with your nerves full of sand burs."

"O dear," said Leila with a sigh, "and I thought it was my duty! I got my things for half what I at first thought I should have to spend, but I've almost killed my precious mother, I suspect; and my little dressmaker, looked as if she'd had typhoid."

"Too bad! But here come your trunks. Shall I help you unpack?"

"Oh, would you? I feel as if I couldn't hang up a dress to save my life."

Mary Greer worked swiftly and efficiently.

"We don't go in for the extremes of fashion here," she remarked. "We look nice, I hope. We're not duddy. But, dear me, we can't be bothered with fuss and feathers. We've decided to make it bad form."

But as she lifted Leila's pretty, appropriate garments from the trunk, she had to pay them tribute.

"You're a perfect wonder to have superintended all that," she said. "I can see you're going to do what you set out to—if your strength holds out. But I've a bit of advice for you, if you feel you want it."

"Oh, I want it, please."

"If you must lose your head, don't do it over dressmaking," Mary Greer laughed lightly and held out her two hands to Leila with a gesture and smile that robbed the words of all offense. "Do you know, when I get married—as I suppose I shall sometime—I mean to do it suddenly, so that there'll be no chance for dressmaking. At least, none to speak of."

"But you have to have clothes!"

"Well, not so very many," said the other. "A few of the right kind will serve. But come, we must go. We'll stop in my room while I slip into a dinner frock."

Arm in arm, a few minutes later they descended to the refectory. Full of high spirits, girls by the twenties swarmed in with them.

"We part here," said Mary Greer with a smile, and gave Leila a friendly little push toward the freshman table.

The long tables, with their snowy cloths, bore asters in many hues. The hanging lamps gave a soft golden light, and beneath it the faces of the girls glowed with added loveliness. Leila found her place card and, following the example of the others, stood behind her chair. From her place at the end of the room beneath the great stained window the dean offered her "grace before meat."

"We thank Thee, Bestower of all blessings, for the food that is spread upon these tables, and pray that as we enjoy it we may partake of more enduring bread—the bread of friendship, which hath a sweet savor. May good will be as the cup of cold water with which we refresh ourselves, and gratitude for opportunity as the wholesome meat that strengthens us. Keep us ever conscious of our need for the sustenance of the spirit as well as of the body, and give us zest for our quest of learning. Amen."

Leila looked at the gracious face of the woman who had spoken, and by a chance met fairly her clear gaze. The dean smiled, and gratefully Leila smiled in answer.

Then the dean seated herself, and the girls followed her example. Leila saw the young, eager faces, noticed the stately room, felt about her an indefinable and beautiful atmosphere of courtesy, of hope, of youth and delight. Some one spoke to her, and she turned, half timidly, yet with pleasure, to reply. It was not until she was back in her own room two hours later that she remembered that she had not noticed a single dress worn at that memorable dinner.

"The spell is broken," she said to herself, and laughed. "I'll take Mary Greer's advice. The next time I lose my head it will not be over dressmaking."

If a lamp has been filled to overflowing a medicine dropper is an excellent thing for removing the superfluous oil tidily.

And that inverted bowl beneath the sky
Of Washington, where bills are born
and die—

Look not to it for leadership, for it
is impotent to lead as you or I.
—Chicago Tribune.

HINTS FROM HOUSEKEEPERS

Beef Tallow for Shortening

Sometime ago a subscriber was inquiring for a recipe for using beef tallow for shortening purposes. I have used the following and find it very good:

Try out three pounds tallow and strain and while hot pour into it one (about) quart cottonseed salad oil. Stir until cool and you will have a fat good for all cooking purposes.—Mrs. Geo. C. Nevins, Hemet.

Grape Syrup

Just read your question in Cultivator about a satisfactory way of making grape syrup. I have made some for the last two years and we found it very good.

I put the grapes to boil without water, mashing them just enough to get some juice so they will not burn. After they are done I drain off the juice, bring it to boil again and add to each gallon of juice one tablespoon precipitated chalk. (Caution has to be taken in stirring in the chalk, since the juice rises the same as if you put in soda.) Let stand over night. In the morning strain the juice through a cloth without disturbing the chalk which has settled to the bottom of dish. Boil the juice down to a syrup. I have never used Muscats, but I have used Malagas and also Emperors. I hope this may be a help to some of your readers.—Mrs. H. A. Bachmann, Woodlake.

Homemade Syrup—Cucumber Catsup

Cane syrup:

Here is a syrup made from home grown cane, also from an old issue of the Cultivator:

Cut the stalks into small pieces to handle easily. Then peel all the outside away from the pith and put the pith through the meat chopper, first with a moderate knife, then second and third times with the finest knife. There is always quite a quantity of juice comes out at the back of the grinder, so to catch it all put a cup on a chair or box beneath; save this cup of juice by itself. Now cover the ground pith with water and boil until the sweetness is all in the water and the pith tastes like sawdust. Strain into another kettle and boil until the water seems all boiled out. Add the cup of pure juice (that was caught) and boil together till it is the consistency wanted and it will be pure white syrup with no bitter or strong taste. Do not make it as thick as molasses, the longer you boil it the thicker it gets and the stronger it tastes.

This was from A. E. W., Redondo.

* * *

Sugar Beet Syrup (home method):

Cut tops off beets, clean by soaking a few minutes and scouring with coarse stiff brush. Cut beets into slices as thin as one-sixteenth of an inch if possible. A butcher knife may be used, but a cole slaw cutter or some other slicing device is more convenient. The sliced beets are placed in a tight barrel and just enough hot water to cover them, boiling if possible, is poured in at once. The barrel is then covered with several thicknesses of canvas to hold the heat. The sliced beets are allowed to soak for about an hour. The barrel is agitated from time to time without being uncovered to bring out the sugar from the beets. The liquid is then drawn off, strained through several thicknesses of cheese cloth and placed in a kettle in which it is boiled slowly until it has evaporated to the thickness desired. It is important that the boiling be slow and the process take several hours. The work may be done outdoors if desired. Be careful not to scorch the syrup. The scum which rises to the surface of the liquid is skimmed off to remove the strong beet flavor. The syrup is bottled or canned while hot and sealed to prevent molding. It is dark in color but has a pleasant flavor.

* * *

Cucumber Catsup: Peel very thin six large fresh cucumbers, chop fine, add scant tablespoon salt and let them drain in colander an hour. Add two small or one large onion chopped fine, one teaspoon white pepper and one pint vinegar. Stir ingredients together well and seal in jars.

Let this stand at least a month before using. This catsup keeps for years. It is made without cooking and retains so perfectly the taste of fresh cucumbers that anyone fond of cucum-

bers likes it.—Mrs. H. R. De Hoff, Oxnard.

Grape Syrup

I think this is the recipe for which "Subscriber Fallbrook" asks in the Cultivator of September 25. It was published in the Cultivator of March 8, 1919:

"The following simple method for making syrup from grapes is much used in Southern Italy and can be employed in California just as well," says the Placer County Farm Bureau Weekly.

"This syrup can be made in any kitchen and is suitable to be used with hot cakes, cooking and other purposes for which corn syrups are used. It is much superior to most of the syrups on the market.

"The grapes are stemmed, crushed and heated nearly to the boiling point for a few minutes. The juice is then strained off through a muslin bag in the usual way and placed in a wide shallow pan on the stove. Eggshells are put in with the juice to neutralize certain of the acids—say about a dozen eggshells to the gallon of juice. Or prepared chalk (from the drug store) may be used instead of the shells—about one and a half to two ounces to the gallon.

"The juice is then kept boiling slowly until it thickens to a syrup of the desired consistency. It is then again strained through a bag and kept in jars."

We tried this last year, and it was much liked as a table syrup, but it was not tried for cooking purposes.

In putting the juice through muslin bag so much seemed to be wasted that would not go through the meshes of the cloth that we took only the seed out, then boiled the rest down, and it kept well, sealed in the usual way in Mason pint jars. If we used anything to neutralize the acid it was eggshells, but I cannot remember surely.—Mrs. J. F. Delzell, Lindsay.

HOUSEHOLD QUERIES

Dill in Pickles

How large should dill be to be used for dill pickles? Mine is about five inches high but I fear it is too small yet. I have never made any dill pickles but am anxious to learn. Can or should the dill be transplanted now? It came up rather thickly. I am afraid my cucumbers will be gone before the dill is ready as some of the vines seem to be dying now.—Subscriber, Oxnard.

The usual practice in making dill pickles is to use the entire umbel after it has blossomed or is in seed. The stems are broken off just below the blossom cluster and laid in the pickle jar with the cucumbers. The young plants have the same flavor so possibly it would be satisfactory to use these young plants now if inquirer has plenty of them. Of course, it would be necessary to use much more of the young green leaves than of the more aromatic seeds or blossoms. These plants, however, should mature yet this season so may be of use for later cucumbers. They are too high to transplant now; that should be done when they are two or three inches high.

Our inquirer does not ask for directions for making the pickles but in case she does wish recipe, here is one:

Use earthen or wooden crock. Use freshly picked cucumbers. Don't rub off spines in washing them. Place layer of dill plant over bottom of vessel and if liked a small quantity of mixed dill pickle spices which may be purchased at most groceries. On this place two or three layers of small cucumbers, another layer of dill plant and spices, repeating layers until container is almost full. Cover with layer of beet leaves or grape leaves at least an inch thick. Fill and cover with brine made of one pound of salt, 10 quarts of water and two-thirds quart vinegar. Allow to stand until fermentation ceases (3 to 4 weeks). Seal with paraffin. The pickles may be kept indefinitely by heating to boiling in brine in which they are made and sealing boiling hot in glass jars.

The way they are fixing up dairy barns these days, a feller would almost rather be a cow than a boarder at a cheap hotel.—Hoard's Dairyman.



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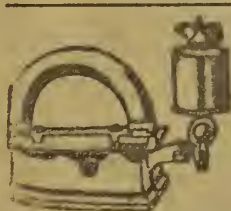
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Los Angeles Markets

Los Angeles, October 6, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 69 cents.

Dairy Exchange price last week on extras:

Sept. 29 30 Oct. 1 2 4 5

'20 ... 69 69 .. 69 69 69

CHEESE

Brokers' prices:

California flats, 32@34.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 76 per dozen; case count Produce Exchange closing price 70 per dozen; pullets, Produce Exchange closing price 60 per dozen; pewee pullets, 49.

Dairy Exchange prices last week on extras:

Sept. 29 30 Oct. 1 2 4 5

'20 ... 71 71 .. 73 75 76

POULTRY

Price to consumers: Hens, lt., 29; heavy, 32; colored, 35; broilers, 38@42; roasters, 38; old roosters, 14; fryers, 36; ducks, old, 23; ducklings, Pekin, 3½ up, 25; others 23; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47.

Belgian hares, live, 16@21; old, 9.

LIVESTOCK

Los Angeles, Oct. 5 — Weighed and delivered off cars without food or water: Hogs (hard-grain): 125 to 175 lbs., 16.50; 175 to 225 lbs., 17.50.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, October 5, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, market weak. Stocktons: Burbanks, best, 2.50@2.85 sacked; poorer low as 2.25. Sweet potatoes: Supplies liberal, market steady. Mostly 1.00@1.25 per lug.

Onions: Supplies heavy, market dull. Stocktons: Whites 2.00@2.25; Browns mostly 1.50@1.75 per 100 lbs. sacked. Garlic, lb., 12@13.

VEGETABLES

These are the actual prices obtained October 5 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 9@10; Limas, 7@9.

Beets: Doz., 50@60.

Cabbage: Supplies moderate, market steady, movement good, wide range in quality. Best mostly 3 per lb.; per field crate, best 2.50@3.00.

Carrots: Doz., 35@45; sack, 1.10@1.25.

Cauliflower: Supply increasing, doz., 1.25@1.75.

Celery: Doz. bunches, 80@1.00; cr., 3.00@3.50.

Corn: Local, best 75@1.00 per box.

Cucumbers: Market steady; local, best, lug, 70@85.

Egg Plant: Lb., 3@5.

Lettuce: Field crs., 1.50@1.75.

Peppers: Bells and Chilis, lb., 3@5.

Squash: Local summer, lugs, 75@1.10.

Hubbard, lb., 2½@3.

Tomatoes: Local lugs, best, mostly 50@75.

Turnips: Per doz., 35@50; sk., 2.25@2.50.

DECIDUOUS FRUITS

These are the actual prices obtained October 5 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies heavy, movement slow on small sizes, moderate on large sizes, market steady. Bushel boxes: Bellefleurs, 4 tier, 1.50@1.75; 4½ tier, 1.35@1.55; Jonathans, fancy, 3.00@3.25; Delicious, fancy, 3.50@3.75. Local: Loose, various varieties, 3@6 per lb.

Bananas: Lb., 11½@12.

Cantaloupes and Melons: Cantaloupes—Market steady, supplies moderate, quality and condition wide range. Local Tip-top and Paul Rose, pink meats, standard crates, best 1.00@1.50. Watermelons, lb., 1@1½.

Figs: Box, 75@1.00.

Grapes: Muscats, Malagas, 8; Tokays, 8@9; Cornichon, 8@9.

Peaches: Local, best, lug, 1.50@1.75.

Pears: Bartletts, best, lb., local, mostly 6@8; Northern mostly, 8@10.

Prunes: Lb., 7@8.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.75@3.00; special packed brands, 3.50@4.00.

Lemons: Market dull, wide range in prices. Local stock: Packed, bx., 2.75@3.25; loose, 1.00@1.50; lug, mostly 50@60.

Oranges: Supplies moderate, market strong. Valencia: Packed special brands, 126's, 150's and 176's, 7.00@7.75. Local packed, second grade, 4.00; packing house culls, 75@1.50.

HONEY

U. S. bureau of markets: Movement limited, market unsettled, prices slightly lower account slump sugar market and financial stringency. Carloads f.o.b. usual terms: White Sage Orange, 18½@20. Extra light amber sage, 17½. Light amber sage, 16; light amber alfalfa, 15@17½; Beeswax: 38@44.

GRAIN AND FEEDS

Grain Exch. prices bid October 3:

All grains are declining in price.

Barley: Carlots, on track, 1.70-1.02½.

Milo: 2.21@2.72.

Corn: Blk., Yellow, No. 2, 2.15; No. 2

White, 2.02½.

Gyp.: 2.80.

Bran: Kansas, 38.00-50.00.

HAY

Alfalfa Growers of California, October 6: The tremendous decline, still continuing, of corn, barley, oats, wheat, etc., has brought about an easier feeling. The alfalfa market shows sympathy with these other markets, though logically this should not be the case as there is no overproduction on supplies of alfalfa in the state, on the contrary there is a shortage which is bound to make itself felt abruptly between now and next spring. Neither can the cause of the easy feeling be laid to heavy stocks in the hands of dealers and consumers; on the contrary these stocks are very much lighter than usual at this time of the year. The market at present is not regulated very much by supply and demand, but principally by the condition of the money market; this is at the bottom of the phenomenal breaks in the prices of grain, cotton, wool, cattle, etc. Present prices of alfalfa hay are lower now than they should be and will discourage production, if they continue. The impression of the general public seems to be that prices of alfalfa are high, but they only see the prices quoted for fancy quality, while the great bulk of the production consists of ordinary hay which at about \$24, Los Angeles means a loss to the producer. Prices could be easily restored to the legitimate level and kept there, if the Association were strong enough to adjust the distribution to the current demand, but the unorganized marketing by outside growers in fits and starts under the present conditions only "from hand to mouth buying," makes the market so sensitive that it is easily thrown out of balance. What is there fore needed now more than ever is a stronger Association, that is more members and acreage, and this can very easily be accomplished if the present members will do their part by bringing in their neighbors who are still on the outside. There were 600 tons of hay of all kinds received on the Los Angeles tracks the week ending October 2, and 250 tons held over as against 1000 tons the week before.

Fancy dairy 37.00
No. 1 dairy alfalfa 29.00
Standard Dairy 25.00
Stock Alfalfa 22.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats 20.00@25.00

Barley 16.00@22.00

Alfalfa 25.00@27.00

Barley straw 8.00@10.00

San Francisco Markets

San Francisco, Oct. 5, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations:

Extras 67½

Dairy Exchange prices extras this week and year ago:

Sept. 28 29 30 Oct. 1 2 4

'20 ... 66½ 66½ 66½ 67 .. 67½

'19 ... 66½ 66½ 66½ 68 .. 68

Rcts. wk. ending Oct. 4, 341 cwt.

CHEESE

Dairy Exchange quotations:

Jack, full cream 23@26

Jack, half skimmed 17@20

Cal. Y. A. 39½

Cal. Flats 35½

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 81

Extra Pullets 66½

Undersized 65½

Dairy Exchange prices, extras this week and year ago:

Sept. 28 29 30 Oct. 1 2 4

'20 ... 76½ 78½ 79 78½ .. 81

'19 ... 79 77½ 78½

Rcts. wk. ending Oct. 4, 224,770 doz.

POULTRY

Wholesale prices are:

Prices in this market remained unchanged Monday from those of Saturday. There was but light demand in all lines and heavy arrivals expected. According to merchants on Front Street there is every prospect of a break in prices shortly. Quotations:

Broilers, 15 pounds per dozen, 50.

Colored fryers—2 to 3 lbs., 38@40.

Colored young roosters (smooth), 3 to 4 lbs., 40; staggy, 25@27.

Old roosters (colored), 20@23; market firm.

Leghorn hens, 3 lbs. and over, 25@30.

Large colored hens, 38@40.

Young Pekin ducks, 25; old ducks, 23@25; young geese, 25; market easy.

Live Belgian hare, 20@22; dressed, 25@30; market firm.

Dressed Turkeys—Young, large, .60; market firm; fancy, 50@53; live turkeys, young, 45@50; old, 45@50.

Squabs—Large, 55@60 per lb., market firm.

Pigeons—3.00@4.00 per dozen; market firm.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1000 to 1200 lbs., 9@9½; do, 1200 to 1400 lbs., 8½@9; do, second quality, 7@7½; thin, 5½@6.

Cows and heifers: No. 1, 7½@8; second quality, 6@7; common to thin, 3@4.

Calves: Light weight, 10@11; medium, 8@9; heavy, 7@8.

Lambs: Milk, 9@10; yearlings, 7½@8.

Sheep: Wethers, 7@7½; ewes, 5½@6.

Hogs: Weighing 100 to 150 lbs., 15½@16; 225 to 300 lbs., 16; 300 to 400 lbs., 15.

California Farm Bureau Marketing Association reports sales:

Visalia, September 28

No. Hogs	Av. Wt.	Dock	Price
71	214	...	\$16.05
2	300	...	15.55
81	198	...	15.80
77	199	...	15.65
1	510	200	12.65
10	216	...	13.65
48	154	...	14.60
25	225	...	15.60
12	270	190	13.60

Four cars, 34 consignors.

Tulare, September 28

No. Hogs	Av. Wt.	Dock	Price
77	189	...	15.75
7	146	...	14.75
88	193	...	15.50
50	138	...	14.00
40	256	20	14.75
86	196	...	15.65
13	339	435	12.75
11	306	...	13.75

Five cars, 17 consignors.

Hanford, September 30

No. Hogs	Av. Wt.	Dock	Price
72	211	...	16.00
79	195	...	15.70
13	391	140	14.00
5	106	...	16.00
6	306	...	15.20

Two cars, 24 consignors.

Wasco, October 2

No. Hogs	Av. Wt.	Dock	Price
82	196	...	15.80
17	304	485	10.25
27	174	40	15.60
11	152	...	15.60
45	203	...	15.60

Two cars, 15 consignors.

HIDES

Hides: No. 1 heavy, 55 lbs. up, 15 per lb.; medium, 45 to 55 lbs., 15c; light, 30 to 45 lbs., 15c; native bulls, 12c; center branded hides in all grades 2c less base price and No. 2 center branded 3c less.

No. 1 wet salt kip, 15 to 30 lbs., 16c; No. 2 do, 15 to 30 lbs., 14c; No. 1 wet salt calf, trimmed, 24c; and do, untrimmed, 19c; No. 2 calf, 2c lb. less. The price of No. 2 hides will be 1c less than the price of No. 1.

No. 1 dry, 16 lbs. and up, 25c; kip, 7 to 15 lbs., 26c; calf, under 7 lbs., 28c; dry stags and bulls, one-third less than dry hides; dry glue hides, kip and calf, one-third price or less, according to quality; pickled hides and skins, 3c less than dry flint; dry salted hides and skins, 9c less than dry flint.

Pelts: Long wool, 9 to 12 months, 1.50 up; medium, 6 to 9, 75@1.25; short, 3 to 6, 40@70; shearlings, good, 1 to 3, 10@15; do, shaved or damaged, up to 10c; lambs, large, long wool, 50c up; lambs, small, 15@30; milk lambs, 5@15.

POTATOES AND ONIONS

Wholesale prices: Potatoes, per cental: Delta, 2.00@2.65; choice, 2.75@3.00; sweets, 3¼@3½ lb. for No. 1.

Onions: Fancy, 1.00@1.20; yellows, 90@1.00 cwt.; brown, 1.00@1.15.

Garlic, new, 6@7.

VEGETABLES

Wholesale selling price:

Artichokes: Doz., 40@1.00.

Beans: Lb., String, 5@10; Lima, 12@14.

Carrots: Lb., 1½@1¾.

Cucumbers: Lug, 75@1.25.

Cabbage: Lb., 1@2.

Celery: Doz., 40@45.

Corn, 3.00@3.50.

Egg Plant: Livingston, lug, 75@1.25.

Lettuce: Doz., 35@40.

Okra: Bx., 1.00@1.25.

Peppers: Bells and Chilli, bx., 75@1.00.

Rhubarb: Lug, 1.75.

Spinach: Lb., 6.

Squash, Summer: Sacramento, lug, 1.50@1.75.

Tomatoes: Fancy, Stone, 1.50@1.75.

FRESH FRUITS

Apples: Gravensteins, fancy, 2.25@3.00;

B grade, 1.75@2.25; Bellflowers, 1.25@1.50;

Rhode Island Greenings, 1.75@2.00;

Jonathans, lug, 2.00@2.75; Newtons, 2.00@2.35.

Avocado: Florida, doz., 3.00@5.00; Cal. Blacks, doz., small, 1.00@1.25.

Bananas: Lb., 10@11½.

Berries: Strawberries: 8-oz. baskets, 85@1.00 per drawer; 12-oz. basket, 1.15@1.25;

raspberries, 80@1.00 per drawer; blackberries, chest, 8.00@10.00.

Cantaloupes and Melons: Turlock cantaloupes, standard, 1.00@1.50 lug; Sacramento, do, 65@90 per lug; casabas, 75@1.00 per crate; watermelons, 1½@2 lb.; Honey Dew, 1.50 per crate; muskmelons, 1.50@1.75 per large crate; Persians, 1.75@2.00 per crate.

Figs: Double, 1.00@2.00; single, 1.00@1.25; White, 50@1.25.

Grapes: Black, 1.75@2.00 per crate; seedless, 2.00@2.50 per crate, 1.00@1.75 per small lug, 3.00@4.00 per big lug; Tokay, 2.00@2.25 per crate, 2.50@3.50 per lug; Malaga, 1.50@1.75 per crate, 2.25@3.00 per lug; Muscat, 1.75@2.25 per crate, 3.00@3.50 per lug.

Nectarines: 1.25@1.75 or or lug.

Peaches: Per small box, 1.25@1.50; L. A. lugs, 50@1.25; large lugs, 1.50@2.50; Salway, 1.75 lug.

Pears: Bartletts, No. 2, 2.00@2.50 for wrapped per box.

Persimmons: Bx., 3.25@3.50.

Pineapples: Dozen, 5.00@6.00.

Plums: 1.75@2.50 per crate or box.

Pomegranates: Box, 1.00.

Quinces: Lug, 1.00@1.25.

CITRUS

Valencia oranges, 6.00@7.50; lemons, 2.00@4.00; Grapefruit, 4.00@5.00.

DRIED FRUITS

Raisins: Sunmald, seeded, 36 15-oz. pkgs., 27c pkg; bulk, seeded, 25-lb. bxs, 28c lb.; 3-crown L. M. raisins, 25-lb. bxs, 28c lb.; 2-crown L. M. raisins, 25s, 27c lb.; black grapes, 25s, 35c lb.; feheragogs, 27c lb.; malagas, 27c lb.; red berry muscats, 20-lb. bxs, 12c lb.; Thompson seedless, 25-lb. bxs, 25c lb.; clusters, 5-lb. bxs, 1.50 box.

Figs: Fancy black, 25-lb. bxs, 12c lb.; choice black, 25-lb. bxs, 9c lb.; extra choice, 25-lb. bxs, 11c lb.; choice whites, 25-lb. bxs, 12c lb.; fancy whites, 25-lb. bxs, 18c lb.; whites, 70-4 oz. 8.75 box; whites, 50-6 oz., 3.50 box; 10-4 layer, fancy whites, 2.25 box.

Prunes: 30-40 prunes, 25-lb. bxs, 23c;

40-50, 25-lb. bxs, 21c; 50-60, 25-lb. bxs, 19c lb.; 60-70, 25-lb. bxs, 16c; 70-80, 25-lb. bxs, 12½c

BEET GROWERS WOULD HAVE SUGAR MILLS

Keen interest is being evidenced by sugar beet growers in various sections of the country in the possibility of producing their own sugar on the farm by some simple process or of establishing and operating their own sugar mills. Owing to the scarcity and high price of sugar numerous inquiries on the subject are being received by the U. S. bureau of plant industry.

According to specialists of the bureau who have made a close study of all phases of beet sugar production, there are several fundamental features to be taken into consideration in the establishment and operation of sugar mills. In the first place no simple or inexpensive method of making sugar from beets on a home or small scale has been devised. Therefore a fully equipped sugar mill is necessary in producing sugar from beets. The smallest beet sugar mill to be successful should slice not less than 500 tons of beets a day for a period of 100 days each year. Since the average yield of beets in the United States is ten tons per acre, not less than 5,000 acres of beets must be grown annually for each mill of this size. A smaller acreage would probably cause the mill to operate at a loss under normal conditions. There is almost always a larger or smaller loss of beet acreage during the season in every community where beets are grown, hence in order to bring 5,000 acres of beets to maturity it would be wise to plant about 5,500 acres. In order to insure the production of from 5,000 to 6,000 acres of beets annually in a given beet area there should be available in that area at least from 15 to 20 thousand acres of good beet land, so that proper crop rotation can be practiced. This acreage should be so located that from 25 to 50 per cent of the beets grown can be delivered at the sugar mill by wagons, and the remainder of the beets should have a freight haul of less than 100 miles, in order to avoid heavy freight charges.

The construction and equipment of a mill of 500 tons slicing capacity would cost under present conditions approximately \$750,000. This is about 50 per cent above pre-war costs owing to the increased price of materials and the higher scale of wages. In addition to the initial cost of the mill approximately \$500,000 of working capital would be required in cash for overhead charges and operating expenses until returns can be expected from the sale of sugar.

Probably the most important of the other items to be taken into account in the operation of a beet sugar mill is that of a supply of sugar beet seed. A 500 ton mill would require about 100,000 pounds of seed annually to insure the production of sufficient beets for a 100 day run. Sugar beet seed of good quality has been produced in the United States each year for several years, and those who are considering the erection of beet sugar mills should look into the possibilities of producing their own seed. This minimum sized mill would require in addition to its permanent employees about 300 workmen for the operating period and a good supply of pure water, high grade lime rock, and plenty of coal for fuel, besides numerous other supplies.

SUDAN GRASS

The U. S. department of agriculture has made investigations as to Sudan grass and finds that it is proving a remarkably economical means of producing large quantities of very good hay. It has issued Farmer's Bulletin 1126, 32 pages filled with text and illustrations. The book is summarized:

Sudan grass was obtained in 1909 from the Sudan government at Khartoum as the result of a systematic search for a form of Johnson grass without root stocks. No other plant importation ever gained such immediate and widespread popularity in the United States.

Sudan grass is strictly an annual without underground root stocks. It grows to a height of three to five feet in drilled seedings and five to eight feet in cultivated rows. Drilled seedings are generally preferred for hay and the cultivated rows for seed production.

Sudan grass requires a warm climate for its best development and is of most value as an emergency hay

crop, being superior to millet for this purpose in all except the northern third of the United States.

In irrigated sections of the Southwest Sudan grass yields practically as much hay as alfalfa and is very useful in providing a variety of roughage for dairy cows.

The best time to cut Sudan grass for hay is when it is in full head, but the grass can be harvested somewhat earlier or later than this with no material loss in feeding value.

Sudan grass is a good soiling crop but is of minor value for silage. The hay is equal in feeding value to that of timothy, millet or Johnson grass.

It is being utilized more and more as a summer pasture in the Central and Southern states and is valuable as a pasture in the irrigated districts of the Southwest.

There is less danger of prussic acid poisoning in pasturing or feeding Sudan grass than larger sorghums, but care must be observed in pasturing the grass, especially in the Northern states.

Feeding experiments have shown Sudan grass to be an excellent roughage for work animals and stock cattle and only slightly less valuable than alfalfa for milk cows.

Seed production is profitable only in certain favored localities. Johnson grass seed is dangerous as an adulterant in Sudan grass seed south of the thirty-eighth degree of latitude only. There Johnson grass behaves as a perennial and is difficult to eradicate.

Sudan grass hybridizes freely with the sorghums and care is necessary to keep it from becoming a mongrel crop as have many of the sweet sorghums.

TO ERADICATE OBJECTIONABLE BIRD ROOSTS

At certain seasons of the year blackbirds, starlings, cowbirds, English sparrows, purple martins, robins and others establish nightly roosts at which thousands of the birds often gather. Frequently these roosts are located in the residential sections of cities, where their noise and filth become a decided nuisance. To remove such roosts the following methods are recommended by the U. S. bureau of biological survey:

When the roost is populated with birds not protected by federal or state laws (usually the case with blackbirds, cowbirds and starlings) and when local regulations do not forbid, the use of shotguns is the most effective in bringing relief. Shells carrying No. 6 or No. 8 shot and loaded with black powder in order to make a loud report will give the best results. Firing may be done with perfect safety even in thickly settled sections, if directed upward toward the tree tops. In large roosts, where the bird population may be as great as 30,000, the work of four or five men will be required. Shooting should begin when the first birds appear early in the evening, as then they may be easily frightened. Later on when darkness arrives the use of guns avails but little, as the birds will then move only a few yards at a time. Shooting should be kept up on successive evenings until the birds move on.

In the case of large roosts it may take five or six evenings to accomplish the desired result. Even after the birds have moved on vigilance is required lest they attempt to reestablish the roost, either in the same tree or in a new abode. If they establish themselves where they will again be objectionable, the process must be repeated until the roost is moved to a locality where it will not be a nuisance.

When protected species are concerned or when roosts are formed in localities where the use of firearms is prohibited, Roman candles may be used. Relief has been obtained even by installing electric lights or bells in trees where the birds roost.

INDUSTRY'S NEED OF OIL

"Industry's Need of Oil" was the subject of an address by George Otis Smith, director United States geological survey, department of the interior, before the American Iron and Steel Institute. The following is an abstract of Director Smith's remarks:

The last ten years might be called the petroleum decade. The world war depended upon American oil wells for

motive power. Gushers and oil booms increased popular faith in an inexhaustible supply of petroleum. Domestic production doubled and consumption more than doubled, so that Mexican oil has become an absolutely necessary part of our supply. These ten years mark a transition from oversupply to overdemand.

The ever increasing demand for gasoline and fuel oil are the outstanding oil needs, so that the question of priority must soon arise. With an estimate of seven billion barrels in the ground and the 1920 consumption closely approaching a half billion barrels, this rapid pace cannot long be maintained. Benzol and alcohol from the coke ovens promise only enough motor fuel to meet part of the present increase in demand; oil from oil shales will not be labor cheap like the petroleum now flowing from the wells. Regard for the future forces us both to plan to use less oil and to import more.

Some restriction in gasoline consumption must soon come; fuel oil in locomotives and stationary steam plants must give way to the demand for this fuel by the navy and United States merchant marine, which alone this year require one-third of the output of fuel oil. Oil as a power saver has a unique function and the demand for lubricating oil must continue to increase as the use of machinery increases.

Pioneering for oil in foreign countries by American capital will not only help secure the needed oil but will also furnish markets for American manufacturers, especially of steel products. Planning for the future needs to include more attention to supplies of raw materials to insure the country's industrial life.

AGRICULTURAL SOLDIERS

Responding to complaints made largely through the National Board of Farm Organizations that recruiting activities by the army, navy and marine corps were tending further to increase the existing shortage of farm labor, the war department, by direction of Secretary Newton D. Baker, announced today that it had taken steps to reduce to a minimum the recruiting work of the army in rural communities and to concentrate its efforts in the larger cities.

Secretary Baker, however, intimated that even before complaints had reached the department he and his associates appreciated the situation and had taken measures to reduce rural recruiting. Instructions have been issued under which the activities of army recruiting parties outside of the largest cities will be reduced to a minimum and recruiting concentrated in the more thickly populated localities.

N. E. Shaw, secretary of agriculture for Ohio, A. P. Sandles and other farm leaders in the Buckeye state brought the matter officially to the attention of Secretary Baker. Mr. Shaw said the situation in Ohio was very serious and needed immediate attention.

Charles S. Barrett, chairman of the National Board of Farm Organizations, and Charles A. Lyman, secretary-treasurer of the same body, said the war department was pursuing an enlightened course in taking an action which in itself recognizes agriculture as of paramount importance.

"The time has gone when the instruction of a soldier will be limited to drilling and other purely military matters," said an officer of the war department. "While establishing an efficient defensive force, it is the aim of the war department to create a great industrial army so that as fast as the young men are discharged they can take their places as producers."

The future army will not spend a part of the day in drill and the remainder in idleness. A nation's defense consists of something more than an army that can shoot straight, ride hard, manipulate an airship or bomb a town. A defensive army must be an army that can produce food as well as repulse an army of invasion, and to this end it is the policy of the war department to make farmers of as many recruits as can by any means be induced to adopt the profession of agriculture.

The courses in agriculture taught at the army schools are under the direct supervision of experts obtained from the leading agricultural institutions of the country.

SEPTIC TANK

With running water provided in the home provision must be made for the resulting waste. Lacking a sewer system, the discharge is often into the common cesspool, which is merely a cistern or storage pit, in sandy or otherwise porous soil, three or four feet square, 12 to 20 feet deep and loosely curbed with plank. No provision is made for carrying off the waste from the cesspool, as it is expected the liquid waste will readily seep into the surrounding soil.

H. B. Roe, agricultural engineer at Minnesota University farm, finds the drawbacks to the cesspool quite definite. A suitable soil in which to dig it is not always present; in time the surrounding soil becomes saturated or plugged with the solid or semi-solid waste matter; the cesspool is then quickly filled beyond its capacity and overflows the surface with offensive liquid waste, so that a new pit must be dug and curbed from time to time; seepage of the waste through the soil is apt to cause serious pollution of well water strata in the vicinity.

A practical alternative to the cesspool is the septic tank, says Mr. Roe. The tank, which usually has two chambers separated by a baffle, consists essentially of a watertight concrete box set below the ground to exclude all the light and most of the air. The raw sewage or waste from the house is carried into the first or sludge chamber, where it is held from 12 to 36 hours. Most of the solid waste is broken up by natural bacterial and chemical action into liquids and gases. The final discharge is from the second chamber either in a slow, steady flow or intermittently every 12 to 24 hours by means of an automatic or hand operated valve. The nearly purified liquid thus discharged may be carried direct into a little drain or into an absorption system of drain tile laid with open joints near the surface, where the purification is completed by the sunlight, air and leaching action in the soil, or it may be discharged upon the surface or into a ditch at some distance from the house where an open stream dilutes and carries it away.

WEATHER REPORT

San Francisco, Cal., October 2, 1920.

Stations	Rainfall		Temp.	
	Wk.	Season.	Norm.	Max. Min.
Eureka	.30	3.29	1.46	84 56
Red Bluff	.00	.35	.90	98 62
Sacramento	.00	.61	.44	96 82
San Francisco	.00	.13	.34	86 85
San Jose	.00	.82	.42	92 54
Fresno	.00	Trace	.33	96 85
San Luis Obispo	.00	Trace	.53	94 54
Los Angeles	.00	.04	.08	84 62
San Diego	.00	.02	.08	74 61

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS, MARCH 21, 1916.

of California Cultivator, published weekly at Los Angeles, Cal., for October 1, 1920.

STATE OF CALIFORNIA.

County of Los Angeles, ss.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Frank J. Ironmonger, who, having been duly sworn according to law, deposes and says that he is the publisher and business manager of the California Cultivator and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: NAME OF PUBLISHER, POST OFFICE ADDRESS, Publisher, Cultivator Publishing Co., Los Angeles, Cal. Editor, C. R. Messenger, Los Angeles, Cal. Managing Editor.

Business Mgr. Frank J. Ironmonger, Los Angeles, Cal.

2. That the owners are (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding one per cent or more of the total amount of stock). Cultivator Publishing Co., Los Angeles, Cal. R. M. Teague, San Dimas, Cal. Frank J. Ironmonger, Hollywood, Los Angeles, Cal. J. H. Yetter, Los Angeles, Cal. W. R. Wood, San Dimas, Cal. E. H. Sanford, Claremont, Cal.

3. That the known bondholders, mortgagees, and other security holders owning or holding one per cent or more of total amount of bonds, mortgages, or other securities, are: (If there are none, so state).

None.

4. That the paragraphs next above, giving names of owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holders appear upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such interest is being held, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is (This information is required from daily publications only.)

FRANK J. IRONMONGER, Business Manager. Sworn to and subscribed before me this 25th day of September, 1920.

(SEAL) ROBERT WHITFIELD, Notary public in and for Los Angeles County, Cal. (My commission expires April 4, 1923.)



Training For Service

What science and engineering have done to develop the mechanical efficiency of the telephone, specialized training has done in the development of workers.

Plant engineers, linemen, directory clerks, toll operators, equipment installers, electrolysis engineers, trouble hunters, line repairmen, test table operators, chief operators, contract agents, building engineers, line installers, exchange repairmen, plant inspectors, trouble operators, fundamental plan engineers, draftsmen, estimate clerks, exchange operators, cable testmen, equipment inspec-

tors, wire chiefs, traffic engineers, galvanometer men, cable splicers, facilities engineers, surveyors, information operators, switchboard installers, accountants, testmen, supervisors, station repairmen, equipment engineers, directory operators, statisticians, appraisal engineers, routing operators and scores of other skilled employees are specially trained for the exacting work of providing telephone service.

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The Best Poultry House

By Jean A. Koethen



THE beginner who this fall plans for a house for the pullets he is to raise next winter will not decide on his plan without visiting the most successful poultrymen in his own neighborhood and studying their houses. He will have in mind, of course, the peculiarities of his own location, the direction of the prevailing wind, the slope of the ground, the amount of land available for a house. Other things being equal, he will follow the lead of his neighbors, especially of those whose experience entitles them to respect.

The one word which sums up the essential characteristics of a good poultry house is, "Comfort." It must face away from the wind. It must be dry at all times. It must be so constructed as to keep out rats and other pests. It must be easily cleaned. It must at all times allow free entrance and circulation of air. It must, if there is any difference in elevation, be built at the highest available point so that damp, cold air will drain away from it. A house at the bottom of a

waste than into 14 foot or 18 foot. They may be built of any length desired and divided into sections of 20 to 24 feet. A section, or "house," if we choose to call it that, thus contains about 320 square feet of floor and accommodates around 100 birds, for three square feet of floor should be allowed for each White Leghorn hen. Some poultrymen, to be sure, put 125 hens in such a house, but it is better to allow a little too much room than too little. Hens that are crowded are much more liable to attacks of roup than those with abundant room. These shed roof houses are generally seven feet high in front and 5 to 5½ feet in the rear and the droppings boards are high enough to permit the use of the whole floor for scratching.

Gable Roof House

Figure 2 shows a house of different type which is not as generally used, but which is particularly well adapted to a windy climate. This house has a gable roof, with the long slope to the front. The front is boarded up two-thirds of the distance from bottom



1. Shed Roofed House with Adjustable Shutter. Essenberg Ranch, West Riverside.

ravine or arroyo is a roup breeder. It must admit the maximum amount of sunshine, for sunshine is the greatest of germicides. It must provide sufficient room for the prospective flock. It must be so constructed that both sun and rain can be kept out when necessary.

The Shed Roof House

Figure 1 shows a type of house which is in very general use in Southern California. It is known as the shed roof type and is probably the most economical of all. Built to face east or south, it admits through its open front the cleansing, life giving sunshine to the farthest corner. As it has only one slope of roof there is no waste of timber or paper. The wide door at the end gives the caretaker access to both nests and roosts. The shutter of wood or canvas, fastened by hinges to the front of the roof, may be adjusted to admit any desired amount of air or sun, or may be closed entirely in a storm. These houses are usually 16 feet deep because timber cuts into 16 foot lengths with less

to top, the feed hoppers being so arranged that they are accessible from both inside and out. A wide door in the middle of each section and another at the end assure abundant ventilation. With the opening under the eaves above the droppings board tightly closed, hens in such a house are well protected in the hardest wind.

No-Yard House

Several types of no-yard house are used by California poultrymen. Some are similar to the house in Figure 1, with more room allowed for each hen. Where no yards are used four square feet of floor space is allowed for each hen instead of the three required for yarded hens. Others follow the plan of the Charles Weeks house shown in Figure 3, with variations. The essential characteristic of this house is that it keeps the hens in very small flocks. According to the original plan only 20 hens are kept in a space 8 by 8, but I have seen a house 10 by 12, housing 50 hens, which called itself a Weeks type house. Hens kept in these houses are on sand and in con-



2. Low Gable In Center of Roof. Front Closed from Bottom. Decker Ranch, San Gabriel.

finement for the whole of their laying career.

The advantages claimed for the no-yard house are that they take up less room, prevent spread of disease by keeping the hens in small flocks, make a larger egg yield possible than is usual in larger flocks. Its main dis-



3. Charles Weeks House. Cornele Ross Ranch, Pomona.

advantage would seem to be the amount of labor required to care for hens in so many units. This house is largely used around Pomona, and I have seen it in San Gabriel and Gardena.

Another type of no yard house is used, I am told, around San Diego. This is the Corning house, a long house in which the hens are kept in flocks of 1,000 or more. It is of the usual depth and divided by partitions which separate only the droppings boards, so that every hen in the house has the run of the entire house. Those who use these houses claim that the lessening of labor makes up for any possible increase of disease or decrease of production.

It is evident from what has been said that there is no "best" poultry house. Some may be better suited to certain localities than others, but in general it is the man who uses it that makes or mars any house. Given the careful sanitation and the conscientious attention to detail which is the life of the poultry industry, a man may keep his hens in any kind of house that appeals to him. Nevertheless, he will do well to follow his neighbors unless he is sure he can do better.

Poultry Queries

Conducted by J. A. Koethen

Leg Weakness in Hens

We have a number of hens with leg weakness. Can you prescribe a remedy to prevent or cure this disease?—Subscriber, Petaluma.

Leg weakness in hens is not a disease but a symptom. Sometimes what is really lameness due to rheumatism or tuberculosis is called leg weakness; sometimes weakness and prostration of the whole body, as in aspergillosis, seems to the observer to be merely weakness in the legs. The hen keeps quiet, not because her legs are weak, but because she is weak and ill from unsuspected disease. Sometimes there is paralysis caused by pressure on some of the nerves of the abdomen, due to indigestion or to inability to lay an egg which is in the oviduct ready to be laid, and the hen walks unsteadily or tries to walk and falls on the ground. Since it is useless to try to treat a symptom, it is necessary to first determine what is the probable cause of the weakness. If you will write me more fully just how the leg weakness manifests itself in your hens, what other indications of illness there are, and how they are fed, I may be able to suggest the cause of the trouble and its remedy. In nine cases out of ten, when more than an occasional hen is affected, there is something wrong with the ration.

Hatching Ducklings

Will you please tell me if ducklings can be successfully hatched in an incubator and if eggs from young ducks are all right to set. I have some fine young Mallards, now six months old, from which I am anxious to hatch next

spring.—Subscriber, Ripon.

Those Mallards will be all right to hatch from by January. I believe experienced duck men prefer to use a drake that is a little older than the ducks. If you have a drake that was hatched early last spring, or one from the year before, you ought to get

strong, vigorous ducklings. Yes on the big duck ranches all the hatching is done in incubators. The temperature must be kept a little lower, but the directions with your machine will tell you just how to run it.

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ASK YOUR POULTRY SUPPLY DEALER FOR LACTEIN — feed it the year round—vitalize your hens to the highest point of efficiency and health. GET LACTEIN NOW.

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The compounding of LACTEIN Condensed BUTTERMILK, with LACTIC ACID developed to the correct degree, imparts the condition of absolute digestion to all feeds. And this means that every feed is giving up its full strength to the poultry. Combined with this point is the fact of the REAL FOOD VALUE OF LACTEIN—and the health and strength it imparts to the system of poultry. The maximum poultry profit is obtainable through the use of LACTEIN Condensed BUTTERMILK.



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MR. W. S. FREEMAN, a breeder of Single Comb White Leghorns of Hayward, California, writes as follows:

"During April when my hens fell off about 31% normal egg production, I tried OLYMPIC Scratch Feed and OLYMPIC Egg Mash with *Dried Buttermilk*. A test was made by feeding 200 hens on OLYMPIC Egg Mash dry in hopper and OLYMPIC Scratch buried in litter, as per instructions.

"In about two weeks the production drop was checked, furthermore a decided improvement was made in the condition of the hens. The feeds were greatly relished by the hens, too.

"I intend to continue using both the OLYMPIC Egg Mash and the OLYMPIC Scratch. Yes, sir, I highly recommend both feeds to every one. The splendid results obtained on my flock can be duplicated on your flock, too."

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CRATE FATTENER

With Dried Buttermilk

is probably the most profitable market conditioner manufactured. Recently one of the largest wholesale poultry firms in the West, a concern that ships more than 10,000 birds a week, reported the following results of an experiment:

92 White Leghorns fed 100 lbs. of OLYMPIC Crate Fattener with Dried Buttermilk, gained 40½ lbs. in eight days.

A like number fed 180 lbs. of corn, oats, barley and semi-solid buttermilk, gained but 32½ lbs. in eight days, or at the rate of only 17½ lbs. per 100 lbs. of feed.

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CALIFORNIA CULTIVATOR

and **LIVESTOCK** and **DAIRY JOURNAL**

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

October 16, 1920

No. 16

Walnut Prices Help Swat H. C. of L.

SOME cooperators have held that one result of cooperation would be "all the traffic will bear." It is different these days; the intelligent cooperator says "Give us fair return; make the producer a fair price." And a fair price these days, in the minds of most of us, at least, has a somewhat downward tendency from the prices of last year. Raisin growers acted on this general principle. Wheat growers, while they are not cooperating as yet to any extent, are likewise accepting lower prices. Now come the walnut growers with 1920-21 prices which are materially lower than those of last year. The walnut industry has shown wonderful strides, and this is due in a large part to the intelligence of the management of the walnut growers cooperative association. To give an idea of this growth here are shipments and prices obtained over a period of a dozen years:

Year—	Production (pounds)	Price No 1 Soft Shell (cents)	Price Fancy Budded (cents)
1909.....	18,700,000	11.5	15.0
1910.....	19,200,000	15.0	17.5
1911.....	25,000,000	14.0	16.5
1912.....	22,500,000	14.0	16.5
1913.....	22,700,000	16.0	19.0
1914.....	17,800,000	16.5	20.0
1915.....	29,650,000	13.6	17.0
1916.....	29,200,000	15.5	19.0
1917.....	33,000,000	20.1	24.1
1918.....	40,230,000	28.0	31.5
1919.....	57,000,000	31.5	34.0

Prices F. O. B. California.

The opening quotations to the wholesale trade, as announced today by General Manager Carlyle Thorpe are as follows, f. o. b. California:

Diamond Brand No. 1, Soft Shells, 22½c; Diamond Brand No. 2, 16½c; Diamond Brand Budded, 25½c; Standard Budded, 22½c per pound.

The costs of automobiles, silks, cottons and other staple commodities have been tumbling topsy turvy, but nothing much has happened to food prices, aside from the partial collapse of the sugar market which still shows an advance of 100 to 140 per cent pre-war prices, so the walnut growers deserve credit for establishing a worthy precedent by bringing the cost

of at least one staple food product down to the bottom of the toboggan.

This action upset all precedents and came as a complete surprise to the trade since it is well known that the walnut growers have brought the present crop to maturity under pressure of the highest production prices in the history of the industry. Then, too, the output is much lighter than last year's, and the fact that the walnuts are of much superior size and quality naturally made it appear probable that firm prices might be expected.

General Manager Thorpe says the board of directors decided upon a sharp reduction in opening prices because they were sufficiently familiar with public sentiment to know that heavy price reductions in practically all foodstuffs must ultimately be made and that the walnut growers felt they might as well lead the procession by swinging the axe good and hard, thereby getting back to a reasonable price basis the quicker, and profit by maintaining the confidence of the public. He predicts that the low prices named will result in a swift and steady movement of new crop walnuts and that they will develop a strong and advancing market which will prove of ultimate advantage to the growers.

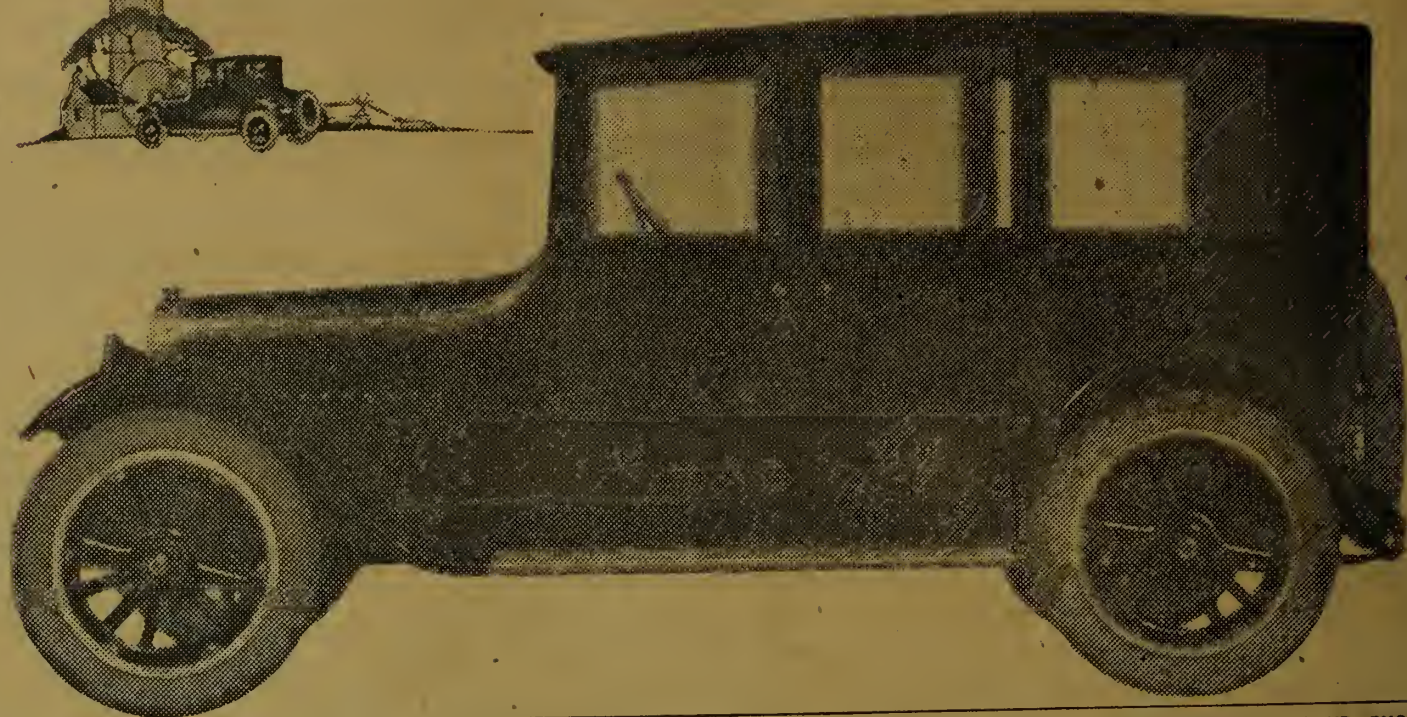
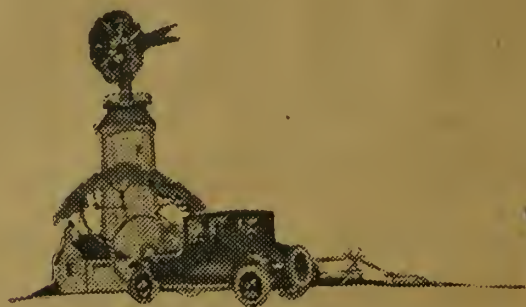
Not infrequently the farmer has been called a profiteer, but this action on the part of the California Walnut Growers proves that the farmer is one of the country's foremost price cutters.

In connection with this deep cut in prices it will be remembered that the opening prices named by the association in 1919 were regarded by the trade as being so decidedly in keeping with the trend of the times, as regards fair prices, that General Manager Carlyle Thorpe was in receipt of many telegrams from wholesale grocers, complimenting the association growers upon their fairness as well as their sound business judgment. The result was that walnuts moved faster than ever before in the history of the industry.

It will be remembered (Continued on page 511)



OAKLAND OWNERS REPORT RETURNS OF FROM
18 TO 25 MILES PER GALLON OF GASOLINE
AND FROM 8,000 TO 12,000 MILES ON TIRES



THIS NEW OAKLAND SENSIBLE SIX FOUR DOOR SEDAN IS POWERED WITH THE FAMOUS 44-HORSEPOWER, OVERHEAD-VALVE OAKLAND ENGINE

ALMOST the finest accomplishment of the Oakland Sensible Six Sedan is the character of service it has delivered the American farmer. Summer and winter, over good roads and bad, this capable and sightly car has afforded him and his family the utmost in efficient personal transportation. Today the high-power and light-weight principle of construction underlying Oakland's thrifty performance is embodied in an even stronger chassis of longer wheelbase. The comfort, the usefulness and the reliability of this competent model combine to a value not to be equaled in any other type of car.

OPEN CAR, \$1395; ROADSTER, \$1395; FOUR DOOR SEDAN, \$2065; COUPE, \$2065
F. O. B. PONTIAC, MICH. ADDITIONAL FOR WIRE WHEEL EQUIPMENT, \$55

OAKLAND MOTOR CAR COMPANY
Pontiac, Michigan

OAKLAND
SENSIBLE SIX

California Cultivator

Vol. LV, No. 16

Los Angeles, October 16, 1920

One Dollar Yearly

The Livestock Show in the South

By R. P. Royce

THE third annual Los Angeles Livestock Show is now a matter of history. For eight days Southern California was provided an opportunity to see at first hand a showing of better livestock that was a distinct credit to the entire West. When it is recalled that this annual show was brought into existence but three short years ago, and that the conditions surrounding the initial event were the most discouraging that any similar show has ever been called on to face, the 1920 exhibit must be reckoned a success. The success of a livestock show is too often measured by the gate receipts and the real purpose—the inspiration for a community to adopt improved breeding material because of the economic possibilities of better blood—is often overlooked. If the 1920 gate receipts are to be used to measure the success, then it can be frankly confessed that the management was disappointed. But if one is inclined to be an optimist and believe that the future welfare of Southern California was served

in a definite and emphatic manner, there can be little doubt but that the show was in every way a success. This matter of livestock is a very real problem for Southern California. The leading agricultural authorities of that section of the state are convinced that livestock holds the key to increased or even maintained production. Every orchard, grove or truck farm is facing, or soon will face, the problem of soil fertility, and it is becoming increasingly clearer that only through the medium of animal fertilizers can success be registered. Therefore the first problem is one of livestock and the second is one of better livestock. In short, the purpose of the Los Angeles show is to draw attention to the importance of animal husbandry and particularly to the advantage of handling the improved sorts. Such being the case, the show just closed fulfilled its purpose. The show was staged on the grounds of the Sixth District Fair Association, and because of cramped

quarters the management was forced to depart from the plan followed in former years and found it necessary to erect two barns within the infield across from the grand stand. Such a plan necessitated the crowds crossing and recrossing the track. Another oversight on the part of the management was a failure to provide attractions that would draw the night crowds. There were plenty of attractions during the mornings and afternoons. Judging occupied nearly all of each forenoon and the afternoons were overcrowded with events ranging all the way from a light horse show to bathing girls. Indeed, the multiplicity of afternoon events crowded in on the visitors to such an extent that at times a three ring circus would have seemed dull in comparison. Probably the management learned an expensive lesson. Another feature of the show that was the cause of wide criticism was the exorbitant charge of one dollar to the main grand stand and the

smaller stand serving the horse show. Fifty cents to enter the grounds and a dollar to get a seat was too much of a good thing. Notwithstanding the few points subject to criticism, that the exhibitors and visitors were inclined to overlook, the show pointed the way to the future and demonstrated that there was a real purpose served. Taken as a whole, it was the most ambitious effort yet made in the Southland. Quality ran high in all departments and indicated that during the past three years a marvelous livestock development has been made. It is understood that an attempt is to be made to secure an appropriation from the next legislature to be used to establish the show on a permanent basis. **The Dairy Cattle** The outstanding feature of the entire show was the exhibit of dairy cattle. Each important breed was represented, but the showing made by the Holstein breeders—practically all from the South—was declared to be (Continued on Page 518.)



Los Angeles Champions

1. Grand champion Shorthorn cow, Little Sweetheart, owned by T. S. Glide, Davis. 2. Blackhawk Villager, grand champion Shorthorn bull, owned by Blackhawk Ranch, Diablo. 3. Arzar, grand champion Percheron stallion, owned by Santa Anita Rancho, Santa Anita. 4. Beau Blanchard 76th, grand champion Hereford bull, owned by J. H. Lazler & Sons, Wells, Nevada. 5. Ruth Domino, grand champion Hereford female, owned by Romie C. Jacks, Monterey. 6. Veda's May King, grand champion Guernsey bull, shown by Walter H. Dupee, Santee. 7. K. S. P. T. Pet Segis, grand champion Holstein cow, owned by J. J. Jeffries, Burbank. 8. Jeffries' winning group of five cows in milk, reading from left to right, Gerben Canary Belle De Kol, Gerben De Kol of Maple Lane 2nd, Belle Canary Fyke Mercedes, Belle Fyke Nudine, K. S. P. T. Pet Segis. 9. Dichter Spofford Korndyke Lad 5th, owned by the George Junior Republic, Chino.

Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL
A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877
Combined with California Cultivator 1914
Livestock and Dairy Journal, Established 1901,
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Saturday October 16, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

EDITORIALETTES

The lives of five persons paid the penalty for endeavoring to beat an overland train. This was at the crossing of the Santa Fe near Glendora, last Sunday afternoon, with full view of the track and the approaching train, with a wigwag going in full operation and with three other automobiles stopping to give the train the right of way acting as warning to the driver of the death machine. Why didn't he stop? No one ever will know, for every one of the five in the machine was instantly killed. The number of lives being sacrificed to this speed mania is pitiful, even appalling.

An overland train drawn by one of the powerful compound locomotives coming down grade often has a speed approaching 60 miles an hour. At that rate of speed a train a quarter of a mile away arrives at the crossing in 15 seconds. The spirit of the gambler, which is in all of us more or less, may induce us to take a chance. If our speed beats the 15 seconds of the overland we are given the thrill because we got away with it. If, however, we fail to step on the gas hard enough and just equal the speed of the train, the thrill fails to materialize and sorrowing friends endeavor to explain how it happened. The 15 sec-

onds we would have stopped our car, increased by about one second for each car of the train as it passed over the crossing, would have caused loss of only one-half to one minute of time, which would have made us dead sure. That is better than being sure dead.

A good suggestion for our congressmen was made by a subscriber recently: "Instead of free seeds, why not free automobile parts?" Respectfully submitted.

Some months ago the Cultivator had an article regarding the George Junior Republic and made reference to remark by R. A. Condee, farmer and instructor in animal husbandry there, in a word, that agricultural training of boys is made more effective by association with animals of high breeding. At that time the animals in "the Republic" consisted of a few grade and fewer pure bred Holstein cows and Duroc-Jersey hogs. Later a young bull calf of the type of breeding desired was secured and a couple of helpers added to the dairy. The months passed, the young bull developed and was exhibited at the recent Los Angeles Livestock Show. He proved to be a winner of the grand championship for the breed, and in that winning he had no easy task, for animals exhibited were representatives of the finest breeding on the Pacific Coast.

At no time has Mr. Condee had command of sufficient capital to purchase the high type of animals he would have liked. It has been a matter of slow building up. But good judgment and knowledge of the points of animals which are winners proved even better than the possession of unlimited capital. All honor to Mr. Condee and to the boys who have worked so faithfully in caring for and fitting the animals for the show.

Once upon a time a man rushed up to the station master and said: "Can I catch the 10:20 train?" The station master replied: "Sure, if you run fast enough; it left two minutes ago." That man had just about as good a chance to catch his train as does the irrigator of deciduous fruit trees to save his next year's crop if he assumes that he can delay his irrigation too late in the fall and still produce a crop of plump fruiting buds next season. Next spring's mails will bring to this office innumerable requests for help for peaches showing little leaf, for fruit trees showing wealth of sickly looking bloom but few fruits setting. It will simply be a case of backing up to the preceding fall and irrigating. Lack of fall irrigation is not the only cause of spring troubles, but it is a prolific cause, and the grower may well take advantage of every opportunity to fill his late summer and early fall soils with the "optimum" of moisture.

We are heartily in favor of the initiative and referendum. We believe that the past few years have shown their worth to the state of California. On the other hand, their continuance is jeopardized by their unwise use. This is proven by this particular year when a score of measures are passed up to the voter to decide. Most of these should have gone directly to the legislature. The trouble is that few of the voters have opportunity or time to fully familiarize themselves with these measures and vote intelligently. It is a fairly safe proposition, where one lacks understanding of the measure on which he is voting, to vote No. However, the duty has

been put upon us to decide these questions, and there is nothing to prevent the voter from having the full text of the measures in question in time to read and inform himself. It is now only two or three weeks until these questions are to be decided by the voters and it is unfortunate that the text of the proposed laws is not in their hands.

Of the score of measures on which the voters are called upon to decide the Cultivator must advise a No vote on Number 7, "An Act Declaring it to be Unlawful to Dissect, Vivisection, Torture or Experiment upon Any Living Human Being or Living Animal, etc." The title sounds humane and there is appeal in it to every human with a heart. But in the text it says "The words dissect, vivisection, etc. are defined to mean that dissections or experimentation upon, etc." Further "It is unlawful * * * for the purpose of experimental physiological or experimental pathological investigation, etc." The college of agriculture of the University of California asserts that the success of this measure would prevent the production within the boundaries of this state of hog cholera serum, of black leg vaccine, of small pox vaccine, of an almost innumerable number of remedies, or rather preventives, of deadliest diseases of humans and of animals. This is apparently admitted by those working for the passage of the bill for we have just received from Mrs. Rosamond Rae Wright, president of the California Anti-Vivisection Society, an article or address by Dr. Wm. R. Bradshaw "The Uselessness of Biological Products in the Treatment of Livestock Ailments." Much is made in this address of the fact that hog cholera is not a cure, only a preventive. That is also the claim of the believers in the serum treatment; it immunizes well hogs. Likewise hydrophobia once developed in the human being has never been cured. But literally thousands of children given Pasteur treatment after inoculation with the deadly virus through bite of rabid dogs have been saved a horrible death. Many safeguards to humans would be removed and great suffering to livestock will result if the anti-vivisection initiative act is approved by California voters. It is No. 7 on the ballot. Vote No.

Custom of centuries makes it entirely proper to terminate the life of the old family cow that leather may be produced to protect our soles from the pricks and bruises of thorns and pebbles or even to slaughter the gamboling kid that our hands may be covered for—no, not comfort—simply for vanity. But that to inconvenience or possibly sacrifice one animal that hundreds of other animals or humans may be saved to usefulness and service is wrong, is cruel, is uneconomical, is even unethical will be a hard problem to solve to the satisfaction of California voters.

As one of its slogans in the fire protection campaign which it is conducting in the Minnesota pine country the department of agriculture suggests: "Fire Destruction is Quick, Forest Growth is Slow." Another equally striking and true is: "One Tree Will Make a Million Matches; One Match Will Destroy a Million Trees." The Cultivator wishes it could express more strongly than ever the truth that we should take no chances with matches, camp fires or cigarette stumps. Burnt timber pays no wages. When a fire is discovered

every one of us should become a member of a volunteer fire department, gather in others and do our best.

Riverside is dressed in her best for she has invited all California to visit all this week and till Tuesday of next week at her agricultural fair. Reports of the first days success indicate the greatest yet held there. All classes are well filled and livestock especially is making a great display. Secretary Van Pelt is highly gratified at the showing. Perhaps one of the principal features is the exhibit of the Riverside County farm bureau. Mr. Bennett, Mr. Klein and others of the Cultivator staff are on hand getting a story for next week's paper.

A subscriber to the Cultivator came in the other day and said: "Say, instead of jumping off on this idea of taxing all of us land owners and allowing personal property holders to go free, why can't we have an enactment, or at least a readjustment, which will permit a land holder, whether an individual or a corporation, to hold not to exceed 1,000 to 2,000 acres of land, according to its producing possibilities." This suggestion has been made by a speaker before a gathering of Sacramento Valley farmers. There certainly must be some way of securing more equitable division or distribution of the land than through dispossessing by excessive taxation. It is not a fair distribution of taxation and is not American.

"Making a Wreck of California's Lemon Industry" is the title of a very forcefully written booklet which is being circulated in many of the lemon producing districts of the state. It is by J. L. Matthews of Covina, Los Angeles County, and is filled with a vast number of facts regarding the lemon industry and the incomparable loss which has come to it. It has a political trend which makes it impossible for the Cultivator to use.

KEEP THEM AT HOME

California has suffered because of the unwelcome inhabitants of trees, vines and fruits which have been brought from almost every part of the world. Nearly all our most serious pests are imported. Now we have learned to keep them out, at least vast numbers of them, and we hope we will learn to keep all such pests from entering either through the harbors of the Pacific or the Atlantic. Likewise, let us be equally as careful in sending them on to others. Our own productive industry will be benefited by such a course because of the good will of other countries.

E. H. Ehrhorn, formerly of California, now chief plant inspector of the Territory of Hawaii, appeals to California in this particular. The board of commissioners of agriculture and forestry of the islands has found it necessary to rule that no shipment of potatoes or apples in the natural or raw state, whether by freight or express, shall be permitted to be imported into the Territory of Hawaii from ports on the Pacific Coast of the United States of America unless such shipment is accompanied by a certificate signed by a qualified officer of the city county or state from which the shipment is made, that the shipment has been inspected by him and is shipped free from insect pests and plant diseases.

Regarding this action, Mr. Ehrhorn writes Commissioner Ryan of Los Angeles County:

"This action by the board has been taken as a result of the poor condition of shipments of potatoes and apples arriving here from Pacific Coast ports, due to the infestation and infection by various insect pests and plant diseases, which are in a large measure responsible for the poor quality of the above mentioned commodities offered for sale in the territory and which in the past have been the cause of the rejection of a number of shipments."

Pruning Mature Orange Trees

By Robert W. Hodgson

FIFTEEN years ago and more it became evident that many of the trees in our citrus orchards did not measure up to the best of the variety to which they belonged. A. D. Shamel of the department of agriculture brought that fact home to citrus growers and uncovered the reason for this condition and its remedy. The reason, briefly, is: most of our commercially important citrus varieties are extremely unstable and constantly breaking up through bud mutations into inferior strains which unwittingly have been propagated and planted. The remedy is the use of buds for propagation purposes taken from the very best trees only and the top working of inferior trees to the best strains.

The Unstable Navel

As an illustration of the importance of this fact it is only necessary to follow the history of the Navel variety. Known here only for about a half century, it has given rise to a number of well known strains, including the Thomson, Golden Nugget, Navelencia, Buckeye, Yellow and others. In contrast, let us consider the history of some of our deciduous fruit varieties. The Baldwin apple of today is exactly the same as it was 150 years ago. As a class deciduous fruit varieties are rather stable.

This instability of citrus varieties influences the pruning. Each strain and type has its own habit of growth, some exhibiting rather wide differences from the original and standard variety. Many of our orchards con-

tain a half dozen or more different strains of the same variety yet the trees are all given treatment and are expected to respond similarly.

Still another factor is the peculiar property possessed by citrus trees in California as well as by certain other plants of producing different kinds of growth in the same individual. This quality is known as polymorphism and greatly complicates pruning.

Not all the leaves or other parts of a citrus tree possess the same efficiency. There are wide differences in tissue efficiency. Water sprouts and suckers have been well named, for it has been demonstrated recently that both are entirely parasitic in nature, abstracting excessive amounts of moisture from the tree and not returning elaborated foodstuffs to any degree. Sucker leaves have been found to evaporate many times the water per square inch that is lost by fruit wood leaves and to manufacture but a fraction as much carbohydrate material. Elimination of such growth makes for greater efficiency in the tree. On the other hand, old coriaceous leaves, past their prime, have been found to act similarly and to be a drain on the tree. Old hardened tissue beginning to show deterioration should be removed for the greater efficiency of the tree. Differences in tissue efficiency, as will be indicated later, play a vital part in regulating pruning practice.

Why We Prune

Large trees are expensive to handle.

A tall tree costs much more to fumigate than a medium sized tree, and the same applies to spraying. Labor is today perhaps the biggest factor in costs of production. The old Baronio system of lemon pruning, and the more recent hedge pruning, in which the trees were sheared off level at an arbitrary height, reflect the fact that it sometimes does not pay to climb too high for the fruit. Perhaps that time is coming again. I sincerely hope not, but it is a fact that, located on deep and fertile soils, citrus trees if not pruned are apt to become too large for economical fumigation, spraying and picking of the fruit.

Again, if left alone the trees become so dense that the major part of the crop is borne on the outside. To protect themselves against the too intense sunlight they develop a very dense outer foliage which results in the above mentioned failure to bear inside fruit. Noticeable differences in the response of the trees to this illumination factor occur in different parts of the citrus districts. The Washington Navel orange trees at Whittier and at Bakersfield look like two different varieties. At Whittier the tree is a strong, sturdy, upstanding, and not too dense tree. At Bakersfield it is a dwarf, very compact and dense, and decidedly squatty. No sunlight whatever filters through to the interior.

It is possible by judicious pruning to so regulate the amount of light filtering into the trees as to encour-

age interior fruiting to the point where a medium sized tree carrying fruit well distributed throughout its bearing area will greatly outyield a much larger tree the crop of which is all borne on the outside.

Rational System

I believe that a rational system of citrus pruning is based upon, first, recognition of the fact that there are different kinds of growth in citrus trees, together with the ability to distinguish them; second, a knowledge of their performance; and third, a clear understanding of differences in tissue efficiency.

What are the kinds of growth to be found in citrus trees? The writer prefers to classify them under two heads; namely, vegetative sorts and fruit wood, but the common terminology used by pruners is "sucker wood," "intermediate types" and "fruit wood." Trees propagated from vegetative growth buds grow rapidly and vigorously from the beginning. They make fine, vigorous appearing nursery trees. Such trees in the orchard at three years frequently are larger than fruit wood trees at five. They make a splendid appearance but come into bearing rather late, sometimes delaying this until seven or eight years of age. For ten or 15 years they may bear well, although the fruit is apt to be coarse and of inferior quality. They are weak mechanically and require propping or wiring and are subject to much breakage. Frequently after ten or 15 years of fair bearing they begin to show signs of deterioration (Continued on Page 512.)

Thoroughly Equipped Modern Ranch

SINCE old hide and tallow days the Spanish grant ranches of California have been producers of much of the livestock of the state. In the earlier days the hides, and possibly the horns, were amongst the principal factors in the production, for tallow was not always abundant. But there has been a material change and some of the most aristocratic of pure breds of the state, and even of the nation, are produced on these old time stock ranges.

Amongst others, on the sides of the Spadra hills in eastern Los Angeles County is the old Charley Wright place five miles west of Pomona. This place has great stretches of some of the richest land in the world, lying along the bottoms of San Jose Creek, and

other rich grazing lands in the Spadra hills, stretching down toward Fullerton nearly seven miles. In earlier days Mr. Wright had thousands of head of cattle and hundreds of horses mostly of the old time mustang type.

Today's scenes on the same ranch are materially different. It is now the site of the Diamond Bar Ranch, prop-

erty of F. E. Lewis. There are 7,500 acres within the boundaries of the ranch and a few hundred other acres are required for the various activities. Mr. Lewis has owned this place but a few years, but has made wonderful changes in its appearance in that time. The principal interest as yet has centered in the production of pure bred

Duroc-Jersey swine. It is one of the larger producers of pork and pure breds. There are thousands of porkers which have been thrown out from the pure breds. Of these there are something like 300 registered and strictly high class stock, but out of the hundreds capable of registry and considered amongst the purest of the pure breds they have secured, through most rigid system of culling, 48 sows which are now producing future prize winners.

There are also 1,000 grade Herefords which are being built into a much finer beef animal by the continual use of pure bred herd headers. The time will come, and it is not far distant, when the Herefords, like the porkers, all will be pure breds. In fact, it is all (Continued on Page 524.)

DIAMOND BAR RANCH				Year				Year				HERD RECORD			
Name & No.	Sex	Age	Color	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year
See's Line Mark															

Reproduction in miniature of upper portion of page from breeding record as used on Diamond Bar Ranch. The entire page is 11 by 14 inches with perforations for use in loose leaf covers, lines for records of 11 animals. This is declared one of the best of labor saving appliances on the ranch. This Record is supplemented by a series of cards which follow the pigs from pen to pen—blue for boars, buff for sows, and salmon color for porkers.



Picture at left shows train moving down the line and troughs so built as to receive feed from the tank car. Attendant is getting ready to operate feeder and fill trough as the train passes by. Center picture, a small portion of farrowing barn with locomotive passing down the line. At right, R. K. Walker at the "throttle" ready to discharge mixture of buttermilk and concentrates into trough. The feeding is done while train is in motion.

Agricultural News Notes of the Pacific Coast

Northern California

The rice crop is estimated at about 4,000,000 bags.

An outbreak of anthrax is reported at Grimes in Sutter County.

Mendocino's Apple Show will be held at Ukiah October 27-30.

Sonoma County will have slightly smaller prune crop than last year.

Sonoma County reports wonderful drying weather for her prune crop.

A farm bureau hog auction was held at Durham, Butte County, October 14.

Pear blight is receiving vigorous attention in orchards of El Dorado County.

A dehydrating plant at Roseville in Placer County is handling large quantities of Zinfandels, Tokays and Matros.

A prune and apricot exposition was held at the newly established deciduous experiment station at Mountain View, October 6-8.

The two farm centers of Capay Rancho in Tehama and Glenn Counties made a large display of products at the Glenn County fair.

Sugar beet farmers of the Pleasanton section of Alameda County are securing good sugar tests on their beets, tests running as high as 22.8 per cent.

Potato Inspector Shear of the state department of agriculture has been on a tour of inspection through Sonoma, Siskiyou and Humboldt Counties.

The 1920 hop crop has been selling at prices ranging from 55 to 62 cents. Large shipments have been sent to Japan, Australia, India and South Africa.

County Horticultural Commissioner Dutton of Mendocino has stopped the bringing into the county of fruit boxes from Sonoma County in an effort to keep out phylloxera.

Local centers of the Glenn county farm bureau will hold meetings at Capay, October 20; Elk Creek, 25; Grapevine, 27. The annual meeting of the county bureau will be held at Orland October 23.

An organized campaign for control of predatory animals is to be undertaken by the state department of agriculture working with S. E. Piper who has been in charge of such work for the United States biological survey in the western states.

V. G. Stevens has been appointed county horticultural commissioner of Contra Costa County. Stevens was formerly with the United States bureau of entomology as first assistant under R. L. Nougaret, now chief of the viticultural service.

The California Bean Growers Association announces schedule of advances which it will be enabled to make to members for 1920 crop. It is: Large whites, 3c; small white, 3c; pinks, 3c; blackeyes, 3c; red kidneys, 6c; red Mexicans, 3½c; cranberries, 3c; Bayous, 4c; Tepary, 1c; Henderson Bush, 4c.

No fall shearing was done by many sheepmen because of excessive demands of shearers who had formed combination and demanded 17½ cents for hand shearing, 22½ for machine shearing. This, together with the state of the wool market, was too much for the sheep owners and the sheep are still wearing their fall coats.

Central California

Olive picking has started in the Lindsay district of Tulare County.

Farm bureaus of Tulare and Kings Counties are considering establishing a cooperative sawmill.

Cotton harvest is in full swing in the Corcoran district of Kings County. Cotton is all short staple.

Associated Raisin Company has begun suit to prevent delivery of a 44 ton crop of Sultana grapes to an outside packer.

Shafter Growers Association of Kern County has secured a large quantity of rooted grapevines to distribute to members.

Cotton growers of the Lindsay district of Tulare County have formed an association and will incorporate in regular form.

The Chamber of Commerce of Lindsay, Tulare County, is urging all who can to list rooms to accommodate visitors and fruit workers.

California Peach and Fig Growers announces that I. J. Condit has been employed as field man to assist growers in cultural problems.

Apple evaporators in the Watsonville district are all busy. A larger proportion of the apples are being marketed fresh than last year.

A new grain elevator is being erected at Stockton by the Sperry Flour Company. It will have a storage capacity of 160,000 bushels.

Since picking started in the olive orchards of Tulare County growers generally are raising their estimates, and a large crop is now expected.

The almond growers state that the freight rate from Spain to New York on almonds is less than half the rate from California to points east of the Mississippi.

A Tulare County farm bureau cow testing association has been formed. It is expected that a tester will be secured so that the work can be started early in this month.

Drainage demonstrations were held last week in the vicinity of Watsonville, Santa Cruz County. They were under direction of the county farm bureau and the university extension.

Olives processed in accordance with new ruling of the state board of health for 40 minutes at 240 degrees Fahrenheit are said to retain their excellent appearance and good flavor.

This is pomegranate packing season at Porterville. Pomegranates are bringing fancy prices in Eastern markets and additional plantings are being made each year in this section.

Members of the California Associated Olive Growers met recently at Lindsay to discuss details of the contract with the California Packing Corporation and to pass on question of employing inspector.

Victoria Brunaro Johanna, a Holstein cow belonging to Mrs. Anne Donders of Fresno, leads in the seven day milk division of all cows under five years, according to report of the Holstein-Friesian Advanced Registry.

An intensive campaign for members has been started by the Farm Bureau Marketing Exchange recently organized in Merced, Madera and Stanislaus Counties. L. D. Love of Livingston has been appointed campaign manager.

Southern California

Yucaipa, San Bernardino County, celebrated Apple Day October 8.

Monday, October 18, will be Farm Bureau Day at the Riverside fair.

Taxes for 1920 become due October 18 and delinquent December 6.

The two walnut houses at Carpinteria, Santa Barbara County, are ready to receive nuts.

Los Angeles County farm bureau testing association now is testing about 4,000 cows.

There is a notable display of poultry at the Southern California Fair now being held at Riverside.

The Riverside County farm bureau is discussing advisability of raising membership dues from \$2 to \$5.

Associated Chambers of Commerce of Riverside County met at Arlington, October 5, in annual meeting.

The new state speed law went into effect October 1, making speed regulations uniform through the state.

A drainage district is proposed in the Cypress section of Orange County to cover some 8,000 acres of alkali lands.

A new citrus packing house is to be built by the Anaheim Citrus Association. The new house will cost \$75,000.

The walnuts of the Carpinteria Valley are showing up of fine quality and there has been little blight in the groves.

The cooperative cannery at Riverside has closed its season's run, having handled 2,300 tons of apricots and peaches.

The Riverside County farm bureau is preparing extensive exhibits for the Southern California fair to be held at Riverside.

Los Angeles harbor is rejoicing in news that freight schedules have been sharply reduced on railroads terminating at that point.

Cotton growers of the Coachella Valley have formed an association, agreeing to pay not more than two cents a pound for picking.

Embargo against shipment of alfalfa into California has been extended to include Utah, Idaho, part of Wyoming and Washoe County, Nevada.

County Horticultural Commissioner Sharp of Riverside reports that county has 25,037 acres planted to citrus fruits, 25,020 to deciduous fruits.

The California Lima Bean Growers Association has named prices at 8 cents for "Seaside" and 7½ cents for the regular choice re-cleaned grade.

Banning has had favorable prune drying weather. The "Press" says: "Prunes are being knocked, picked up, dipped, and laid out as fast as possible."

Citrus growers of Ventura County held a field institute at the Riverside experiment station on October 8. Professor Vaile was in charge of lectures and demonstrations.

At a recent meeting of the Farmers Alliance at Blythe a committee was appointed to canvass the Palo Verde Valley to learn the sentiment as to kind of crops to put in for 1921.

Lettuce growers of Westmoreland, Imperial County, expect to have the earliest lettuce crop in its history. It is expected to begin shipping in time to reach Eastern Christmas market.

The Coast and General

The pecan crop of the Mississippi Valley is very light.

The Pacific Coast cranberry crop will be large this year.

October 30 will be observed in New York state as Apple Day.

The fair recently held at Tillamook, Oregon, brought out fine display of dairy cattle.

Washington reports greatly increased interest in potato seed certification this year.

Fear that recent light rains in Washington would crack the prunes are proved unfounded.

The Oregon Growers Association has just completed a new apple packing plant in Green Valley.

Fruit shippers of western Washington are determined to secure from the railway a lower freight rate.

Sweet potato curing houses in Texas have been erected to the number of 128 with a total capacity of 1,000,000 bushels.

Fruit growers of Terrace Heights, Washington, have formed a cooperative marketing association and purchased warehouse.

The Interstate Commerce Commission has announced ruling that will enable carriers to make additional charges on diversion.

Japan has barred importation from United States, Canada and other countries of fresh apples, peaches and pears to prevent introduction of codling worm.

Presidents of two of the largest tire manufactories in this country have recently denied rumors that short staple cotton was being substituted for long staple.

According to estimates of the Oregon Cooperative Growers Association, the prune crop of Oregon and Clark Counties will not exceed 60,000,000 pounds.

The supervisor of vocational education for Arizona reports 47 applications for the home economics course. There is shortage of teachers in this department.

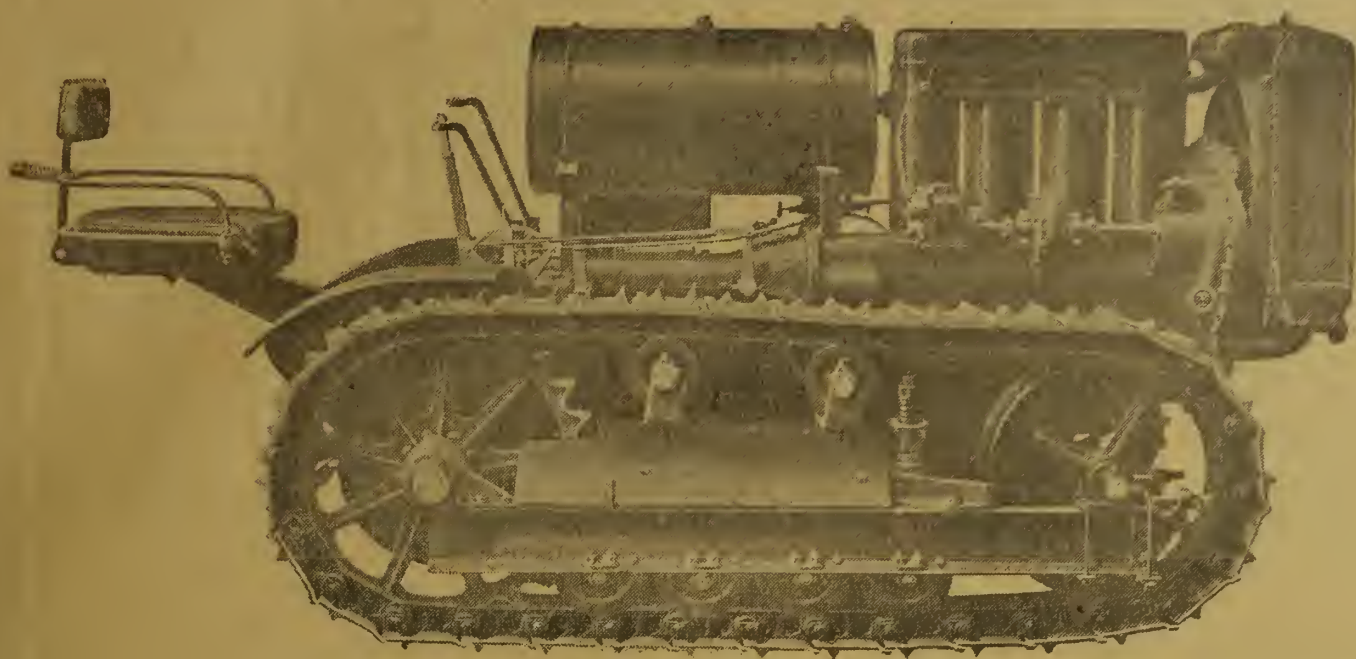
The Woman's Club of Phoenix is offering prizes to pupils of the public schools for the best exhibits of sweet peas at their annual sweet pea exhibit held each spring.

New York buyers of California wine grapes report serious shrinkage in weight, due to poor packing and handling. Alicantes have come through in better shape than other varieties.

Apple growers of Prosser, Washington, are now shipping out Winter Bananas, Jonathans and King David. Several shipments of King David have been made to Manila and Liverpool.

Two Arizona men have been elected to receive the Rhodes scholarship course at Oxford. Franklin D. Walker of Flagstaff will go this year and Bradford Trenham of Bisbee will go in 1921. Both are University of Arizona men.

Arizona's share of the national forest receipts for the current year is \$189,402. This sum is divided among the counties where national forests are located, and according to law expended for the public roads and schools of such counties. Ten national forests are located wholly or partly in Arizona.



Advance Announcement

BEST **TRACKLAYER** "Thirty" TRACTOR

Due to the insistent demand of farmers and orchardists upon the C. L. Best Gas Traction Company for a high grade tractor that could be used where the power required did not justify the purchase of a Best Tracklayer Sixty, the Company has perfected a 20-30 Horse-power model of practically the same design as their famous "Sixty"

AFTER months of trials and tests, this model is declared an exceptionally high-grade tractor, and factory production has been started. The design and materials used in this new "Thirty" are the outcome of a decade of high-grade tractor-building experience, and the knowledge gained by the successful operation of the Company's various models in the field. With each model, improvements have been made until today the "Thirty" stands a mechanically perfect tractor.

This new model is especially adapted to orchard work. It is small, compact, turns in its own length and is very easily managed. It will also eat up practically any belt job to which you may put it.

Working parts of the "Thirty" are entirely enclosed, and all gears are run in a bath of oil. Anti-friction bearings are generously used at points where long manufacturing experience dictates. Manganese steel tracks insure long life to the truck units. All working parts, though enclosed, are easily reached. The power is generated from a Best motor

—a motor which has long been recognized as the leader in heavy-duty tractor motors—bore $4\frac{3}{4}$ ", stroke $6\frac{1}{2}$ ", valve-in-the-head. The following additional description of the new "Thirty" will prove interesting:

Power Rating: Twenty h. p. at the drawbar, 30 h. p. at the pulley.

Speed: High, $3\frac{1}{16}$ M. P. H.; low, 2 M. P. H.; reverse, $2\frac{1}{2}$ M. P. H.

Dimensions: Length (not including seat), 9' 4". Height, top radiator, 59". Width over all, $11\frac{1}{2}$ " shoes, $53\frac{1}{4}$ ". Width between tracks, $30\frac{1}{4}$ ". Ground clearance, $11\frac{1}{2}$ ". Drawbar, $16\frac{1}{2}$ " high. Track centers, $41\frac{3}{4}$ ". Standard equipment, $11\frac{1}{2}$ " shoes. Length of track on ground 60". Stationary Drive: Standard pulley, diameter 12", with a 7" face. Pulley speed, 800 R. P. M. Belt speed 2513' per minute.

Weight: 6700 pounds.

Write for full information, specifications, prices and name of nearest dealer.

Ready for Delivery about February, 1921



C. L. BEST GAS TRACTION COMPANY

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WALKING TRACTOR

The three outstanding reasons for this tractor's superior performance are the positive traction of its grouser wheels, the solid live drive axle operating through individual clutches in each drive wheel, and protection of moving parts from dust.

It works with equal satisfaction in all soil conditions. Wet places are navigable because the grouser wheels are self cleaning.

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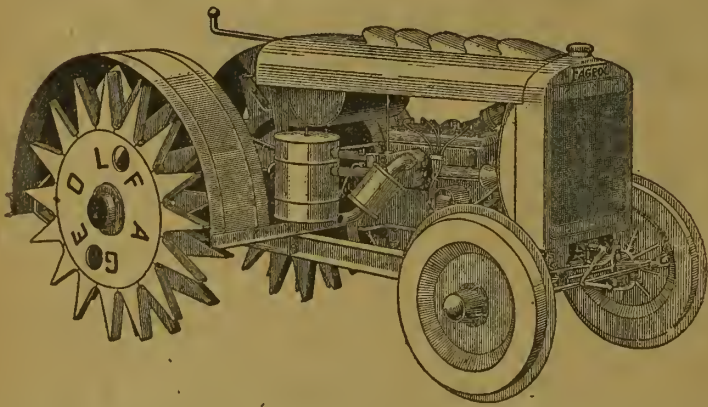
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When Writing Advertisers Mention California Cultivator

Choosing Soils and Crops

By Ernest Branton



UNDER the auspices of the Los Angeles County farm bureau Prof. J. W. Nelson of the state college of agriculture lectured at Hansen Heights on choosing soils when looking for a home place; selection of proper crops and best soil practice. The meeting was presided over by C. H. Landenberg, local director of the farm bureau, who introduced V. F. Blanchard, assistant farm adviser, to make a few announcements of future meetings contemplated in the Hansen Heights section. The more important of these will be a pruning lecture and demonstration by Dr. J. C. Whitten. Prof. Nelson then gave the audience some extremely profitable advice on soils and their treatment, of which the following is a brief synopsis.

"Were I looking for a place to locate I should first consider the soil. Usually one settles first and considers soil problems later. Much money is sometimes spent on perfecting titles, but not a penny on soil surveys,

years of light rainfall. In some parts trees have stopped growth in midsummer though leaves still cling and at times one was seen where leaves have dropped. Too often the owner harvests the fruit and then sits down in the belief that his season's work is done. But this is the very period when the tree prepares for the next year's fruit, if fruit is to be borne. From June to November deciduous trees store vitality and food for the coming crop. I found in many orchards soil 'air dry' below the upper eight or ten inches, so dry, indeed, that it was actually drawing moisture from the tree roots, the small feeding roots dead and in some case the trees dying.

Reading Soil and Tree

"Not until June 25, ranging to August 5, could we tell, even under the microscope, the leaf buds from the fruit buds. Then the work of storing and preparation goes on until November, during which month all becomes dormant and leaves drop. We have made a set of charts, based upon crop production following series of dry years and series of wet years. The winter of 1917 was a wet one in our best prune districts. The following summer, 1918, the yield was good; the second season, 1919, the yield was heavy, for the trees had builded and stored well from the stimulus of the 1917 rains. Following this the rains were light, the trees began running down and the 1920 crop was poor. We could trace such conditions back over the full period in which rainfall records were kept, or 35 years. We found in all parts of the state that leaves were dropped in June and July and no preparation made for next year. But we also found that everywhere fall and winter irrigations were practiced crops were uniformly good.

Soil Moisture Necessary

"We must have proper soil moisture, for aeration, working of bacteria, optimum conditions, are dependent upon this factor. How can we determine soil moisture? Do not look for surface signs of need or distress; it is then too late for best results. Even now the wilting point has been reached in some orchards over the state. Trees have been shocked and are adjusting themselves to drought conditions and are becoming dormant, a serious state indeed. Bore down and examine soil; apply water when soil needs it; do not heed the tree or other crop. Orchards are declining through lack of soil moisture when they should be in their prime. Dig and bore and irrigate while the tree is in prime condition. Closely observe moisture content and you will soon be able to judge through experience when soil is within one per cent of the wilting point; then apply water at once. If you cannot determine for yourself call on your farm adviser; he will aid you.

"Profits are made in horticulture, as in all industries, by observation of fine points, the little things, yet soil moisture is 75 per cent of the problem of success. We used to think that if we filled the soil with water that after the root zone was exhausted the lower storage was drawn upon through capillary attraction. We now know that water once down stays down, that movement of water is by gravity only. Scratching the soil for a half inch to kill the weeds is as good as a three inch dust mulch. This may save you from needless cultivation. One pound of humus increases the moisture holding capacity of the soil eight to ten pounds. Pay strict attention to soil conditions and bring back prosperity and that lost \$2,000,000 per year."

HOT

Jim—My pinchers are mad today.

Dick—How is that?

Jim—Why, I left them in front of a fire and they lost their temper.—September Boys' Life.

WRAPPED UP IN ITSELF

Teacher—Who can tell me what a cow's skin is used for?

Sammy—I kin, teacher! It's used to keep the cow's moat in.—September Boys' Life.

Determining Soil Moisture
Assistant Farm Adviser Blanchard at the auger, Prof. J. W. Nelson at right, examining borings.

analyses, etc. Oftentimes the soil is comparatively worthless in spite of the perfection of title. The soil content and condition is all important. Make borings in several places, six feet deep, to determine what you are about to purchase. Find out what the soil is fitted for and plant accordingly. Make no mistake. If you will grow oranges you should find orange soil and not purchase that best adapted to peaches or some other crop. Sixty per cent value only is now received in sections of best orchard practice. Catch up this 40 per cent deficiency by study and experiment.

Soil Survey and Map

"Draw a map of your land on a sheet of paper. Then make borings in many parts and enter upon map what soils are found in various parts, if there is a variance. Natural soil moisture and permeability are important factors, also climate. From a study of these determine what trees or other crops you will plant. Recently a high official of the United States department of agriculture lectured on 'Economics of Agriculture' and stated that important and far reaching changes are to come, based upon the needs or adaptability of the soil. See that trees suited to light soils only are placed in such soils, and do likewise for heavy soils. Grow trees to produce much leaf surface; leaves are the lungs of the trees; without a sufficiency vigorous trees cannot exist more than vigor is possible in a human being with insufficient lungs. Attend farm bureau meetings. Also analyze through frequent visits conditions and practices on the best farms in the neighborhood. Study deeply. Science is 25 per cent of the game; practice 75 per cent.

"Study of soil moisture and moisture movement is imperative. The orchards of California suffered a loss of \$2,000,000 last year in decreased production owing to lack of soil moisture. After eight months investigation throughout the state I find bad soil conditions in all parts and they are worse this season by reason of three continuous

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THE Fisk Clincher Cord offers the greatest tire value on the market for the small car owner.

To make a good straight-side cord tire and an equally satisfactory clincher cord is a success seldom achieved. The bead on the Fisk Clincher Cord is different from any other bead made. It fits the clincher rim properly and gives to this tire every advantage that the big cord straight-side tire provides.

There is no mileage, no resiliency, no satisfaction to compare with that of the small cord tire when it fits the rim, and the Fisk Clincher Cord does fit.

Next time—BUY FISK

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The State Convention

Director Hecke reports in merest outline some of the good things of the coming state convention beginning at Fresno November 9.

The convention will open on Tuesday morning, November 9, with the usual courtesies, and the opening address by the director of agriculture will review the present status of the agricultural interests and bring out clearly some of the more fundamental considerations which must be taken up at a meeting of this kind. Following this there will be discussions of the present and future problems of cooperative associations in California.

Wednesday, November 10, will be given over to a discussion of standardization of fruits and vegetables and transportation. With markets for agricultural products declining, as they have been recently, the fruit growers face very serious difficulties, and these are only added to by the shortage of cars and other serious transportation problems which must be dealt with intelligently and speedily.

The meeting for Thursday, November 11, will open with a discussion of "Some Important Phases of Crop Statistics" by the agricultural statistician of the newly inaugurated Cali-

fornia Cooperative Crop Reporting Service carried on jointly by the state department of agriculture and the United States bureau of crop estimates.

"Advertising as an Aid to Marketing Products" is a subject of live importance at this time, and we hope to have one of the foremost authorities on this subject in the United States address the convention.

Plant quarantine is doubly important at the present time owing to the large number of pests and diseases not in the state at this time, but which threaten our borders. It is hoped to have one of the recognized American authorities present to speak on effective and efficient quarantine measures.

On Thursday afternoon the program will be given over to matters concerning legislation, at which time the agricultural legislative committee, which was inaugurated at the Fifty-second State Fruit Growers and Farmers' Convention held in Chico last year, will report.

The banquet in the evening will be interesting, and at the same time some important topics will be presented for consideration.

Friday, November 12, will be given

to the discussion of dehydration of fruits and vegetables, and it is evident from the widespread interest taken in this subject by the people of the state as a whole and the inquiries which are constantly being made concerning the efficacy and types of evaporators that many people will attend this session. Simultaneously with this it is hoped to have a meeting of the Certified Seed Potato Growers' Association.

One of the important factors in the promotion of better fruit production and marketing is the group of men comprising the county horticultural commissioners. These men from the various counties of the state will be present throughout the Fruit Growers' and Farmers' Convention and, in addition, will hold a meeting of their own association on Monday and Friday of the same week.

The present program gives promise of no spare moments. Business of vital importance will be discussed and definite policies and plans decided upon. All those interested in the future of California agriculture are urged to arrange their plans to attend the entire convention.

THE PROVERB APPLIED

"I am tired of giving wedding presents," said Jobson.

"Well, returned his cynical companion, "it is better to give than to receive."—Boston Transcript.

THE CURE FOR BLACK ALKALI

By R. R. Snowden

It is well known, as pointed out by Hilgard some years ago, that gypsum reacts with black alkali (sodium carbonate) to form the beneficial calcium carbonate and the relatively harmless sodium sulphate; but another very promising means of its cure appears to have been up to the present entirely overlooked.

Sodium carbonate (black alkali) destroys vegetable matter, appropriating its carbon, under conditions favorable to oxidation, to form with itself the relatively harmless bicarbonate.

The cheapest form of vegetable matter—wheat straw for instance—may be used till sufficient change has been made in the soil to permit the growth of large crops of some kind of vegetation just where needed to complete the reclamation. Wheat straw compared with other materials proposed will be found far the cheapest. One ton of wheat straw theoretically converts 3.68 tons of black alkali into the bicarbonate, while this same amount of reclamation would require 3.4 tons of concentrated sulphuric acid or 6.5 tons of commercial gypsum, which contains about 92 per cent of actual gypsum. Whatever plant foods are contained in the wheat straw will be so much fertilizer added to the soil.

WALNUT CODLING MOTH CONTROL

The same rules and regulations pertaining to the control of the walnut codling moth which were in effect during the past season, except such changes as appear below, will be enforced this season, says an order sent out by G. H. Hecke, director of the state department of agriculture.

It shall be the duty of every person dealing or trafficking in walnuts to furnish a complete report of his transactions each week to the director of agriculture, or his duly authorized agent, on forms provided by the department.

All reports must be complete and executed in a clean, legible manner.

Every person handling walnuts will be listed as a walnut dealer and will be considered as such by the state department of agriculture until due notice has been given of his resignation.

All purchase of walnut meats must be reported the same as whole nuts except that they will be shown in pounds instead of sacks.

All sacks or containers of walnuts must be sterilized at some place approved by the department of agriculture as soon as possible after they are emptied and in no case shall more than one week's supply be allowed to accumulate.

At the beginning of the walnut season all sacks which are to be used for walnuts must be placed in convenient sized bundles and released by a duly authorized inspector before being delivered to any grower or agent. Said inspector will place a tag on each bundle certifying to its immunity from the codling moth and stating the number of sacks contained therein.

Any attempt to move walnut sacks from one place to another without the proper tag is a misdemeanor.

Until further notice all communication with reference to the above rules and regulations will be with the pest control service, State Department of Agriculture, Room 507 Union League Building, Second and Hill Streets, Los Angeles. Telephone, Pico 3621, Station 105.

STATE ACQUIREMENT OF LOGGED-OFF LANDS

The question of what will be done with strictly forest lands in California after the timber has once been logged will be a subject for consideration by the next legislature, according to a recent decision of the state board of forestry. It is pointed out that because of the long time required to bring forest trees to commercial size private interests engaged in logging virgin timber cannot be expected to be interested in the growing of new forests.

To bring new forests to commercial size after the present forests have been removed will require protection from fire and the reforestation of

REO

"How Long Are You From Town?"

It is no longer correct to ask "How far are you from town?" but, "How long are you from town?"

You can easily recall the time when to live five or ten miles from town was to be isolated.

Today the country home twenty-five or thirty miles out is considered "in the suburbs."

Distance doesn't matter—time is all that counts.

The automobile has brought the country nearer the city—it is about one-sixth the distance in terms of time that it used to be.

All but the farm itself—its supplies and its produce. Where horses are still depended upon to carry supplies

to, and to deliver the produce from the farm to market, the distance is as great as ever.

This Reo Speed Wagon does for the farm itself what the automobile did for its owner and his family.

It bridges the last gap between farm and market.

It enables you to get "top o' the market" for your produce—and on the return trip it brings your meats, groceries and other supplies as fresh as they go to the city dweller.

A modern farm is incomplete without a Speed Wagon.

And—you know of course—"If it isn't a Reo it isn't a Speed Wagon."

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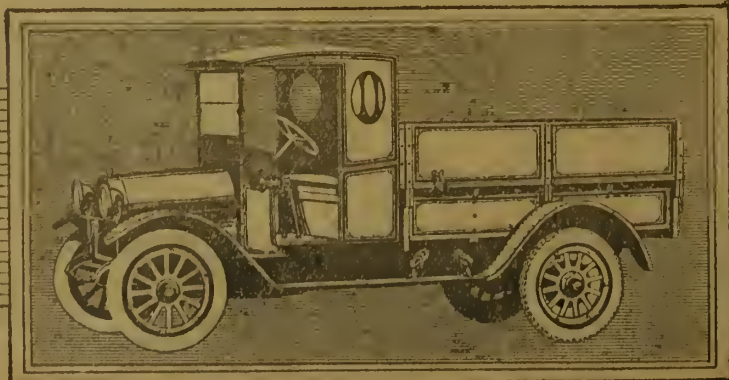
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It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILDW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand and Fleur de Soufre, packed in double

sacks, are the finest and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100% pure, in double sacks, for Dry Dusting and making Paste Sulphurs.

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men \$5 per day for making the solution and applying same.

To create additional available plant food and prevent smut in grain, drill into the soil 110 pounds per acre of TORO BRAND SPECIALLY PREPARED AGRICULTURAL SULPHUR—or our DIAMOND "S" BRAND REFINED POWDERED SULPHUR. This soil treatment has increased various crops up to 500%. Send for Circulars No. 6, 7 and 8.

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Ask us for prices for Carbon Bisulphide, the surest remedy for destroying ground squirrels.

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Have water on your own farm.
In spare time make wells for your
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areas that will not reforest themselves. For these reasons the state board of forestry proposes that the state acquire logged-off lands not suited for agriculture and proceed in the business of raising trees. It is proposed that lands that were logged in such a way as to protect the young timber and leave sufficient trees so that new forests will grow more readily shall receive first consideration. There are more than 600,000 acres of logged-off land in California most of which is better suited for growing forest trees than for agricultural purposes.

WALNUT PRICES

(Continued from Cover Page)

that during the war the cost of many foodstuffs advanced from 120 to 300 per cent, while walnuts at their peak only advanced 80 per cent, so it is evident, Mr. Thorpe points out, that the new price of walnuts makes them decidedly reasonable in comparison with the price of any other food commodities.

Consumers of walnuts this year will be glad to know that what California lacks in quantity she will make up in quality, because whenever there are fewer walnuts there are bigger and better walnuts. This is the unwritten law of a light yield, and it is always in the consumer's favor.

This year's crop of California walnuts will amount to about 46,000,000 pounds and will bring the growers from \$10,000,000 to \$12,000,000. The association's by-products factory will recover between \$1,000,000 and \$2,000,000 more from hand sorted walnut meats and charcoal made from walnut shells. This latter economy is wholly in favor of the consumer, since overhead expenses of the business are greatly reduced by the elimination of waste.

The walnut harvest has been in progress for approximately ten days. The nuts are of excellent size and are filled with plump white meats. A great many carloads of new crop walnuts will soon be on their way to eastern markets.

That the California walnut is recognized as a staple food product is indicated by the fact that the consumption has almost trebled in the last six years. The production was 17,800,000 pounds in 1914 while this year it will be at least 46,000,000 pounds. Mr. Thorpe says the universal use of walnuts all the year round is largely the result of the housewife's discovery that walnuts are really a food and that they can be used in the preparation of all sorts of table delicacies and after dinner confections. The slump in sugar prices lately has greatly increased the demand for candies made with walnuts and many housewives are returning to the idea of making their own confections, it is said.

The association reports that its carry over of last year's walnuts, which amounts to less than five per cent of the crop, was due to the combined influence of chaotic market conditions, high priced sugar and foreign competition, and that the small quantity of last year's walnuts on hand is moving in such a satisfactory way that it will doubtless all be out of the way before any new crop walnuts reach the market.

Mr. Thorpe points out that the California walnut industry must soon be given the benefit of an adequate protective tariff if it is to be saved from ruin. Within the past nine months the importation of foreign walnuts, chiefly from Southern Europe and Manchuria, has amounted to more than 50,000 pounds. This is a greater quantity than ever before found entrance to this country in any period of 12 months, and such competition, based upon prices lower in many cases than the actual cost of production in California, is certain to bring disaster to the great walnut industry of California unless an adequate protective tariff be provided without unnecessary delay. He points out that the low plane of living in foreign countries creates in the importation of walnuts to this country an economic problem of such magnitude that the California growers will not be able to withstand it for long.



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Avocados on the Half Shell

The California Avocado Association held its semi-annual meeting at the Hotel Pasadena, in Pasadena, October 9. There were three marked divisions: fruit exhibit, avocado lunch and after dinner speaking. The autumn meets are not the best for fruit exhibits, the springtime furnishing many more of the large or Guatemalan type, yet the exhibit of avocados was a good one and of other tropical fruits the display was unusually large. One Pasadena introducer of rare plants had the most extensive exhibit of this class of fruits that the writer has seen, all grown within a few miles of Pasadena.

At the luncheon more than 400 sat down to face plates upon each of which lay a half fruit in the shell (or skin); also an avocado cocktail and avocado salad. Afterward were served sliced avocados and crackers, the "makins" of sandwiches of your own construction, and this was followed by a hot dish of scalloped avocado and other good things to eat, finished by avocado ice cream. Inasmuch as the diners filled completely two large rooms, the management was forced to provide other quarters for the audience, which was done by repairing to the convention hall across the street where was heard

The Speaking

President Wm. H. Salmon made a short official address and some necessary announcements, after which he

introduced Prof. F. L. Griffin, associate professor of agricultural education, Berkeley, who made a strong plea for better financial support for the state university, saying that at present the citrus and avocado course of instruction was suspended for lack of funds to procure qualified instructors. The three speakers following were assigned avocado subjects and a synopsis of their remarks will appear in a later issue. They were: Ernest Branton of the Cultivator staff, "Thirty Years Observation of Tropical Fruits"; D. W. Coolidge of Pasadena, "Seven Truths About Avocados," and R. W. Hodgson, Los Angeles County farm adviser, "Avocados as a Commercial Industry."

Throughout the day the secretary was busy registering new members. The greatest jollity prevailed, "and all went merry as a marriage bell." The place and date of the regular annual convention will be announced later, for with past and present growth of membership and number of diners the executive committee know not where to find suitable quarters for what is certain to be the largest assemblage of avocado advocates ever known.—E. B.

The California Tractor and Implement Association is planning a survey of conditions under which women work on California ranches to determine how power on the farm may help.

INTERNATIONAL FARM CONGRESS

The fifteenth annual session of the International Farm Congress will be held at Kansas City, Missouri, December 9-11. Among the subjects up for consideration are:

Marketing: Cooperative associations, crop pools, warehousing and determination of prices. Development of domestic and foreign markets. Relation of cooperative selling associations to consumers leagues.

Production: A continuation of the studies relative to adequate and better balanced production of all farm products and livestock.

Tariff Protection: Protection of American agriculture from competition of cheap labor and cheap land in other countries by the erection of an adequate tariff wall.

Transportation: More efficient railroad service. Development of the navigable waterways. Building and maintenance of roads.

Immigration: With relation to its effect upon farm labor, and the ownership and operation of farm lands.

Legislation: Proposed laws affecting agriculture.

Reclamation: Development of arid, semi-arid and swamp lands. Flood protection by drainage, and by storage of storm waters for irrigation.

Education and Farm Home Life: Reports, discussions and constructive action.

Farm Organizations: What they have accomplished and what they may be expected to accomplish.

RICE EXPERIMENT STATION

The rice grower is up against a serious situation. The season has not been as satisfactory as the former one and present indications are for exceptionally low prices with slow demand. This has caused many a grower to look at the serious side of the production and marketing situation, and some have maintained that the activities of the federal department through its station in Butte County have not been directed so as to secure their best interests. This has caused the members of the chamber of commerce at Chico to make investigation as to the situation and at a recent meeting of the board of directors the following resolution was passed:

"Whereas, reports are being given circulation in the press of this valley and state to the effect that the rice experiment station of the federal department of agriculture, located between Biggs and Richvale in Butte county, is failing to make itself useful to the rice growers of this valley, and, whereas, we believe that this station has performed its functions in a creditable manner; be it resolved, that the directors of the Chico chamber of commerce do hereby give public expression to their appreciation of the work of this station as a whole, knowing that the work of the station in the isolation, multiplication and distribution of rice varieties and determining the amount of water and proper seasonable distribution required for effective rice irrigation under Sacramento Valley conditions, in the demonstration of methods for the elimination of weeds, and the experimental demonstration of the unfitness of many types of rice for cultivation in this valley, have been of great value to the rice industry of the Sacramento valley and to the numerous individual rice growers who have seen fit to profit by this work."

UNIVERSITY TO HOLD FRUIT SHOW

The division of pomology of the University of California, in cooperation with the newly organized Pomology Round Table, an organization that existed at the university before the period of the war, has planned a fruit show that will be held at Berkeley on November 18, 19 and 20. The show will be educational for the students as well as for the many alumni that will be on the campus during the big game with Stanford on the 20th.

Growers are asked to send specimens of fruit to compete for awards. Since it is primarily an educational enterprise on the part of the students no cash awards can be offered. Ribbons, however, will be given to the first, second and third places of each variety and class. The fruit will be displayed with the variety, name and address of the grower attached. The judging will be done by a student committee.

SORGHUM SYRUP

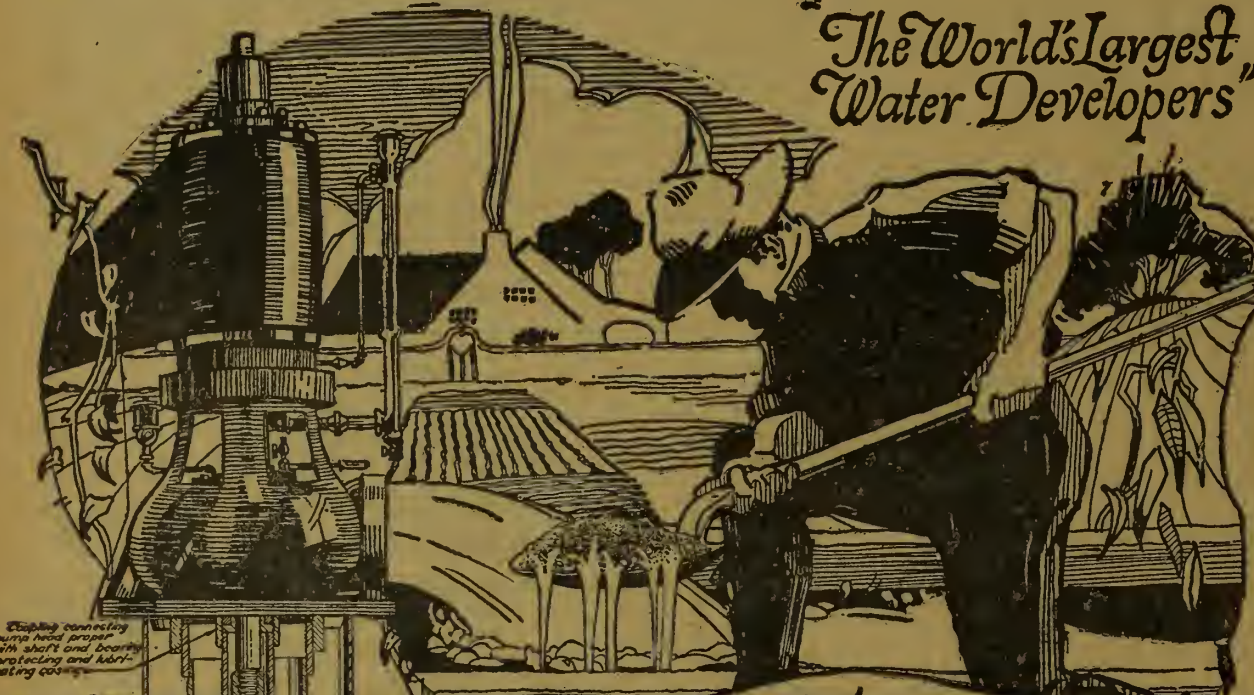
At a recent Fresno fair the Hughson Sorghum Syrup Company made demonstration to the satisfaction of many an inquirer as to the high quality of California "sorghum." This company is producing a very high quality of syrup and thinks it largely due to soil conditions of Stanislaus county. The Hughson mill has capacity of about 25,000 gallons.

PRUNING MATURE ORANGE TREES

(Continued from Page 505.)

and the yield drops off. They have passed their prime and are on the down grade. Perhaps reheading at this time will remedy this condition.

Trees propagated from fruit wood buds behave quite differently. They grow more slowly and consequently are stronger in structure. They are precocious, sometimes blooming and they frequently bear a very respectable crop. How long they will con-



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tinue to bear satisfactory crops of good fruit we do not know. We have not had enough experience as yet. There are trees of this sort 40 years old and better, still bearing fine crops and in good health.

There is some variation in the behavior of trees propagated from intermediate types of growth. Some consider the shade tree lemon as an intermediate type which has largely lost the bearing habit.

An extremely important fact related to the pruning is that trees composed of fruit wood require very much less pruning than trees propagated from vegetative sorts. It is my opinion that our citrus pruning problem will be largely solved when orchards are set out of trees propagated from the best selected fruit buds only and when all our present inferior and off-type trees have been top worked to better sorts.

The answer to the question of what kinds of growth one should use has been at least indicated in the discussion of the behavior of the different sorts. Fruit wood alone, where possible, and intermediate or vegetative sorts only where necessary to fill in openings or to fill out trees which have suffered accidents.

Practices to Avoid

Much has been said recently by Mr. Shamel and others regarding injury following severe pruning of citrus trees. I believe this statement should be qualified to read "normal citrus trees." Severe pruning of healthy normal citrus trees is clearly inadvisable for at least two reasons. In the first place, the bearing area is materially reduced and trees cannot reasonably be expected to carry normal crops until this deficiency has been made up. In the second place, the leaves are the laboratories where plant foods are elaborated and a material reduction in leaf area acts precisely like starvation. In fact, it is easier to starve a citrus tree to death through severe pruning than it is to accomplish the same result by withholding fertilizer.

There are marked differences in tissue efficiency in citrus trees. I have seen numerous cases where citrus trees received rather severe pruning and with most excellent results. The pruning was confined however to the removal of inefficient tissues, including vigorous sucker wood and old growth showing evidences of deterioration. Severe pruning of normal citrus trees however is to be avoided at all times.

Heading back or "stubbing" is a practice which should be discontinued as decidedly wasteful. It disturbs the balance of the tree with the result that its energies are expended in length growth of an undesirable nature and to an unnecessary degree. Where branches are too long they should be shortened in by cutting to well established laterals. This will not cause the tree to throw out a mass of wild sucker growth which must later be cut off. Heading back is a practice now being abandoned by deciduous fruit growers in favor of the new "long" system of pruning. In my opinion it is even worse with citrus than is the case with deciduous trees. Once adopted it must constantly be followed or the trees get out of condition. It is wasteful of the energies of the tree and expensive to keep up and should be abandoned.

Bearing in mind the fact that our orchards are made up of trees of many different strains, of trees propagated from different types of growth and carrying tissues of widely different efficiencies, it is obvious that any mechanical system of pruning cannot be satisfactory. And yet that is exactly what is being done universally by growers as well as by investigators. Until we have our orchards composed of uniform trees no such method can be expected to give results worth serious consideration. Each tree presents its own problem. Perhaps the first tree in the row chanced to be propagated from fruit wood from a high yielding strain. All the pruning it requires is a little thinning out to permit the entrance of light. The very next tree may be of a kind of growth that demands frequent and even vigorous pruning. To prune both moderately does neither justice. The one is thrown out of equilibrium and encouraged to sucker growth; the other is not curbed enough. It can thus be seen that citrus pruning comes down to an individual tree problem and requires more knowledge and skill than the pruning of perhaps any other fruit tree.

Citrus pruning in a nutshell consists in the use of trees propagated from the best selected buds only; second, the rigorous exclusion of all undesirable types of growth; and third, a judicious thinning of the outer canopy of foliage so as to encourage interior fruit bearing.

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California Cattlemen's Convention

By Ernest Brauntton

In connection with the Livestock Show at Exposition Park, Los Angeles, the California Cattlemen's Association held a get-together meeting on October 7, O. B. Fuller presiding. Sylvester L. Weaver, vice-president Los Angeles Chamber of Commerce welcomed the assembly on behalf of that organization and urged closer and more extensive organization among the varied cattle interests. In illustrating the strength of organization he told of a guard at an insane asylum building a roadway with a half dozen husky patients. Upon being asked if he was not afraid they would get together and overpower him, he replied: "Don't worry, if they could get together they wouldn't be here." He told of the confidence that comes with growing numbers: "A man who had a successful bank was asked how he attained success. Said he just hired a room, hung out

a big sign 'Bank' and waited. Person after person came and deposited a hundred or two at a time until finally, he said: "They showed such confidence in it that after a while I put in a couple of hundred myself."

Clinton E. Miller then welcomed the delegates on behalf of President Murphy and the directors of the Livestock Show. He was followed by Francis M. Cuttle of Riverside in an address on forestry and reforestation, urging cattlemen to aid in the work. He said we were growing but 12 cubic feet per acre of lumber per annum and consuming 42 cubic feet. Also that through wasteful methods we recovered but 320 board feet out of every 1,000 board feet cut down. He told how through deforestation floods in China had washed down mud from now bare hills until it covered hundreds of square miles of valuable valley lands, that now the Chinese are carrying back the soil to the hills,

building little dams across tiny ravines and planting trees in the deposited soil. This work is going on under supervision of Americans. Stockmen are vitally interested in conservation of water for government reports state it requires 15 to 30 tons of water to grow a pound of beef and that 430 tons of water are used in growing one ton of alfalfa.

H. A. Jastro of Bakersfield, introduced ("if introduction is necessary") as the father of the livestock industry in California, made a strong plea for closer cooperation and coordination on the part of all. He said Mr. Weaver had referred to the industry as the third in size in the state. Mr. Jastro said he presumed the two first were the auto and movie industries, as the livestock industry was of first importance, which statement elicited much laughter and applause. He further said he was very optimistic over the future of California for after traveling through the other states and over much of the world he was convinced that California was the only state that could build a fence around itself and "watch the rest of the world go by." Its soil produces everything

needed by man to eat, to wear, to use. He closed with a fervent appeal to all cattlemen to join the association.

Judge Canfield of Santa Barbara was the next speaker and outlined a plan for the establishment of county sales agencies, a plan warmly commended by the chairman and President Bixby. H. L. Musser and Professor P. B. Kennedy then gave very interesting talks on forage grasses, illustrated with living specimens of a dozen or more species, provided by Mr. Musser. We hope to give the subject matter of these talks in a separate article. The last on the program was a vigorous, stirring address by President Fred H. Bixby, who gets down to "grass roots" in all his talks. He said Melilotus alba, sweet clover or white melilot, is the best plant to bring back depleted soils of any he has grown. He has 1,200 acres of it. On sugar beet lands that had dropped to a yield of six tons to the acre after sweet clover had been grown and turned under, the yield jumped to 20 tons an acre. He said steers turned into it grew fat and the plants were so high the steers were lost in it, being more than six feet high. He advocated cutting it once a month, no matter what the growth made. He also asked for more dehorning, saying that of 14 carloads of steers shipped to Portland, the trip being supervised by himself, the cattle in cars where all were dehorned gained eight pounds each, while those horned, in cars by themselves, lost 56 pounds each.

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(4016)

PRICES NAMED ON LIMAS

The California Lima Bean Growers Association has named prices on the 1920 crop and issues the following statement:

The California Lima Bean Growers Association today commenced to quote its Seaside grade of new crop limas and baby limas for the ensuing 20 days' shipment, on the basis of 8 cents per pound f. o. b. for limas and 7½ cents per pound for baby limas, regular choice recleaned grade one-fourth cent lower.

These are very low prices and are away below the average, actual cost of production, particularly upon regular limas which are showing less than half a normal crop yield for the second succeeding season, due to shortage in rainfall the past year.

Because the wholesale grocery trade of the country, who are the chief distributors of beans and all other food products, have had their finances and credit standing placed under a severe strain through recent heavy declines in sugar, coffee and rice, also some lines of canned goods, they are much depressed, professing to believe that prices are lowering or about to lower upon all commodities, and they are refusing to buy any new goods, excepting in very small quantities. Even though their present state of mind may be unwarranted, the Lima Bean Growers Association recognizes that it must have the wholesale and jobbing outlet, and felt the naming of low first prices to be necessary to secure the interest and confidence of this trade in our commodity, and that this should insure a firm and reasonably advancing market. Such a consummation would please the trade, would give the consuming public good quality limas and baby limas cheap, and, to the extent of the advance, reduce the heavy loss to the growers.

The future of the lima bean market depends very largely upon whether the growers insist upon forcing the sale of their crops regardless of buying demand or of price obtainable when offered for sale.

BEETS AND TOMATOES

Throughout the Compton district of Los Angeles County the sugar beet crop is good and the harvest is in full swing. On the ranch of F. L. Walton two fields will yield 12 and 14 tons, to the acre. The owner plows the beets out and they are topped, piled and loaded by crews paid according to a printed scale based on the tonnage yield. Thus a 12 ton crop pays the harvesters \$1.30 a ton while a ten ton crop pays \$1.50. In the whole Compton district the yield is at least 25 per cent better than last year's, this district being always depended on to raise the average yield of beet lands.

Mr. Walton also has 35 acres in tomatoes that as a whole make a fine appearance. An unrecognized trouble

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is taking some of the largest and best plants in full bearing. Still, the estimated yield is ten tons to the acre throughout the field. The San Jose Canner will run about 11 tons, perhaps more, while the Stone will yield two to three tons less. A "Sacramento Canner" was introduced this year and was claimed to be superior to the San Jose but up to date gives no superior promise. These tomatoes were planted in May on high ridges eight feet apart and six feet apart on the ridges. The aim is to get the latter as high as possible, and they are at present 12 to 18 inches above the irrigation furrows. The land is strongly alkaline, soil very retentive of moisture and capillarity strong. So the vines must be kept as high as possible. For three years Mr. Walton has received \$20 a ton for his crop and this year is paying \$4 a ton for picking. Melilotus alba, the sweet clover, is one to two feet high on the better soil and one heavy crop has been cut and fed to stock. At the lower end of field, where the alkali content is greater, however, no Melilotus will grow. Another tomato grower in the district said his best crops came from land sown early to barley and the barley turned under when soft and succulent, about 18 inches high. Tomatoes planted soon after yielded an unusually large crop of fine fruits.

SUPERIOR QUALITIES OF PERUVIAN ALFALFA

Peruvian alfalfa has decided advantages over other varieties for those sections of the United States where it will grow, say forage experts of the United States department of agriculture. This should be taken as applying to the true or hairy Peruvian alfalfa and not to the so-called smooth leaved Peruvian. This latter name the specialists regard as unfortunate, as it leads to confusion in the seed trade. The "smooth Peruvian" is hardly distinguishable from common alfalfa.

The principal advantages of Peruvian as compared with common alfalfa are its more rapid growth, quick recovery after cutting, and ability to grow in cooler weather, thus furnishing more pasturage during the winter and in late fall and early spring.

The territory in which common alfalfa could be profitably replaced by Peruvian includes a comparatively narrow strip down the Pacific Coast and along the Mexican border and the Gulf, thence up the Atlantic Coast to the vicinity of Charleston, S. C. It cannot be grown to advantage where the winter temperature falls below ten degrees.

This alfalfa was first introduced into this country by the United States department of agriculture in 1899. The earliest introductions were not perpetuated, however, and it was not until 1903 that considerable efforts were made to produce a supply of seed.

WATER HOLES OF THE DESERT

The United States geological survey reports that the movement for the protection of prospectors and travelers on the arid desert plains of this country was begun many years ago by George W. Parsons, a prospector and desert expert of Los Angeles. In 1901 Mr. Parsons made a trip across the desert region of California with Professor W. L. Watts, state mineralogist, and on his return urged upon the Los Angeles chamber of commerce the necessity of placing guide posts and of developing water holes in the desert.

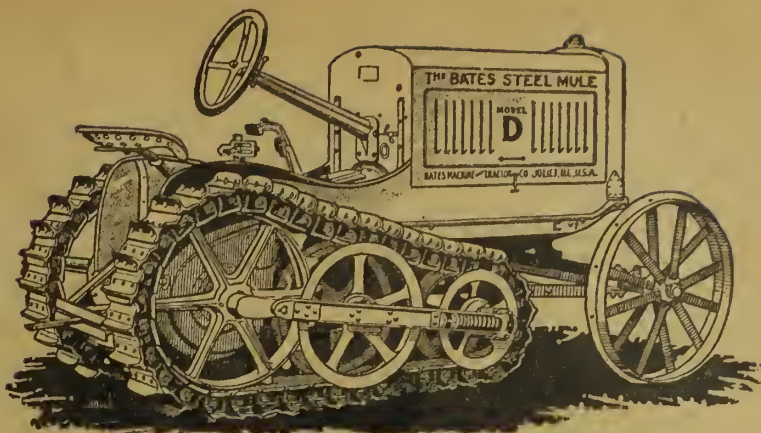
Mr. Parsons' work led to an appropriation by congress, as a result of which the United States geological survey, department of the interior, in cooperation with the department of engineering of California, surveyed the Southern California desert and has recently issued a report entitled "Routes to Desert Watering Places in the Salton Sea Region, California," by John S. Brown.

This report may be secured by writing for Water Supply Paper 490 of the U. S. Geological Survey, Washington, D. C.

AND CAME TO STAY

"I believe," said the cheery philosopher, "that for every single thing you give away two come back to you."

"That's my experience," agreed Phamley. "Last March I gave away my daughter and she and her husband came back in May."—Boston Transcript.



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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Cottony Cushion Scale

Am sending an insect which increases with great rapidity. What is it and how can I control it?—Subscriber, Stockton.

This is a healthy specimen of cottony cushion scale, rather we should say, these, for there have apparently been hundreds of them hatched in transit, as the box was filled with youngsters. This cottony cushion scale, Icerya purchasi, at one time threatened the destruction of California orchards. They were saved, however, by the introduction of a natural enemy, which at that time we called Vedalia cardinalis. We believe this name has been changed, but that is not so important as the fact that the beneficial insect succeeded in practically eradicating the white scale pest. We say practically, for the eradication was not complete and once in a great while a grower, as does our inquirer, finds an infestation. Would suggest that the subscriber who has this infestation write Harry S. Smith, California State Insectary, Department of Agriculture, Sacramento and explain the situation. We think that he may be able to supply a colony of the vedalia. However, if the infestation is not serious fumigation or even one of the similar emulsion sprays will be sufficient to control it.

Nurseryman's License

What is required under our present state laws of a man, not a registered nurseryman, to sell his production of plants, trees and vines?—Subscriber, Springfield.

The state law requires: "Any nursery, agent, jobber, person, firm or organization operating in the state of California, who ships, sells or handles nursery stock, trees, plantings, shrubs or vines which are for planting or propagation purposes, within the border of the state, shall register with the state commissioner of horticulture and shall pay the same \$1 for such registration for a period of one year."

Write to Geo. H. Hecke, Director of Agriculture, Sacramento, for full information.

Weakling Rabbits

What ails my little rabbits? After they are big enough to walk out of their nest I find them dead in the pens. We feed the does green and dry alfalfa and barley, give fresh water twice a day, keep hutches clean. We breed does when little ones are six weeks old.—Subscriber.

The rabbits in question are nothing but babies and must be so treated in care and feed. They cannot eat green feed freely or heavy, coarse, fibrous grains and hay and digest the food their stomachs are not yet fitted for. If mother doe has the right kind of nourishing food and plenty of nurse they will obtain their food at the proper place and not eat other foods till

nature has prepared them for it. Take doe and rub hand over nipples, eight in number, and examine veins or milk ducts that connect them and see if they are full and plump. Some does never make good mothers in this respect. Good mothers must be selected and are worth the highest prices. Would advise letting does rest two weeks between bearing of young and breeding; it pays in the long run. Feed your green in rack up high so small stock cannot reach it. Sprinkle fine leaves of dry alfalfa where young can get it (in clean place). Feed plenty of nourishing food to doe before kindling and after, and if parent stock is strong and healthy your troubles will soon cease in this respect.—W. D. W.

Bagging Grapes

The grower of a small quantity of table grapes recently wrote in, asking as to advisability of bagging grapes, this primarily to prevent depredations of birds.

Bagging of grapes is not practiced in California. Some growers near large Eastern markets have followed the practice of using ordinary Manila grocer's bags, tying over the bunches in order to protect from the birds and, in addition, to extend the season. Where grapes are easily grown and are cheap the practice would not pay, although the cost in old days is reported to be only about one cent per pound. The season with Catawbas was not extended at all while with Delaware grapes an extension of 40 days was possible. The coloring of some grapes is also increased, but with others, "especially Catawbas, was not so high."

Keeping Cut Dahlias

Please let me know how best to keep cut dahlias for five or six days.—Subscriber, Ceres.

There is no way of keeping dahlias for such time except where general conditions are favorable. They are best picked late at night or very early in the morning. Two methods of treatment are used, with about equal results. One is to scorch the ends over a fire and the other is to dip ends of stems in boiling water for just a few seconds. The latter seems to find most favor with growers. Plenty of fresh water and pure air are also essential. If used in the house place flowers in deep fresh water each night and keep outdoors or where air is pure and cool. There will always be found great variance in the keeping qualities of the different varieties.—E. B.

Non-ripening Himalayas

I have a number of Himalaya blackberry vines on which the fruits do not ripen, though a heavy crop now hangs on. The soil is sandy loam. We irrigate them two or three times a week. Would too much water prevent them from ripening?—Subscriber, Highlands.

Too much water would doubtless prove a deterrent to ripening or even proper development. The berry crop is a climax to the growing season; if soil is overcharged with water such climax may never come. Doubtless you have given the plants about four times as much water as they need, though there may be other contributing causes to non-ripening. Would water far less in future, but mulch with stable manure.—E. B.

Budding Stock

What roots are best for budding to peaches, apricots, almonds and walnuts, and when do you plant seeds? Can I hire a budder and successfully grow my own nursery stock?—Subscriber, Denair.

Peach stock will do for peaches, apricots, and almonds. It is better to secure the pits as soon as available, from canneries or other sources. Place them in shallow boxes of sand. In the spring, about March, pits will sprout. Run light furrows for nursery rows, place sprouted pits therein and cover about two inches deep. Walnuts should be grafted on the "Northern" Black, native to North Central California. You may hire a budder and successfully grow your own stock, but unless you thoroughly understand the work and need a large amount of trees we would advise buying them from a commercial grower.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Separate—Community Property

I purchased a farm, partly with money acquired before marriage and partly with funds accumulated after marriage. The deed is in my name. My wife refuses to live on the farm and says that she will sign the deed only in case I give her her part of the farm. The farm has doubled in value since purchase. Could I sell the farm without her signature, and if not, what would be her proportion?—Subscriber, Fallbrook.

The portion of the purchase money which was acquired by you prior to your marriage is, of course, separate property, and that acquired after marriage, community property. The farm being in your name there is a certain presumption that it is separate property. However that may be, even if it is community property, under the law as it stands at present, where the record title to the community property is held by the husband, he may convey it and such conveyance shall be presumed to be valid as to any purchaser or incumbrancer in good faith without knowledge of the marriage relation. In any event, such conveyance is conclusively presumed to be valid at the expiration of one year from the filing

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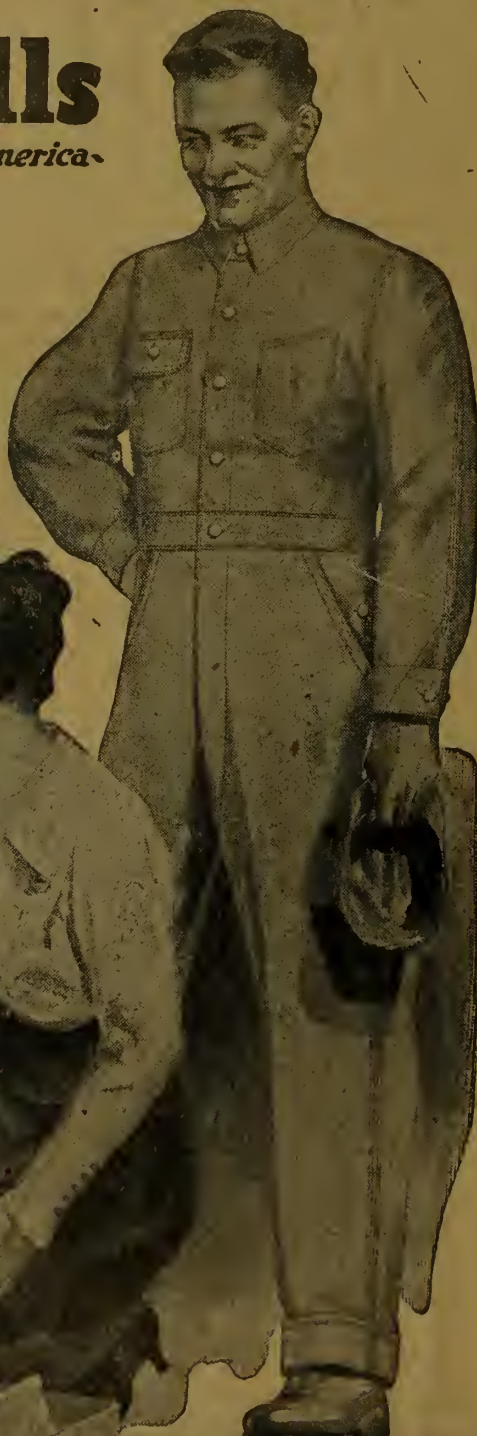
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of such instrument in the recorder's office. The interest of the wife in community property is a sort of inchoate interest, which is held in abeyance during the marriage relation and comes into effect rather upon the termination of the marriage relation than otherwise. It is exceedingly difficult to ascertain just what her interest would be, but if the deed is made at the present time it would doubtless be effective.

Undivided Estate

Three years ago a farm was left equally to four sisters. Two of the sisters desire to dispose of their interest. The other two refuse either to sell or buy and pay no attention to the requests of the two desiring to sell. Is there any way to force this sale?—Subscriber, Mountain View.

The four heirs are doubtless tenants in common of the property and each owns an undivided one-fourth interest in the whole property and action may be brought by one or more of the sisters for a partition of the property, accord-

ing to the respective rights of the persons interested and for the sale of such property or part thereof, if it appears that a partition cannot be made without great prejudice. In action of partition the court may order sale of the whole of the property, if it is found that for any reason it is not susceptible of equal division, and thereupon the proceeds of such sale may be divided among the parties according to their interests. Each of the sisters is the owner of an undivided interest, but the usual purchaser does not care to make such purchase and the undivided interest would doubtless be sold at a price far lower than its true value.

Veterinary

Sore on Shoulder

Horse has had sore on shoulder for five months which refuses to heal. What treatment should be given?—Subscriber, S. Yoshinaga.

It may be necessary to give your horse a rest for a time as shoulder galls of this kind which have been running for some time are often rather difficult to heal. One of the best treatments I would suggest is white lotion. This can be made up as follows: Lead acetate 1 ounce, zinc sulphate ½ ounce, water 1 quart. The affected parts should be bathed with this solution two or three times a day. Another remedy which often produces good results is made up of 1 part powdered lead acetate, 1 part powdered alum, and 2 parts powdered sulphur. This can be dusted on the affected parts after they have been thoroughly cleaned. The white lotion will probably give the better results and a rest should also be given in order to allow this sore to heal.—G. E. G.

Possibly Ringworm

Having read of others troubles that they have brought you I am writing to see if you cannot help me in mine. We have a pig about four months old that has a swelling on his left hip. It is a regular mushroom sort of a sore which sometimes is bloody and at other times has a crust on it. We thought at first that another pig had hit it or possibly it had been hurt on a nail, but we failed to find one around. Was told that it was a ringworm, but anything we do for it does not seem to help. Pig eats well and has grown right along, but has not made nearly the growth that the other one has on the same feed. We have fed them sour bran and barley with cooked vegetables with water and Lactein. Is the trouble in the feed, do you think? Have put iodine, coal oil and Spratt's Disinfectant on it, but nothing seems to help it at all. Do you think we should separate that one from the others? Could it be something that the other ones could catch? We are finding lots of good pointers in the Cultivator since we subscribed for it and hope you can tell us what to do for our pig.—Subscriber.

This trouble is rather difficult to diagnose. However, ringworm seems to be a possibility. Ringworm is contagious and the affected animal should be kept in a pen by itself so that it will not infect the other animals. This trouble is caused by a vegetable parasite which develops and grows rather rapidly. It is often found around the head and neck or around the back quarters, especially on the hips or hams. Perhaps the best treatment would be to first remove the crusts or scabs by washing with warm water in which an ounce of carbonate of potassium has been added for each quart of water. A brush can best be used for this purpose. The affected parts should then be treated as follows: Apply ointment of 2 teaspoons iodine mixed with 4 teaspoons vaseline. This should be rubbed on with a gloved hand, as human beings may be infected with this trouble. This can be repeated about every three days. Another treatment which is very effective is made up of carbolic acid 1 ounce and alcohol 2 ounces. This can be applied to the affected parts with a feather or small brush, usually once or twice being sufficient.—G. E. G.

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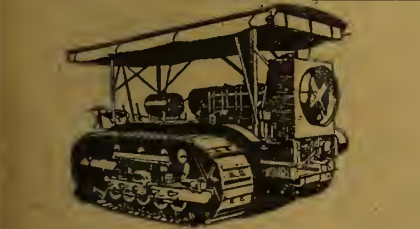
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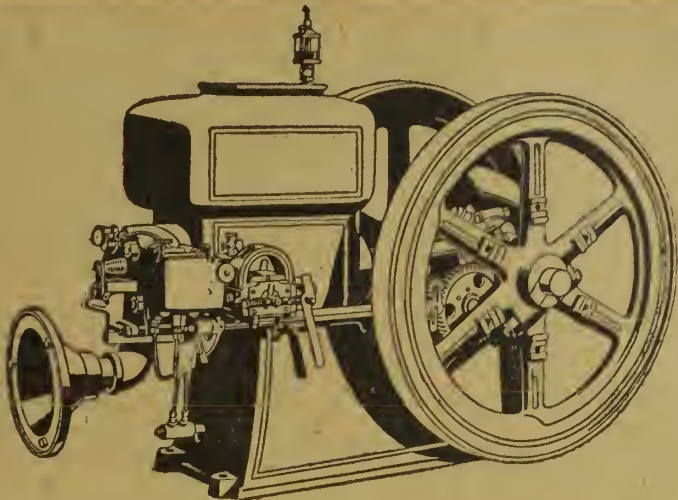
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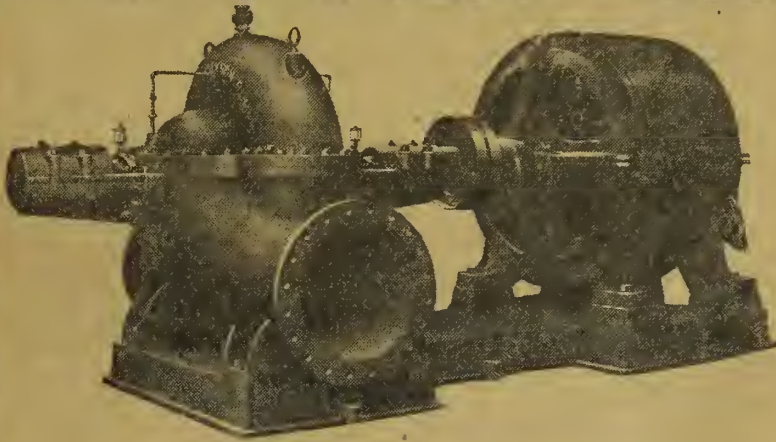
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THE LIVESTOCK SHOW IN THE SOUTH

(Continued from Page 503.)

the equal of any show ever held in the West. The Guernsey show was a close second in point of quality and the Jersey and Ayrshire breeders came in the order named. The dairy division was considerably stronger than that seen at the recent state fair. The dairy cow seems to fit into the scheme of things down South to better advantage than any other type of livestock, and with the many high class herds already established and the wide interest that is being manifested in Southern California, it can be predicted that that section will become one of the most important dairy centers of the United States.

The Los Angeles County farm bureau had an extensive exhibit detailing their various activities. The event was taken advantage of to put forward the work of the cow testing associations and, by means of selected animals, the records of which were known, the value of testing and the futility of selecting cows on any other basis than that established by the Babcock test and scales was demonstrated. Six cows were used and each day a demonstration was held by Assistant Farm Adviser Gordon, in which the crowds were asked to pick the high producing cows. The production records ranged from around 300 pounds of fat to above 700 pounds.

The California Dairy Council maintained a booth where the food value of dairy products was demonstrated and milk drinks dispensed.

Much of the success of the dairy cattle exhibit was due to the efficient work of G. W. Brown, the superintendent. The judging was done by Professor H. H. Kildee of the Iowa state agricultural college and Geo. E. Platt of Los Angeles.

THE HOLSTEIN SHOW

By C. L. Hughes

Records show that during the past four years Southern California breeders have bought over \$250,000 worth of registered Holsteins in public sales in California. Add to this the \$41,000 paid for King Korndyke Pontiac in the St. Paul sale by Anita M. Baldwin, and some of the large private transactions, and it is a safe estimate to place Southern California Holstein purchases at half a million dollars during the four years just passed.

The presence of this splendid Holstein blood in Southern herds has already made itself felt in the official production lists of California, and at the 1920 Los Angeles Livestock Show presented what was in many respects the greatest Holstein show yet seen in California.

In a show which abounded in features, the exhibit of James J. Jeffries, Burbank, commanded attention as one of outstanding merit. Reference to some of his individual entries will be made later on, but it may be noted here that the strength of the showing made by this herd is due to the get of Mr. Jeffries' great herd sire, King Segis Pontiac Jannek.

Another exhibit that deserves praise of high order was that of California George Jr. Republic, Chino, whose small herd furnished some of the highest award winners and were dangerous contenders in every class in which they showed.

Santa Anita Rancho, Santa Anita, showed much the same herd as was shown at Sacramento, winning a liberal number of top places and losing a number of hair line decisions for first place.

Burr Farm, Los Angeles, were strong contenders in every class and were liberal winners as the list of awards shows.

Rosamaines Rancho, A. J. Stalder, Riverside, showed a splendid herd that won a liberal number of places in the money.

Special mention should be made of the few head shown by E. R. Stalder, Nuevo, who has only a small herd, yet managed to reach top place and close to the top in several hotly contested classes.

F. F. Pellissier, Whittier, E. D. Barry Jr., Daggett, Los Angeles County Farm, Hondo, and Frank Reed Sanders, Mesa, Arizona, with only a few entries, added to the strength of the show and furnished some first prize winners.

It was strictly a Southern California show, one of which the entire state may well be proud, and there were a lot of really high class individuals in several of the big classes that couldn't find room to get inside the five money places.

The class of aged bulls brought out four entries, and the state fair grand champion was forced into second place by the splendid Dichter Spofford Korndyke Lad 5th, shown by California George Jr., Republic, who was later made senior and grand champion. This is a very flashy bull, just now entering mature form, and holds great promise for the next few years. The Stalder entry, King Pontiac Netherland Segis 3d, went to third place above Burr Farm's King Korndyke Pontiac 20th, who is getting rather too heavy service to keep in the pink of show condition.

In the two year old class A. J. Stalder scored a win with Rosamaines Pontiac Ormsby, a son of Sir Skylark Ormsby Hengerveld, a well turned bull that was later made reserve senior champion. Second place went to Barry's Sir Aaggie Hiske Walker, and third to Burr Farm's Sir Manuel Korndyke.

The senior yearling bull class brought out only two entries, the winner, however, being fully capable of successfully contending in a much larger company of good ones. This winner was King Hengerveld Alcartra Prilly, a son of Bridgford three times grand champion, King Segis Alcartra Prilly, shown by F. F. Pellissier, Whittier. This bull was later made reserve junior champion.

The junior yearlings were rather handily headed by the better balanced bull King Korndyke Pontiac Acme, more popularly known as the \$41,000 bull shown by Anita M. Baldwin. He was later made junior champion and reserve grand champion. Second place went to the Jeffries entry, K. S. P. J. Count, who was closely pressed for the place by Stalder's Sir Ormsby Skylark Rauwerd, with the Los Angeles County Farm entry in fourth place.

A good class of senior bull calves was finally headed by the Sanders entry, a son of it out of Orndyke Duchess Korndyke, with E. R. Stalder in second place with a son of the reserve senior champion. Third and fifth places went to the Santa Anita entries, with A. J. Stalder in fourth place.

An excellent class of junior bull calves uncovered an outstanding winner in the E. R. Stalder entry, a calf that had no advantage in age over his nearest rivals but had a big margin on size. This calf was also sired by the reserve senior champion. Jeffries' entries took second and third places handily, with the A. J. Stalder entry fourth, and California George Jr. Republic in fifth place with a good calf that carried a heavy age handicap.

The aged cow class was one of the best seen in California in recent years, and was won by the Burr Farm entry, Bess Creole Belle 3d, a cow that would show well in any company in her present condition. Two Jeffries cows took second and third places, with the Los Angeles County Farm entry in fourth place and another Burr Farm cow in fifth place.

Jim Jeffries started the real fireworks when his three year old won first place in a class of good ones, and from this time on the winnings of his entries were the feature of the show. Burr Farm scored second place over the George Junior Republic entry, with Santa Anita and Burr Farm in fourth and fifth places respectively.

The two year old class uncovered the grand champion in the Jeffries heifer, K. S. P. J. Pet Segis, one of the breed's great two year olds. It is worth remarking here that outside of her remarkable individuality she holds the California junior two year old record for milk production in one, seven, and 30 days, having milked as high as 99.6 pounds in one day with her first calf. She is on yearly test and eight months after calving is milking around 75 pounds per day. Second place went to the Santa Anita entry, with George Jr. Republic, A. J. Stalder and Burr Farm taking the other three moneys in the order named.

A strong class of senior yearlings produced the junior champion and reserve grand champion in the George Jr. Republic heifer Lady Dichter Ju-

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liana, a sweetly turned daughter of the grand champion bull. The E. R. Stalder entry won second position by a shade over the Jeffries entry, with a Burr Farm daughter of Sir Veeman Korndyke Pontiac in fourth place, and an A. J. Stalder entry fifth.

A corking good lot of junior yearlings lined up for award, and first place finally went to the Jeffries heifer, K. S. P. J. Pietertje Girl, over the three Santa Anita entries that won one, two, three at the state fair. Fifth place went to the Burr Farm entry.

The senior heifer calves made up the largest class of the show and there were no real tailenders. The blue went to the Santa Anita entry, a trim young daughter of Prince Walker Cornucopia, with Jeffries entries in second and fourth places, an A. J. Stalder entry in third place, and a Burr Farm entry fifth.

Jeffries scored first and fifth places in a flashy class of junior heifer calves, with Santa Anita, A. J. Stalder, and George, Jr., Republic dividing the other three moneys in the order named.

In the aged herd class George, Jr., Republic scored first with Santa Anita, Burr Farm and A. J. Stalder finishing in the order named.

The awards in the individual classes were a forerunner of the runaway the Jeffries entries were to make of the balance of the group classes, where they won first young herd, first calf herd, first get of sire, first, second and fourth produce of dam, and first for five cows in milk. All of the animals composing these groups, excepting the five cows in milk, were sired by King Segis Pontiac Jannek, and in the milk group one of the five was his grand champion daughter.

These group classes were among the very best ever shown at any show in California, the Santa Anita, Burr Farm, Stalder, and George Jr. Republic entries being of a quality that would do credit to any show.

Professor Kildee of Ames, Iowa, placed the awards in his usual thorough and businesslike manner to the general satisfaction of everyone. The awards:

Holstein Awards

Exhibitors—Anita M. Baldwin, Santa Anita; E. D. Barry, Daggett; Burr Farm, Los Angeles; George Junior Republic, Chino; James J. Jeffries, Burbank; Los Angeles County Farm, Hondo; F. F. Pellissier, Whittier; A. MacMinn, Litchfield, Arizona; C. W. Michael, Gardena; Sanders & Hudspeth, Phoenix, Arizona; Singleton & Haskell, Redlands; A. J. Stalder, Riverside; E. R. Stalder, Wineville.

Aged bull—1, George Jr., on Dichter Spofford Korndyke Lad 5th. 2, Baldwin on Merce Lad Korndyke Burke. 3, A. J. Stalder on King Pontiac Netherland Segis 3rd. 4, Burr Farm on King Korndyke Pontiac 2nd.

Two-year-old—1, A. J. Stalder on Rosamaines Pontiac Ormsby. 2, Barry on Sir Aaggie Hiske Walker. 3, Burr Farm on Sir Manuel Korndyke.

Senior yearling bull—1, Pellissier on King Hengerveld Alcartra Prilly. 2, Los Angeles County Farm on Colantha Aaggie Prince Pontiac.

Junior yearling bull—1, Baldwin on King Korndyke Pontiac Acme; 2, Jeffries on K. S. P. T. Count. 3, A. J. Stalder on Sir Ormsby Skylark Rauwerd. 4, Los Angeles County Farm on Perfection Homestead of Los Angeles County.

Senior bull calf—1, Saunders on It Orndyke Korndyke. 2, E. R. Stalder on Nuevo Pontiac Ormsby. 3, Baldwin on Prince Walker Cornucopia 15th. 4, A. J. Stalder on Rosamaines Pontiac Artis Spofford. 5, Baldwin on Unnamed.

Junior bull calf—1, E. R. Stalder on Nuevo Colantha Ormsby. 2, Jeffries on K. S. P. T. Show Boy. 3, Jeffries on Unnamed. 4, A. J. Stalder on Rosamaines Pontiac Tolia Estata. 5, George, Jr., on Republic Korndyke Pontiac.

Aged cow—1, Burr Farm on Bess Creole Belle 3rd. 2, Jeffries on Belle Canary Tyke Mercedes. 3, Jeffries on Gerben Canary Belle de Kol. 4, Los Angeles County Farm on Holland Mazda Colantha 2nd. 5, George, Jr., on Julianna Fobes of Rock.

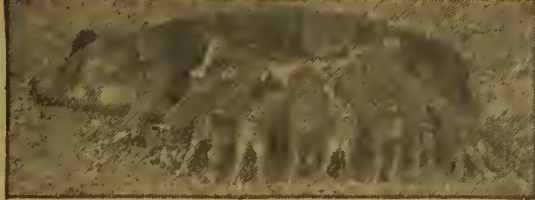
Three-year-old—1, Jeffries on Belle Type Nudine. 2, Burr Farm on La Conner Pontiac Albino Girl. 3, George, Jr., on Snowflake Julia Fobes of Rock. 4, Baldwin on Anokla de Kol Gelsche. 5, Burr on Gerben Fiebe Roderick.

Two-year-old—1, Jeffries on K. S. P. T. Pet Segis. 2, Baldwin on Blanche Nudine Clothilde Walker. 3, George, Jr., on Ida de Kol Pearl Lyons. 4, A. J. Stalder on Rosamaines Segis Ormsby. 5, Burr on Duchess Orndyke Saddle Vale.

Senior yearling heifer—1, George, Jr., on Lady Dichter Julianna. 2, E. R. Stalder on Aralia Rowena Princess. 3, Jeffries on K. S. P. T. Baron Lillabel Lillith. 4, Burr on Buddies Promise. 5, A. J. Stalder on Stanislaus Skylark Inka De Kol.

Junior yearling heifer—1, Jeffries on K. S. P. T. Pietertje Girl. 2, Baldwin on Burbank's Aaggie Lincoln. 3, Baldwin on Anokla Moorland Creamelle. 4, Baldwin on Burbank's Roderick Aralia de Kol. 5, Burr Farm on Burr Farm Julianna.

Senior heifer calf—1, Baldwin on Unnamed. 2, Jeffries on K. S. P. T. Florida Canary. 3, A. J. Stalder on Rosamaines Rowena Segis. 4, Jeffries on K. S. P. T.

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heads our select string of Duroc brood sows. At the recent Los Angeles County sales we personally selected two high class yearling sows (Pathfinder and Great Sensation blood direct), mated for September litters to the Winsor Ranch big-type boars. They find good company at our ranch.

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sired by Great Model, Great Sensation 3rd, Winsor's Giant Orion in Durocs, and Oakmere Price, by Black Price, Black Bob, Wonder Boy, and our Great Liberator Boy, in the Polands. Breeding stock priced low for early delivery. Special, 2 great Duroc boar prospects of January farrow, Tops from big litters, and 600 pound sows, fit for any herd, 1st choice \$60, 2nd choice \$45, crated, immuned and guaranteed. We refund money to any buyer without questions.

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Bred to farrow next two months. We are making an extremely low price on these to reduce our herd. At the price we won't keep them long. Write today. Quick, before they are all gone.

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Mammoth Sensation Segundus 370313

Was the largest junior Duroc boar pig in the Los Angeles Livestock Show; sire, Mammoth Sensation, Jr., dam a Pathfinder—Orion Cherry King sow. He was bred to be the big, well turned pig that he is. He was sold by A. J. Ludwig, Downey, to go to J. E. Thorp's Mossdale Herd at Lockford. For information on litter mates, address

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Grand Champion Holstein-Friesian

Bull of California for 1920

Dichter Spofford Korndyke Lad 5th



At the L. A. Livestock Show

We won fourteen prizes on an entry of twelve animals, including

- Senior and Grand Champion Bull.
- Junior and Reserve Grand Champion Heifer
- First Aged Herd.

The heifer awarded Junior and Reserve Grand Champion is a daughter of our Grand Champion Bull.

These winnings in the strongest classes of Holsteins ever shown in the West, under one of the greatest Holstein judges in the United States, Prof. H. H. Kildee.

California George Junior Republic

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The Blood That Breeds On

Our Winnings at the Los Angeles Livestock Show

On high record A. R. cows taken from our milking herd

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Combined with our winnings at the State Fair, where our young stock captured every first prize and two junior championships, together with the highest honor of all, *First Prize Herd Bred by Exhibitor*,

Proved Conclusively

that Hollow-Hill Guernseys combine the highest type with maximum production.

Bull calves of service age for sale.

Hollow-Hill Farm

B. W. Shaper, Mgr. COLTON, CAL.

Snowflake Mercedes. 5, Burr Farm on Burr Farm Baroness.

Junior heifer calf—1, Jeffries on K. S. P. T. Artis Lady. 2, Baldwin on Unnamed. 3, A. J. Stalder on Rosamaines Novena Ormsby. 4, George, Jr. on Lady Doris Juliana. 5, Jeffries on K. S. P. T. Pietertje Canary.

Senior champion bull—Dichter Spofford Korndyke Lad 5th; reserve, King Korndyke Pontiac Acme; reserve, King Hengerveld Alcartra Prilly.

Grand champion bull—Dichter Spofford Korndyke Lad 5th; reserve, King Korndyke Pontiac Acme.

Senior champion cow—R. S. P. T. Pet Segis; reserve, Bess Creole Belle 3rd.

Junior champion female—Lady Dichter Jullanna; reserve, K. S. P. T. Pietertje Girl.

Grand champion female—K. S. P. T. Pet Segis; reserve, Lady Dichter Jullanna.

Aged herd—1, George, Jr. 2, Baldwin. 3, Burr. 4, A. J. Stalder.

Young herd—1, Jeffries. 2, Baldwin. 3, George, Jr.

Calf herd—1, Jeffries. 2, Baldwin. 3, A. J. Stalder. 4, Burr.

Get of sire—1, Jeffries. 2, George, Jr. 3, A. J. Stalder. 4, Baldwin. 5, Burr.

Produce of dam—1, 2 and 4, Jeffries. 3, Burr.

Five cows in milk—1, Jeffries. 2, Baldwin. 3, Burr.

The Guernsey Show

The showing made by the Guernsey breeders can be rated as the strongest ever made in California. The four veteran exhibitors, W. H. Dupee, Santee; Brant Rancho, Owensmouth; Hollow-Hill Farm, Colton, and A. B. Humphrey, Escalon, crossed swords and met a new exhibitor—the Winsor Ranch, Bonita, whose entries were shown by Dupee, from whom they were secured.

From start to finish the show was one of class and balance, and was declared by Professor Kildee to have been one of the best he had judged. Several important changes were made from the placings at Sacramento.

Humphrey's Nobleman of Maple Hill, that was third among the two year olds at the state fair, won his class and was made senior champion over the Sacramento grand champion, Princess of Meadowbrook, the 12 year old state fair champion at Sacramento in 1919 and 1920, was left out of the money by the judge, who stated that while she was a real dairy cow she was not representative of the modern Guernsey type. The grand champion bull was uncovered in the senior yearling class and was the typy Veda's May King of Edgemoor, recently purchased from W. H. Dupee by the Winsor Ranch. Dupee's aged cow, Cheminante, first prize aged cow at the 1919 National, was senior and grand champion, and the same herd furnished both the junior champions. Hollow Hill Farm was a strong contender in all classes and won the junior yearling bill, reserve junior champion bull and the senior heifer calf. Brant took first with his aged herd and his five cows in milk and Dupee carried off the honors in the other groups.

The awards follow:

Guernseys

Exhibitors: W. H. Dupee, Santee; Elliott-Brant Rancho, Owensmouth; Hollow Hill Farm, Colton; A. B. Humphrey, Escalon.

Aged bull—1, Elliott-Brant on May King of Fern Ridge. 2, Humphrey on Escalon Challenger.

Two-year-old—1, Humphrey on Nobleman of Maple Hill. 2, Hollow Hill on Topper Langdon of Hollow Hill Farm.

Senior yearling bull—1, Dupee on Veda's May King of Edgemoor. 2, Dupee on Masterpiece of Edgemoor.

Junior yearling bull—1, Hollow Hill on Reuben King of H. H. F. 2, Dupee on Imperator of Edgemoor.

Senior bull calf—1, Hollow Hill on Carl E. King of H. H. F. 2, Humphrey on Escalon Advancer. 3, Elliott-Brant on Apollo of the Rancho. 4, Dupee on Checkmate of Edgemoor.

Junior bull calf—1, Humphrey on Escalon Rex. 2, Hollow Hill on Reuben Langdon of H. H. F. 3, Dupee on Man O'War of Edgemoor. 4, Elliott-Brant on Show Boy of the Rancho.

Aged cow—1, Dupee on Cheminante 11th. 2, Dupee on Florham Dame. 3, Hollow Hill on Imp. Dene Jewel. 4, Hollow Hill on Cherry 3rd of the Effards. 5, Hollow Hill on Imp. Brittleware Mistletoe.

Three-year-old—1, Elliott-Brant on Golden Glen Pansy. 2, Elliott-Brant on Jeannie of Green Lodge. 3, Elliott-Brant on Dorothea of Green Lodge. 4, Hollow Hill on Rosa King of H. H. F.

Two-year-old—1, Elliott-Brant on Little Queen of the Rancho. 2, Hollow Hill on 3, Elliott-Brant on Redwing of the Rancho. 4, Humphrey on Escalon Evangeline. 5, Hollow Hill on Princess Selma.

Yearling heifer—1, Dupee on Patroness of Edgemoor. 2, Hollow Hill on Della Langdon of H. H. F. 3, Dupee on Dolly Dolly of Edgemoor. 4, Elliott-Brant on Rosemary of the Rancho. 5, Humphrey on Escalon Lass.

Yearling heifer—1, Dupee on Bar Maid of Edgemoor. 2, Hollow Hill on Nesha E. King of H. H. F. 3, Hollow Hill on Rosie E. King of H. H. F. 4, Elliott-Brant on Melissa of the Rancho. 5, Humphrey on Escalon Rose.

Senior heifer calf—1, Hollow Hill on Caroline E. Langdon of H. H. F. 2, Dupee on Beautiful Rose of Edgemoor. 3, Dupee on Mary's May Rose of Edgemoor. 4, Elliott-Brant on Althea of the Rancho. 5, Elliott-Brant on Eleanor of the Rancho.

Junior heifer calf—1, Dupee on Minuet of Edgemoor. 2, Dupee on Vampire of Edgemoor. 3, Hollow Hill on Brittanla E. King of H. H. F. 4, Humphrey on Escalon Marjorie. 5, Elliott-Brant on Bertha of the Rancho.

Senior champion bull—Nobleman of Maple Hill; reserve, May King of Fern Ridge.

Junior champion bull—Veda's May King of Edgemoor; reserve, Carl E. King of H. H. F.

Senior champion cow—Cheminante 11th; reserve, Little Queen of the Rancho.

Junior champion female—Patroness of Edgemoor; reserve, Minuet of Edgemoor.

Grand champion bull—Veda's May King of Edgemoor; reserve, Nobleman of Maple Hill.

Aged herd—1, Elliott-Brant. 2, Hollow Hill. 3, Humphrey.

Young herd—1, Dupee. 2, Hollow Hill.

Calf herd—1, Dupee. 2, Hollow Hill. 3, Elliott-Brant.

Get of sire—1, Dupee. 2, Hollow Hill. 3, Dupee. 4, Hollow Hill. 5, Humphrey.

Produce of dam—1, Dupee. 2, Hollow Hill. 3, Humphrey. 4, Elliott-Brant. 5, Hollow Hill.

Five cows in milk—1, Elliott-Brant. 2, Hollow Hill.

The Jerseys

The exhibit of Jerseys was entirely creditable, in view of the fact that the show was held in the heart of a Black and White camp, and it was a stronger exhibit than last year's show. The show was largely local except for the strong Thorp herd from the North. The Jersey breed is entitled to more publicity in the South than it has been getting. Some of the best herds in the state are located near Los Angeles, and their owners are overlooking an opportunity when they fail to take advantage of the Los Angeles Livestock Show. All the way through the fight for the top ratings was between the Thorp and Brown entries, and Judge Platt managed to distribute the ribbons fairly equally.

Thorp developed more strength in the bull classes and landed the senior, junior and grand championships. Jolly Senator Raleigh, a veteran of the circuit and last year's champion, repeated. Biddy's King of Mossdale, junior champion at Sacramento, kept that position in the final awards.

Brown's Shy Lady Viola, the 1919 champion, was again out in front and was made senior and grand champion, and her stall mate, the lovely senior yearling, Financier's Ida, was the junior champion. Thorp took most of the group classes over Brown. West won the produce of dam class.

The awards follow:

Exhibitors: Grant A. Brown, El Monte; J. E. Hathaway, Norwalk; J. E. Thorp, Lockeford; F. M. West, Fullerton; Winsor Ranch, Bonita.

Aged bull—1, Thorp on Jolly Senator Raleigh. 2, Brown on Lady Shylock's Financier. 3, Hathaway on Raleigh's Delight.

Senior yearling bull—1, Thorp on Biddy's King of Mossdale. 2, Winsor on Beauty's White Sox.

Junior yearling bull—1, Brown on Financial Marjoram Count.

Senior bull calf—1, Thorp on Fairy Boy of Mossdale. 2, Brown on Financier's Gertie's Lad. 3, West on Maid's Noble Investment. 4, West on Jewel's Virgil.

Cow 4 years old or over—1, Brown on Shy Lady Viola. 2, Thorp on Salome of Mossdale. 3, Thorp on Nornie of Mossdale. 4, Thorp on Sonny St. Heller's Daughter.

Cow 3 years old and under 4—1, Brown on Financier's Viola Lass. 2, Thorp on Desert's Honeysuckle.

Heifer 2 years old and under 3—1, Thorp on Goldies Nehalem Cowslip. 2, West on Miss Silverside's Gipsy. 3, Brown on Financier's Daisy Witch. 4, Thorp on Bonnie of Mossdale 2nd. 5, Brown on Lena Oakhurst.

Senior yearling heifer—1, Brown on Financier's Ida. 2, West on Miss Silver-side's Nina. 3, Thorp on Violet of Mossdale. 4, West on Miss Raleigh's Barbara. 5, Thorp on Gladys of Mossdale.

Junior yearling heifer—1, Thorp on Queen Bess of Mossdale. 2, Brown on Shylock's Shy Joan. 3, Brown on Shylock's Elodine.

Senior heifer calf—1, Brown on Shylock's Countess. 2, Thorp on Sonny's Blossom of Mossdale. 3, Thorp on Jolly Emerilla of M. 4, Brown on Shylock's Nancy. 5, Thorp on Grlie of Mossdale.

Junior heifer calf—1, Brown on Shylock's Lottie. 2, West on Sunkist Lass Martha. 3, Thorp on Ramona of Mossdale.

Senior champion bull—Jolly Senator Raleigh.

Junior champion bull—Biddy's King of Mossdale; reserve, Financial Marjoram Count.

Senior champion cow—Shy Lady Viola; reserve, Goldies Nehalem Cowslip.

Junior champion heifer—Financier's Ida; reserve, Queen Bess of Mossdale.

Grand champion bull—Jolly Senator Raleigh; reserve, Biddy's King of Mossdale.

Grand champion cow or heifer—Shy Lady Viola; reserve, Financier's Ida.

Aged herd—1, Thorp. 2, Brown.

Young herd—1, Thorp. 2, Brown.

Calf herd—1, Thorp. 2, Brown.
Get of sire—1, Thorp. 2, Brown.
Produce of dam—1, West. 2, Thorp.
3, Brown. 4, Brown.
Five cows in milk—1, Brown. 2, Thorp.

The Ayrshires

But two herds of Ayrshires came before Judge Platt. The Steybrae herd from San Mateo divided honors with A. McMinn from Litchfield, Arizona. Steybrae had the grand champion cow in Willowmoor Vesta 4th and the reserve champion bull in Ayrmont. McMinn's Dairy King of Arizona was fortunate to be grand champion bull. The same herd had the reserve champion female with Annie Rooney.

THE BEEF CATTLE

By R. P. Royce

The exhibit of the beef breeds at Los Angeles was one of the strongest features of the show and the quality of the exhibits marks a distinct improvement over either of the former shows. Many of the leading herds of California were represented, and Nevada, Arizona, Washington and Colorado each sent one herd.

While Southern California breeders have not turned as readily to the improved breeds of beef cattle as they have the dairy breeds, the industry is an important one in that section of the state, and the more progressive cattlemen are concerning themselves with the possibilities for improving their range herds. In this movement the Los Angeles show is proving a potent factor. Shorthorns led in numbers but were closely pressed by Herefords. The Angus show was more important than the one staged at Sacramento.

The Shorthorns

This year's showing of the Reds, Whites and Roans was a distinct improvement over former shows at Los Angeles, and while a few exhibitors who entered the lists at Sacramento failed to be on hand, enough of the good herds were out to make a well balanced show of much class. Generally speaking, the ratings given the various classes met with approval notwithstanding the fact that Judge Frank W. Van Natta made radical changes from the placings at Sacramento. Nearly every herd showed improvement over their state fair form. The Colorado herd that had been entered failed to materialize.

One of the most important changes from previous ratings occurred in the two year old bull class. At Los Angeles the very tiny roan, Blackhawk Villager, was sent to the top and it must be said that he looked better in that position than in the third place he held at Sacramento. This bull lacks only a week of being a senior yearling, and though handicapped with an off date, it is quite certain that he is of championship caliber. Fronted with a head of character, of even top and sufficient depth, quite thick and extremely smooth and withal a style of his own, he downed all competition and went through to the purple. Dalmien Count, the thick Pacheco roan, occupied second, as before, over the state fair grand champion, the red Imp. Scottish Lord, shown by Glide. Bond was fourth with his red and white entry over an attractive prospect shown quite thin by Vaughn. The two senior yearlings were reversed from previous alignment. Baron Lancaster, shown by Dibblee, standing above Glide's Cheerful Count. Only two junior yearlings were out and the white Spicy Count, shown by Glide, kept his lead over the Pacheco entry.

The senior calves were a strong class and again the corking good thick white youngster, Pacheco Lad, 215th, led out in front and was later made junior champion and gave the senior champion a run for the top purple. Silver Cup, the white Dibblee calf, went up to second and King's Count, from the Glide herd, again separated him from his stall mate, but the order was reversed. Blackhawk was fifth with a white calf. The winner is a calf that combines fleshing, smoothness and quality and approved type. The four juniors yielded top honors to the thick, sappy, mossy coated roan youngster shown by Bond. This calf will bear watching and is a credit to his young fitter, the junior Bond. Not many better juniors have been seen out this way. Two Dibblee calves came next and the roan stepped above

—REGISTERED—FEDERAL TESTED—

150 HOLSTEINS 150

At Public Auction

State Fair Grounds, Sacramento, Cal.

November 10-11, 1920

Toyon Farm Association, with a total of 350 registered Holsteins on their farms, have decided to consolidate their Holsteins into one herd on the Brentwood Farm, and to conform with present accommodations on this farm, a reduction is necessary. This sale will be the means of making the reduction, and some of the most promising cows and heifers in the entire holdings will sell. The offering will include approximately

100 COWS
of Milking Age

30 HEIFERS
Bred and Open

25 BULLS
Mostly Ready for Service

The female offering contains the largest number of yearly record cows and heifers, daughters of yearly record dams, and females now on yearly test, that have yet appeared in a western sale. The breeding of the offering throughout is most substantial and popular, and the type of the offering is especially satisfactory. A general summary of some of the individuals and groups includes:

14 DAUGHTERS OF SIR BESSIE FOBES TRITOMIA, who is by Fobes Tritomia Mutual De Kol, and out of Jessie Fobes Bessie Homestead, 31.96 lbs. butter in 7 days as a 4-year-old, 932.74 lbs. butter in one year at mature age, and she topped the Detroit National Sale at \$4,600.00. These are out of dams with records up to over 27 lbs. butter in 7 days, and several out of dams now making good yearly records or with yearly records already completed.

2 DAUGHTERS OF SIR ORMSBY BURKE SEGIS, both with good records and out of good record dams.

A DAUGHTER of Johanna Colantha Champion, with 508.58 lbs. butter to her credit in 296 days as a 3-year-old.

A 24-POUND DAUGHTER of Sir Korndyke Hengerveld De Kol 31st, with 644.30 lbs. butter in one year as a 4-year-old.

A 23-POUND DAUGHTER of Sir Korndyke Hengerveld De Kol 11th, out of a 26.08-lb. 2-year-old daughter of a 31-lb cow.

A 23-POUND COW with 627.50 lbs. butter in one year, again on yearly test with 443.19 lbs. butter to her credit in 198 days.

A 21-POUND DAUGHTER of Sir Fayne Concordia, with 630.75 lbs. butter in one year as a 4-year-old, out of a daughter of King Segis Pontiac.

A 24-POUND GRANDDAUGHTER of Colantha Johanna Lad, with 628.60 lbs. butter in one year.

A 23-POUND granddaughter of King Walker, bred to Sir Aaggie Mead.

A 21-POUND 3-YEAR-OLD, with 760.01 lbs. butter in one year.

A 19-POUND 3-YEAR-OLD daughter of Sir Korndyke Pietertje Hartog, with 760 lbs. butter from over 18,000 lbs. milk in one year.

A 4-YEAR-OLD with 403.47 lbs. butter, to her credit in 232 days, her dam a 26-lb. cow.

A 19-POUND 4-YEAR-OLD with 358.74 lbs. butter to her credit in 184 days, her dam a 20-lb. 4-year-old granddaughter of Pontiac Korndyke.

A 19-POUND 3-YEAR-OLD with 318.26 lbs. butter to her credit in 137 days. By a son of Vickery Vale, 937.35 lbs. butter from 21,550.6 lbs. milk in one year.

A 23-POUND DAUGHTER of Colantha Johanna Champion out of a 20-lb. dam.

A 21-POUND granddaughter of Homestead Girl De Kol Sarcastic Lad, out of a 23-lb. dam.

A DAUGHTER of Sir Cascade Blossom Fayne, calving at 19 months has to her credit 389.92 lbs. butter in 244 days. Her dam now on yearly test with over 600 lbs. butter to her credit as a 3-year-old.

A GRANDDAUGHTER of Sir Korndyke Hengerveld De Kol, out of a dam that made 799.20 lbs. butter in one year as a 3-year-old.

A DAUGHTER of Sir Johanna Ruth Fayne, with 320.50 lbs. butter to her credit in 126 days, and bred to Sir Pietertje Ormsby Mercedes 43d.

A 2-YEAR-OLD daughter of Sir Johanna Ruth Fayne, bred to Sir Aaggie Mead.

9 DAUGHTERS OF MUTUAL FOBES LONGFIELD DE KOL, the famous bull whose long list of tested daughters includes several above 30 lbs. butter in 7 days. One of these is out of a 28-lb. dam, two out of 27-lb. dams, and the balance out of dams with records up to over 26 lbs. butter in 7 days.

4 DAUGHTERS OF SEGIS PONTIAC ACME, whose dam is an 885-lb. 4-year-old yearly record daughter of the former world's record cow Riverside Sadie De Kol Burke. All of these either have records or are now on yearly test, and all are out of good record dams.

A 2-YEAR-OLD daughter of Chima-cum Spring Farm King Pontiac, bred to Sir Aaggie Mead.

A 21-POUND 4-YEAR-OLD daughter of Sir Korndyke Ormsby De Kol, with 520.33 lbs. butter to her credit in 278 days.

A GRANDDAUGHTER of Sir Korndyke Hengerveld De Kol, out of a dam that made 704 lbs. butter in one year.

A DAUGHTER of North Star Happy Bonheur, out of a dam that made 799.20 lbs. butter in one year as a 3-year-old.

A 2-YEAR-OLD daughter of Sir Skylark Ormsby Hengerveld, now doing well on yearly test, and bred to Sir Pietertje Ormsby Canary.

A 643-POUND YEARLY RECORD COW, bred to Sir Pietertje Ormsby Canary.

A 17-POUND 2-YEAR-OLD granddaughter of Friend Hengerveld De Kol Butter Boy, out of a 644-lb. 4-year-old yearly record dam, second dam a 24-lb. 3-year-old, third dam a 22-lb. cow with 971.56 lbs. butter in one year.

DOZENS OF OTHERS with records up to over 24 lbs. butter in 7 days, many with yearly records or now on yearly test.

Females of Breeding Age in Calf to These Bulls:

SIR PIETERTJE ORMSBY MERCEDES 43D, whose sire is the world famous Sir Pietertje Ormsby Mercedes, and whose dam, Aaggie Wayne Peep, holds the world's record for butter production for five years, 4,992.03 lbs. from 110,706.5 lbs. milk.

SIR PIETERTJE ORMSBY CANARY, also by Sir Pietertje Ormsby Mercedes, and out of an 862.83-lb. record 3-year-old whose dam made 1,009.87 lbs. butter in one year.

SIR AAGGIE MEAD, by Sir Aaggie De Kol Acme, son of the world's record Aaggie Acme of Riverside 2nd, and out of the 1,215-lb. strictly official record cow Aralla De Kol Mead, her dam the 1,142-lb. former world's record cow Aralla De Kol.

HAZELWOOD DE KOL HENGERVERELD, by a proven grandson of Hengerveld De Kol and out of the 33.79-lb. cow Bonnie Lass Pauline, dam of Bonnie Ormsby Lass, Grand Champion cow at Panama-Pacific International Exposition.

NORTH STAR HAPPY BONHEUR, who is by Johanna Bonheur Champion a son of the famous show and breeding cow Johanna Bonheur, 890.84 lbs. butter in one year, and by a son of the former world's record cow Colantha 4th's Johanna, 1,247.83 lbs. butter in one year. His dam is a 30-lb. cow with 657.19 lbs. butter in 349 days, and she is by a son of the 313.30-lb. yearly record cow Lady Ormsby. This bull will be sold in the sale.

What Are These Things Worth to You as a Buyer?

This is the first entire offering of Federal tested cattle ever made in California.

No animal of breeding age, except fresh cows, will be offered unless believed to be safe in calf.

Note again the splendid breeding of the five bulls whose service these females carry. Their offspring

will carry splendid value anywhere.

There will not be more than three females in the sale with blemished udders.

Every animal positively guaranteed to be a breeder; every animal with individual Federal tuberculin test certificates, and sold subject to retest.

25 Bulls of Substantial Merit

While some of the bulls in this offering would not be out of place at the head of registered herds, yet it is hoped to make the offering of especial attraction to dairymen. A very large percentage of these bulls are ready for service, many of them out of dams now making splendid yearly records.

Plan now to attend this sale, for it is an offering of breeding animals combining qualities of type, production, breeding, and good health such as has seldom if ever been made in a sale of like magnitude in the west.

Owners: TOYON FARM ASSOCIATION

Farms: Los Altos, Brentwood

Office: Mills Building, San Francisco

For Catalog of Sale Address Management

Auctioneer:
Col. Ben A. Rhoades, Los Angeles
Col. John A. Davis, Manteca

Management
California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Manager, Sacramento, Cal.

his white mate that is a little off in his rear underpinning. The Pacheco calf was handicapped by his lack of size.

Three of the four aged cows stood as at Sacramento and the great Little Sweetheart added a seventh blue to her string and likewise a purple. It will be some time before we see a better Shorthorn matron, such cows as Little Sweetheart appearing only rarely. In connection with this remarkable champion, credit must be given William Robertson, who has developed her and carried her through with great skill. The second place quite properly went to the Pacheco entry over the red imported cow shown by Dibblee that in turn fitted in above the Bond cow because of her scale.

Judge Van Natta rather mused

things up for the "ringside talent" when he got to the strong class of two year olds. First place was generally conceded to the Sacramento winner, Ormondale Maid 2d, from the Bond herd. However, when the smoke cleared another half-sister to the champion, the red and white, Golden Beauty, out of the money at the state fair, was in the lead. This lady has done remarkably well since her first show. She is thicker throughout, especially in the crops, and has grown a heavy coat, but the aforementioned talent seemed to feel that she hardly had improved sufficiently to entitle her to honors. Bond was second over the light roan, King's Countess, shown by Glide. It was generally felt that the Countess heifer was accorded more correct consideration than was given her before. She is remarkably

deep and compact, very thick, and handles exceptionally well. Two short aged Blackhawk entries followed and the second prize heifer at Sacramento was left out of the money. The winning Pacheco entry was reserve senior champion.

The five senior yearlings had the lovely White Pacheco in the lead. She is attractive from most any standpoint and seems to have improved in handling since the earlier show. At that she had her hands full to take the measure of the nicely balanced roan, Village Rose. Glide also took the next place and Pacheco and Dibblee finished in the order named.

There were six junior yearlings lined up behind Pacheco Doris, but as a whole the class was not overly strong.

The senior calves furnished the junior champion, as at the state fair, in Sultan's Dale. This little lady is sweetly feminine, correct of lines and has just about all that one looks for in the way of character, fleshing and type. The next three places remained as formerly—Dibblee second and Glide third and fourth Blackhawk was fifth.

The junior babies were shifted considerably, the fourth calf at the state fair walking to the top and the Northern winner was left out of the money. This class made the fifth straight win for Pacheco and wound up an unusual record for that firm—five winning females, junior, reserve junior, reserve senior and reserve grand champion. Dibblee was in fourth with a beautiful roan that would undoubtedly have gone higher had she not been lame.

The group classes were a cleanup for the Pacheco Cattle Company. Starting with the winning of the aged herd, the Pacheco colors were out in front in each of the groups, including the get of sire. Such a record is most unusual and is cause for high congratulation to Messrs. Hawkins and Norman Hales. Glide was second in the aged group and also the young herd. Dibblee was second in the calf group. Blackhawk took the red in the get of sire and Bond was rated the same on his produce. The awards follow:

Shorthorn Awards

Exhibitors—William Bond, Newark; Thomas B. Dibblee Estate, Lompoc; Easton & Ward, Diablo; T. S. Glide, Davis; Pacheco Cattle Co., Hollister; Howard Vaughn, Sacramento.

Aged bull—1, Easton & Ward on Blackhawk Villager. 2, Pacheco on Dalmeny Count. 3, Glide on Scottish Lord. 4, Bond on Cumberland Gloster. 5, Vaughn on Right Sort, Jr.

Senior yearling bull—1, Dibblee on Baron Lancaster. 2, Glide on Cheerful Count.

Junior yearling bull—1, Glide on Spicy Count. 2, Pacheco on Amanda's Dale.

Senior bull calf—1, Pacheco on Pacheco Lad, 215. 2, Dibblee on Silver Cup. 3, Glide on King's Count. 4, Dibblee on Baronson. 5, Easton & Ward on Blackhawk White Beau.

Junior bull calf—1, Bond on Cumberland Goods. 2, Dibblee on Royal Clansman. 3, Dibblee on Sterling Lancaster. 4, Pacheco on Pearl's Pacheco.

Aged cow—1, Glide on Little Sweetheart. 2, Pacheco on Pacheco Lass, 80. 3, Dibblee on Bright Bess of Collynie. 4, Bond on Mayfield Victoria.

Two-year-old—1, Pacheco on Golden Beauty. 2, Bond on Ormondale Maid 2d. 3, Glide on King's Countess. 4, Easton & Ward on Blackhawk Roan Lady. 5, Easton & Ward on Blackhawk Queen.

Senior yearling heifer—1, Pacheco on White Pacheco. 2, Glide on Village Rose.

3, Glide on King's Countess 2nd. 4, Pacheco on Pacheco Bloom. 5, Dibblee on Orange Blossom A.

Junior yearling heifer—1, Pacheco on Pacheco Doris. 2, Bond on Cumberland Maid. 3, Glide on Village Girl. 4, Easton & Ward on Blackhawk Roan Lady 2nd. 5, Dibblee on Secret Clipper.

Senior heifer calf—1, Pacheco on Sultan's Dale. 2, Dibblee on Village Ruby. 3, Glide on Hillcrest Flower 3rd. 4, Easton & Ward on Blackhawk Victoria 2nd. 5, Dibblee on Village Fair Girl.

Junior heifer calf—1, Pacheco on Pacheco Doris 2nd. 2, Pacheco on Pacheco Lass, 213. 3, Dibblee on Lavender Queen 5th. 4, Dibblee on Princess Royal. 5, Easton & Ward on Blackhawk Victoria 3rd.

Senior champion bull—Blackhawk Villager.

Junior champion bull—Pacheco Lad 215. Reserve junior champion bull—Spicy Count.

Grand champion bull—Blackhawk Villager.

Senior champion cow—Little Sweetheart; reserve, Golden Beauty.

Junior champion female—Sultan's Dale; reserve, White Pacheco.

Grand champion female—Little Sweetheart; reserve, Sultan's Dale.

Aged herd—1, Pacheco. 2, Glide. 3, Bond.

Young herd—1, Pacheco. 2, Glide. 3, Dibblee.

Calf herd—1, Pacheco. 2, Dibblee. 3, Glide. 4, Dibblee.

Four animals, either sex—1, Pacheco, get of Pacheco Lad, 58. 2, Easton & Ward, get of Roan Radium. 3, Bond. 4, Glide.

Two animals, either sex—1, Pacheco, produce of Pacheco Lass, 65. 2, Bond. 3, Glide. 4, Glide.

The Herefords

The Hereford show at Los Angeles brought together several of the herds shown at Sacramento and was augmented by an Arizona herd and the Glendale polled cattle from Colorado.

The exhibit was quite the best ever made in the South and was almost the equal of that at the state fair.

Much interest was manifested around the Whiteface barns and it was rumored that several herds would likely be started during the coming year, thus demonstrating again the real value of a livestock show.

The classes were passed on by the widely known Hereford breeder and judge, Frank W. Van Natta, formerly of Indiana but now making his home near Los Angeles, to the universal approval of all.

Five aged bulls were forward with the top tie going to Paragon Dare, owned by Jacks. This bull was rather outstanding in his class on account of his scale and thickness. Bonnie Donald, from the Arizona herd, was properly second over a stable mate. A poll from Colorado with more condition and class was above a smooth headed bull shown by Emmons.

In the two year old class the Sacramento champion, Beau Blanchard 76th, from the Cazler herd, stood out in front by a wide margin. This bull continues to develop and showed improvement over his earlier form. His general type, strong front, level top, extreme thickness and massive quarters stamp him as one of the best young bulls of the West. It naturally followed that he was made senior and grand champion.

A son of Woodford had no trouble holding second by virtue of his thickness, quality and character over the polled junior Grove. Jacks had the only senior yearling.

Among the four junior yearlings, Judge Van Natta selected the Cazler entry, Nevada Lad 2d, that was more compact, over Jacks' Sacramento winner, that had the advantage of size.

Two polled calves from the Glendale herd followed. In the senior class for the first time during the show a polled entry took first rating. This calf, Bonnie Repeater, was later reserve junior champion. The other two places were filled by Jacks and Thomas and Hill.

The junior class, one of the strongest, and as at the state fair furnished the junior champion, but this time another son of Beau Blanchard was the winner. It will be recalled that the Briggs calf, Pilot, won at Sacramento and was declared to have been one of the most attractive calves seen.

The Los Angeles winner, owned by Cazler & Sons, always had the advantage of condition, and this time it won for him. The two are exceptionally good juniors. The next two places were taken by polled entries.

Only three aged cows answered the call and the top was easy with the polled cow, Pearl, grand champion at the 1919 state fair. The cow is probably the equal of any polled cow in the breed. She has scale, extreme thickness, levelness, quality and balance, and shows rare character. She had friends for leading honors. Second place fell to Miss Dale on account

O.U.R. Hampshire Swine Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

Blue Ribbon Hampshires



Our Grand Champion Hampshires have paved the way for breeding high-class Hampshires on the Pacific Coast. Blood lines of Lookout Cherokee, Director, Sioux Queen and Gen. Tipton dominate the herd.

Both Hampshires and Shorthorns in finest thrift. Call at ranch or address

F. A. Langdon, Mgr.
Perris, Cal.

F. C. Fairbanks Ranch Hampshires

The Grand Champion Boar HARVEY'S CHOICE 53147
at head of our great herd of brood sows.

HARVEY'S CHOICE

Grand Champion Boar

at Los Angeles 1919

18 High Class Brood Sows in herd—young stock for sale.

A. E. Harvey, Manager

LOOKOUT CHEROKEE

Grand Champion at Liberty Fair

SIOUX QUEEN

Grand Champion at P.P.I.E.

Redlands, Cal.

FOR SALE---Young Hampshire Boars

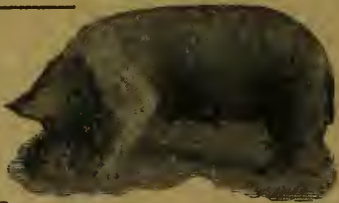
Pure Bred Stock. Ready for November service. Every one a choice individual. Some recent prize winners. Prices reasonable. Write immediately.

Oak Knoll Ranch

JUPITER FRUIT CO.

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Tarzana Purebred Hampshires



The Tarzana Ranch winning at the big Los Angeles Livestock Show were: Junior and grand champion boar (Tarzana Prince), senior and grand champion sow (Florence 2nd), reserve champion sow, junior champion sow; also 10 firsts, 6 seconds and 3 thirds, with lively competition throughout.

The Blood of Duke's Allen, Black Beauty, The Harvester Again, Young Senator

Just now is the opportune time for securing some of our good boars, sows and weanling pigs. Call at ranch or write NOW.

TARZANA RANCH

Ventura Blvd and Reseda Ave.

Van Nuys, Cal.

of her scale over the Cazier matron. Bocaldo Beauty, the state fair grand champion, led the five two year olds by a wide margin. This heifer is as thickly covered as one could wish and she handles exceptionally well. She lacks somewhat in width and depth of quarter, and for that reason she failed to make the final grade, being stopped at senior champion. Her stall mate, Georgia Princess 10th, was at home in second above a polled entry from Colorado that was quite thick.

The Briggs herd took first place over the three senior yearlings, none of which were outstanding.

Ruth Domino, the precocious junior yearling shown by Jacks, won her class hands down, and when later she was made grand champion over the two year old, because of her better balance, being particularly better in the quarters, it was felt that the decision was entirely correct. Jacks was second over Briggs and a poll crowded out a Cazier entry.

The Nevada herd furnished the winner in the next class with the growthy, thick Carnation 4th. A Colorado poll, quite thick, but light of quarter, was second, and the size of the Jacks heifer carried her above the one shown by Briggs. The top pair of juniors at Sacramento was reversed, Briggs taking a close decision over Jacks.

Jacks took the aged herd and Cazier and Sons were winners of the other groups. The awards follow:

Hereford Awards

Exhibitors—Babbitt & Cowden, Cashion, Arizona; William Briggs & Son, Dixon; John H. Cazier & Sons Co., Wells, Nevada; G. W. Emmons, Danville; Glendale Stock Farm, Aspen, Colo.; Romie C. Jacks, San Francisco; C. H. Hill, Jr., Los Angeles.

Aged bull—1, Jacks on Paragon Dare. 2, Babbitt & Cowden on Bonnie Donald. 3, Babbitt & Cowden on Beau Bonnie. 4, Glendale on Polled Gay Lad. 5, Emmons on Grove's Perfection.

Two-year-old—1, Cazier & Sons on Beau Blanchard 76th. 2, Jacks on Woodford 34th. 3, Emmons on Junior Grove. Senior yearling bull—1, Jacks on Beau Blanc Visage 9th.

Junior yearling bull—1, Cazier & Sons on Nevada Lad 72nd. 2, Jacks on Wyoming's Type. 3, Glendale on Woodford Grove. 4, Glendale on Briton Pride.

Senior bull calf—1, Glendale on Bonnie Repeater 2nd. 2, Jacks on Crimson 1st. 3, Hill on Beau Primrose.

Junior bull calf—1, Cazier & Sons on Blanchard 1st; 2, Briggs & Son on Piot. 3, Glendale on Glendale Echo. 4, Emmons on Diablo's Fearless.

Aged cow—1, Glendale on Pearl. 2, Briggs & Son on Miss Dale. 3, Jacks on Miss Debonair 4th.

Two-year-old—1, Jacks on Bocaldo Beauty. 2, Jacks on Gay Princess 10th. 3, Glendale on Woodford Lady P. 4, Briggs & Son on Beauty. 5, Emmons on Polled Laura.

Senior yearling heifer—1, Briggs & Son on Miss Era 14th. 2, Cazier & Sons on Carnation Girl 2nd. 3, Briggs & Son on Golden Lass 22nd.

Junior yearling heifer—1, Jacks on Ruth Domino. 2, Jacks on Belle Grove. 3, Briggs & Son on Lady Fairfax 9th. 4, Glendale on Miss Woodford. 5, Cazier & Sons on Circo 5th.

Senior heifer calf—1, Cazier & Sons on Carnation 4th. 2, Glendale on Lady Beatrice. 3, Jacks on Miss Domino 9th. 4, Briggs & Son on Dale's Victory. 5, Cazier & Sons on Nevada 5th.

Junior heifer calf—1, Briggs & Son on Beth. 2, Jacks on Dainty Dare. 3, Emmons on Amy Diablo. 4, Glendale on Belle Grove 5th. 5, Glendale on Maud Grove.

Senior champion bull—Beau Blanchard 76th; reserve, Paragon Duro.

Junior champion bull—Blanchard 1st; reserve, Bonnie Repeater 2nd.

Senior champion cow—Bocaldo Beauty; reserve, Pearl.

Junior champion heifer—Ruth Domino; reserve, Carnation 4th.

Grand champion bull—Beau Blanchard 76th; reserve, Blanchard 1st.

Grand champion cow or heifer—Ruth Domino; reserve, Bocaldo Beauty.

Aged herd—1, Jacks; 2, Glendale.

Young herd—1, Cazier; 2, Glendale.

Calf herd—1, Cazier; 2, Glendale.

Four animals of either sex—1, Cazier; 2, Glendale.

The Aberdeen Angus

The doddy showing in this state continues light in number but strong in quality. Once again the strong Congdon & Battles herd from North Yakima, Washington, was on hand with a full herd of high merit. Indeed, this herd is one of the leading herds of the breed in America. It is a long ship from the Northwest to Los Angeles, but it takes such enterprise to extend the breeds lines. The bread that Otto Battles is casting on California waters is certain to come back many fold. Great credit should be given the owners of the Lilac Ranch, Escondido, for bringing out a creditable exhibit.

All firsts, save that for senior heifer calves, went to the northern herd.

Brideman C. B. 5th was junior and grand champion bull and Pride C. B.

5th was senior and grand champion cow.

Fat Classes

The showing made in the fat classes was small, but in view of the fact that the finishing of top steer is a rather limited practice in this state, a stronger showing was hardly to be expected. But great shows very often have to start from small beginnings and it can be predicted that the time will come when the steer classes will become important features of California livestock shows. Certainly, we know that California can produce as choice steers as any state in the Union. It but remains to develop our fat classes.

Congdon and Battles, North Yakima, Washington, showed the only two year old, a pure bred Angus of fair type and finish.

In the yearling class a grade Hereford steer shown by the Kern County Land and Cattle Co., Bakersfield, was placed first. While lacking the qualities of a real show steer, he was thick, fairly smooth and better balanced than the black in second. Another Kern County product won third over a spayed Shorthorn heifer shown by Easton and Ward that was hardly as far along.

In the under year class the Washington entry, another pure bred Angus, was an easy winner over a White-face youngster shown by Emmons.

The winner of the last class was quite the class of the show and is a calf of considerable possibilities. Naturally he was the champion.

The awards follow:

Exhibitors: Congdon & Battles, Yakima, Wash.; Easton & Ward, Diablo; G. W. Emmons, Danville; Glendale Stock Farm, Aspen, Colo.; Kern County Land

Co., Bakersfield.

Steer, Spayed or Martin heifer, 2 years old and under 3—1, Congdon & Battles on Brideman C. B. 3rd.

Steer, Spayed or Martin heifer, year old and under 2—1, Kern County Land Co. on Hereford. 2, Congdon & Battles on Ericaman C. B. 2nd. 3, Kern County Land Co. on Hereford. 4, Easton & Ward on Blackhawk Violet Bud.

Steer, Spayed or Martin heifer under

Holstein Bull Calves For Sale Very Reasonable

Sired by Sir Veeman Korndyke Pontiac and out of yearly record cows. Write for prices, photo and pedigree.

BURR FARM

Box 220, Route 2. East 26th and Downey Road, Los Angeles

Home of King Korndyke Pontiac Mead

Bargains in Bull Calves from Tested Dams. Top Herd in U. S. for Fat Production of 100 cows.

LOS ANGELES COUNTY FARM HOLSTEINS

HONDO, CALIF

3 Miles South of Downey on Downey-Long Beach Blvd.

The Victory Herd of Holsteins

Holsteins of known value, headed by Sir Piche De Kol Sosis Pontiac, a son of King Sosis Pontiac Count, acknowledged one of the breed's greatest sires, and our junior herd sire, King Pontiac Alcarita Prilly, whose dam made 36.61 lbs. butter out of 805 lbs. milk in 7 days, now on yearly test. A young bull from this herd is a profitable investment.

HILLCREST FARM, H. E. Spires, Mgr., Caruthers, Cal.

Duroc-Jersey Swine of Highest Quality

Mammoth Dispersal Sale

Rosamaines Rancho, Riverside, Cal.

October 19-20-21, 1920



King Pontiac Netherland Segis 3rd



Sir Ormsby Skylark Rauwerd

Tuesday, October 19, at 9 a.m. sharp,
We Will Sell Rosamaines Rancho in Two Parcels

235 ACRES—On which the buildings are located, with improvements costing over \$200 per acre at normal costs; 100 acres finest pasture in California with abundant water and shade; 60 acres in fine stand of alfalfa; 40 acres in corn; motor equipped pumping plants; buildings all electric lighted and sewerage; a profit making property suitable for either beef or dairy cattle breeding.

TERMS ON THIS PARCEL: One-third cash, balance in six equal annual payments, interest at 7 per cent payable semi-annually, 2 per cent discount for cash on deferred payments. 397½ ACRES—Adjoining the parcel described above, all under cultivation, first class vineyard, orchard, or alfalfa land with abundant cheap water. This is an exceptional investment proposition taken either in connection with the balance of the Rancho or separately. TERMS ON THIS PARCEL: One-half cash, balance in four equal annual pay-

ments, seven per cent interest, payable semi-annually, two per cent discount for cash on deferred payments.

Following the sale of the Rancho we will sell

90 BIG RED GRADE SHORTHORN COWS, 3 TO 5 YEARS OLD, HEAVY WITH CALF.
50 REGISTERED DUROC-JERSEY HOGS
18 REGISTERED PERCHERON MARES & STALLIONS
1800 WHITE LEGHORN HENS AND PULLETS
A SMALL HERD OF GRADE DAIRY HEIFERS

THE IMPLEMENTS AND EQUIPMENT, including an almost new 12 foot McCormick Combined Harvester; a No. 50 Typhoon Ensilage cutter; a 20 h.p. motor; Osborn grain binder; beet drill; 8 farm wagons; plows, discs, rollers, mowing machines, rakes, harness, chains, lead bars, etc., and a complete acetylene lighting plant.

Wednesday and Thursday, October 20-21

We will disperse the entire high class herd of 150 REGISTERED HOLSTEINS

including the two great herd sires pictured above. This is one of the best collections yet offered in California, and just consider these facts: There are only 12 animals in the entire herd over 4 years old; there are only 7 animals in the entire herd over 6 years old; there are 105 descendants of the twice 34 lb. cow Gerben Abbekerk Maid in the sale; Gerben Abbekerk Maid herself, only nine years old, and seven of her two year old sisters by the same sire are in

the sale; it is the largest herd strong in Ormsby breeding ever offered in the west. Every animal is positively guaranteed to be a breeder; every animal, unless otherwise announced at sale, is tuberculin tested and sold subject to retest by the buyer.

Catalog Free on Request. Management
California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, California.



Part of Barns at Rosamaines Rancho. (Inset) The Bottom Land Pasture.

Rhoades & Rhoades

Expert Livestock Auctioneers

Col. Ben A. Rhoades

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Sales conducted in all parts of California
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We specialize in sales of

REG. DAIRY CATTLE

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We conduct sales of grade dairy cattle and general farm sales in all sections of California. Absolute satisfaction guaranteed. Forty years of successful sales in California and thousands of satisfied customers.

Write, phone or wire for dates and terms.

RHOADES & RHOADES

1501-3-5 So. Main St.

Los Angeles, Cal.

1 year—1, Congdon & Battles on Blackbirdman C. B. 14th. 2, Emmons on Diablo Boy.

Champion steer, Spayed or Martin heifer—1, Congdon & Battles on Blackbirdman C. B. 14th.

Steers or heifers, car lots—1, Kern County Land Co. on car lot. 2, Wilson & Co. on car lot. 3, Wilson & Co. on car lot.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

October 19-21, A. J. Stalder, Riverside.
October 28, George Kounias, Modesto.
November 10-11, Toyon Farms Association Sale at Sacramento.

December 1, H. E. Vogel, Fresno.

December 2, Consignment Sale, Tulare.

December 16-17, Consignment Sale, Sacramento.

Herefords

November 4, Pacific Coast Hereford Breeders' Association, Sacramento.

November 5, J. H. Cazier & Sons, Sacramento.

November 6, H. M. Barngrover, Sacramento.

November 18, Finnel Ranch Company, Sacramento.

Shorthorns

November 16, Caledonia Farms, West Sacramento.

Jerseys

October 22, Grant A. Brown, Clearwater.

Poland Chinas

October 20, Kings Co. Poland China Breeders Assoc. Hanford.

October 27, Newton & Christiansen, Pomona.

Duroc-Jerseys

October 27, E. Avery Newton, Lankershim.

The Tarzana Ranch Hampshires, Van Nuys, had some very handsome winnings to their credit at the Los Angeles Live Stock Show. Their aged herd is well known to the ringside talent of last year and was much admired again this year. The grand champion boar, Tarzana Prince, by Liberty, was one of the real surprises of the show. Aside from the winnings in breeding classes, Tarzana Ranch was awarded first, second and third on fat barrow, any age, and first on pen of three barrows.

Chas. H. Tyler, Charnock Ranch, Hemet, while on his way to Los Angeles Livestock Show, brought along 130 purebred Duroc pigs with which he topped the market at 18 cents.

T. C. Scheer, Bethany, Illinois, is making the western fair circuit with an exhibit of Tamworth swine.

Dr. A. E. Roome, Los Angeles, has purchased for his Arizona ranch the prize winning Berkshire boar pig, Star Oaks Masterpiece, bought from Gardner Blackman, Perris.

A. J. Ludwig, Downey, bought the fine sow, Cherry Pathfinder Maid, at \$500, in the Diamond Bar sale, from which he has raised one of the top-notch litters of the year, sired by Mammoth Sensation, Jr.

F. L. Hall, Perris, reports the sale of two fine Berkshire sows to B. W. Selby, Ventura; likewise young boar to Italian Vineyard Co., Guastli.

E. R. Stalder, Wineville, was elated at capturing, among other prizes, first on junior bull calf, Nuevo Colantha Ormsby, sired by his herd bull, Rosamaines Pontiac Ormsby.

Bert Wilkerson of the Falfadale Farm, Perris, reports the sale of five spring gilts, including the first, fourth and fifth prize winners, at Sacramento, and one senior gilt, junior champion, at Tulare, to C. C. Ellis, Exeter.

The Diamond Bar Ranch reports sale of Reformers Model, 2nd prize senior boar pig at Sacramento, and three full sows to F. Smith, Hollister; also one boar pig to Matthews and Stearns, Santa Ana.

Maxwell & Penfield, Lankershim, sold two gilts to Elwood Ranch, Santa Barbara, one gilt to H. Denny, and one gilt to W. Stewart, both of Lankershim.

J. P. Walker, Visalia, reports the recent sale of nine sows and gilts and a boar to Kreis S. Thorne, Three Rivers, at a very satisfactory figure. The ten head sold were all foundation stock as Mr. Thorne is establishing a herd of high quality.

The Grant A. Brown sale of 21 head of pure-bred Jerseys from his Eastmont herd at El Monte is to be held at Clearwater on October 22. In this offering are 18 head of females, the majority of which are bred to the herd bull Lady Shyllock's Financier. The young daughters of Lady Shyllock's Financier are reserved by Mr. Brown.

Two notably good herds of registered Poland Chinas are to furnish a lot of good things for the public sale ring at Pomona on October 27. The Newton and Christiansen herds are known as good producing herds. In either herd is a fine string of big type brood sows that raise their litters. They are of popular lines of breeding, and they win prizes in the show ring. The herd boars and young boars to be seen on sale day will please the eye, too. Sale will be held at the Lookingbill and Velzey Sales Yards, Pomona. Write for the catalog.

THOROUGHLY EQUIPPED MODERN RANCH

(Continued from Page 505.)

ready planned to make an early introduction of a car of bulls and cows which will prove blue ribbon winners.

It is probable that Mr. Lewis takes greatest pleasure in his stable of pure bred Arabians. These noble animals attracted a large share of attention at the recent Los Angeles Livestock Show.

We will not refer to the qualities of Diamond Bar stock as considered from a pure bred standpoint, for this is merely a look-in at the ranch by a layman who is interested in the general arrangement and up to date saving appliances.

R. K. Walker, in charge of the swine department, recently gave us opportunity to inspect the buildings, feed houses, private railway line and some of the rich acres of this ranch. Mr. Walker, a graduate of Ames, was owner and manager of Devore ranch and later with Winsor.

The railway line is not a plaything, but is a standard gauge railway switching off from the Salt Lake line, which passes directly through the place. This siding, or rather spur, affords opportunity for setting a carload or

DIAMOND BAR RANCH

GATEWAY

TO THE

Home of Prize Winners

Once more Diamond Bar Durocs have proved their supremacy by winning two-thirds of all blue ribbons at the State Fair and Los Angeles Livestock Show, as well as many championships.

California State Fair

Diamond Bar Won

10 out of the 15 first prize ribbons	Reserve Junior Champion Boar
Grand Champion Sow	1st prize futurity litter on pigs
Senior Champion Sow	sired by Ace of Pathfinders
Reserve Grand Champion Sow	

Los Angeles Livestock Show

Diamond Bar Won

10 out of the 15 first prize ribbons	Reserve Junior Champion Sow
Grand Champion Sow	1st Futurity Boar
Senior Champion Sow	1st Futurity Sow
Reserve Grand Champion Sow	1st Futurity Litter
Reserve Senior Champion Sow	

The winnings of Ace of Pathfinders and his pigs stamp him as the greatest show and breeding boar in the west.



DIAMOND BAR RANCH

F. E. Lewis, Owner and Manager
SPADRA

Los Angeles County

R. K. Walker, Hog Department
California

JACK KLEIN JOINS CULTIVATOR STAFF

The publishers of the California Cultivator are pleased to announce that arrangements have been completed whereby Jack Klein joins the staff in the capacity of livestock field representative. Mr. Klein's services will be available to all our readers and to the livestock breeders of Southern California and the Coast counties.

During the past year Mr. Klein has earned for himself the good will and respect of the livestock fraternity of this state and it is felt that he is in a position to greatly widen the service that this paper seeks to give our readers and advertisers. We further believe that the California Cultivator is now able to offer the livestock industry of this state a type of service unequalled by any paper west of the Cornbelt.

J. P. Bennett will continue the work in the territory north of the Tehachapi and will be able to accord that territory more intensive service.

Our readers are urged to avail themselves of the services of each of these members of the staff whenever the occasion arises.

At this time the publishers desire to thank the readers for their fine support which has made it possible for this publication to enjoy the distinction of being rated the leading agricultural weekly of California.—R. P. Royce.

drawn by gravity to the mill where it is ground, mixed and loaded into a tank on a flat car as shown in one of the illustrations earlier in this article. The method of feeding from this tank is shown better from that photograph than can be described.

Another type of dummy engine runs through the center of the farrowing barns. This is operated by gas en-



More Champions

Upper: Grand champion Poland China boar, Buster Brown, owned by Eastman. Center: Grand champion Poland China sow, Miss Big Price, owned by Santa Anita. Bottom: Grand champion Duroc-Jersey boar, Great Orion Sensation, Jr., owned by Falfadale.

gine and is for the purpose of removing manure and refuse. It is set to run at a very low speed and a man in the pens on either side cleans and throws into the car the manure from each pen without stopping the "train." It takes but a few minutes to clean out the entire barn, perhaps a quarter of a mile long.

Nor is the whole effort of the ranch to secure comfort to the livestock. The quarters prepared for the men show that Mr. Lewis and his secretary, C. H. Hopkins, have planned a very complete series of rooms with reading room, baths and all modern home appliances.

There are few ranches in California which will be able to follow details as planned by Mr. Lewis, but it is a most interesting place to visit and one where the latchstring is always out at the big Diamond Bar sign on the Valley Boulevard from Los Angeles to Pomona.

SHEEP EMBARGO

A temporary embargo has been placed on all sheep located between Geyserville, Cloverdale, Hopland and intermediate points, making it now necessary for shippers to obtain a written permit from Charles Cooley, local inspector at Cloverdale, or other authorized representative of the state department of agriculture, before sheep will be accepted by the railroad company for feeding, slaughter, or other purposes. This action was taken to aid in the control of scabies infection.

LAUGH ON THE DOCTOR

An Illinois physician who had motored into an Ohio town found a porter standing back of the machine laughing.

"What's the joke?" inquired the owner.

"Nuthin', boss; but you're a doctor, ain't you?"

"Yes."

"I thought so when I saw that red cross on the front of your car. But if I owned the car I think I'd put the sign on the back."

The doctor walked around to the rear and looked at his license tag. It read: "46,000 Ill."—Rehoboth Sunday Herald.

Blackhawk Villager

Grand Champion Shorthorn Bull
Los Angeles Livestock Show



It is a distinct pleasure to announce the above award and to record the fact that our entire show herd represents the get of our herd bull.

ROAN RADIUM

(A richly bred son of the noted Radium)

This is our first year as exhibitors of Shorthorns, and we hope to achieve the same recognition everywhere accorded.

Blackhawk Shire Horses

Which have come to be recognized as the best in the West. During the past few years our horses have won more championships than those of any Western breeder.

If interested in Shorthorns or Shires we will be glad to have you visit our ranch.

Blackhawk Ranch

EASTON & WARD

Diablo

Cal.

Breeders! Range Men!

Bear in Mind

Caledonia Farms' Shorthorn Sale

West Sacramento, Cal.

Friday, November 12

50 High Class Females

10 Top Bulls

A Real Business Opportunity

There is no better opportunity facing the livestock industry of California than the production of registered Shorthorns. The market is here. No section can produce better cattle. The business is profitable because it is economically sound—and furthermore, the business is a pleasant one.

The Caledonia Farms sale offers a rare chance to make selections from what is generally considered to be one of the top collections of the breed.

Details of the offering will appear next week.

EVERY ANIMAL IS GUARANTEED TO BE A BREEDER
EVERY ANIMAL SELLS TUBERCULIN TESTED

Write for the catalog

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif.
Auctioneer—Col. Ben A. Rhoades, Los Angeles.

Ormondale Ranch
Shorthorns

Redwood City, Cal.

HERD SIRES

Boquan Guinea Stamp, the great imported Young Broadhook bull. Golden Goods Jr., sire of LITTLE SWEETHEART, Grand Champion International Show, Chicago, 1919.

Bulls and helpers for sale.

Duroc-Jersey hogs for sale.

James McDonnell, Supt.

Shire Horses FOR SIZE BONE and QUALITY

More is required of horses than ever before hence the need of more size, weight and power. Large geldings never were higher. Shire geldings usually top the market. Use Shires to raise larger and better horses.

For information on Shires write, W. G. Lynch, Secretary American Shire Horse Association, Tonawanda, Illinois.

Use a Shorthorn Bull

You want the extra 50 to 200 lbs. weight and you will get it by using a Shorthorn bull. The Shorthorn steer finishes readily for the market at any age from calfhood. He keeps growing without losing his finish. The quiet temperament of the Shorthorn is a valuable asset.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION
13 Dexter Park Ave. Chicago, Ill.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

DISPERSAL SALE REGISTERED 67 HOLSTEINS 67



Kounias Registered Stock Farms

On Waterford Road, three miles east of

Modesto, Cal.

Thursday, October 28 at 10 A.M.

This is a complete dispersal of one of the largest and best producing herds in the San Joaquin Valley, mostly young animals that have long years of usefulness before them.

Some of the Females

21 DAUGHTERS OF KING KORNDYKE HENGERSVELD ORMSBY 7TH, who is by a son of Pieterje Maid Ormsby, and is half brother to Ormsby Korndyke Lad, the greatest living sire of 1,000-lb. yearly record daughters. He was Grand Champion at Modesto Live Stock Show 1917.

9 DAUGHTERS OF KING KORNDYKE AAGGIE FAYNE, whose dam is a 33-lb. daughter of King Hengerveld Aaggie Fayne.

SIX DAUGHTERS of a 26-lb. cow that made 723.31 lbs. butter from 17,764.3 lbs. milk in one year. Five of them have A. R. O. records.

FOUR DAUGHTERS of a 20-lb. cow that made 615.02 lbs. butter from 16,764.4 lbs. milk in 327 days.

A 29.67-POUND 4-YEAR-OLD daughter of a 26-lb. cow that made 723.31 lbs. butter from 17,764.3 lbs. milk in one year.

A 20-POUND 4-YEAR-OLD, by a 33-lb. grandson of King Hengerveld, and out of a 31-lb. daughter of Sir Skylark Ormsby Hengerveld that made 1,127.27 lbs. butter in one year.

A 22-POUND GRANDDAUGHTER OF ARLA DE KOL, her two daughters and one son.

MANY COWS AND HEIFERS with official records up to over 20 lbs. butter in 7 days, and a large number of them out of good record dams.

REMEMBER—That about 30 of the cows and heifers are bred to KING KORNDYKE HENGERSVELD ORMSBY 7TH, or to KING KORNDYKE AAGGIE FAYNE.

A Considerable Number of Fresh Cows and Heavy Springers!

DAIRYMEN—Practically all of these young bulls carry a combination of Ormsby breeding and the blood that produced De Kol of Valley Mead, foundation cow of one of the best Morris families. Both of these lines of breeding are famous, not only for large production but good type as well.

Every animal positively guaranteed to be a breeder; every animal over six months old tuberculin tested and sold subject to retest by the buyer, except as announced at sale.

Catalog free on request to management
Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif
Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. J. H. Corley, Modesto

High Class Bulls in the Offering

A few of the bulls in this sale should find places at the head of registered herds, and every one of the balance can conservatively be rated as the good sort to head grade herds. Practically every bull is out of a good record dam, the young ones are growthy, of good type, and in good thrifty condition. Here is part of the list:

KING KORNDYKE AAGGIE FAYNE, the herd sire. Three years old, a good individual, almost white in color, out of a 33-lb. daughter of King Hengerveld Aaggie Fayne that milked 597 lbs. in 7 days. See his calves in the sale.

A SON OF JUDGE SEGIS, the famous son of King Segis heading the well known herd at Hollywood Farm, in Washington. His dam a 20-lb. 3-year-old daughter of a 31-lb. daughter of Sir Skylark Ormsby Hengerveld that made 1,127.27 lbs. butter in one year.

A SON OF KING KORNDYKE HENGERSVELD ORMSBY 7TH out of a 29.67-lb. 4-year-old whose 26-lb. dam made 723.31 lbs. butter in one year from 17,764.3 lbs. milk. He is a fine individual.

A SON OF KING KORNDYKE HENGERSVELD ORMSBY 7TH out of a dam that made 26.06 lbs. butter from 563.4 lbs. milk in 7 days.

A SON OF KING KORNDYKE HENGERSVELD ORMSBY 7TH out of a 22.51-lb. dam.

A SON OF KING KORNDYKE HENGERSVELD ORMSBY 7TH out of a 21.32-lb. 4-year-old daughter of a 22.51-lb. cow.

A SON OF KING KORNDYKE HENGERSVELD ORMSBY 7TH out of a 21.31-lb. 3-year-old daughter of a 20-lb. cow.

SONS OF KING KORNDYKE AAGGIE FAYNE out of dams with records up to over 18 lbs as 2-year-olds.

The Swine Show

By J. P. Bennett

The swine show at Los Angeles this year was in some respects the equal of the showing made at the state fair. While the number of hogs shown did not compare with Sacramento, the competition in many of the classes was keener and a higher class of animals shown.

The Durocs led in point of numbers, having a total of 45 per cent of all animals on the grounds. The Berkshires were second and the Poland Chinas third.

For a swine show of this size and character there are several improvements necessary for the convenience of the exhibitors. First, there is a real need of more adequate showing facilities. This year there were several classes, especially when the Durocs were being shown, where the judging arena was so crowded that it was difficult for both the judge and exhibitors to work under such conditions. However, all those interested displayed real sportsmanship and the show not only went very smoothly but was marked down as one of the most successful ones of the season.

Professor H. H. Kildee, Ames, Iowa, judged the Durocs; J. I. Thompson, Davis, judged the Polands and Berkshires, and C. R. Doty of Los Angeles, the Hampshires, Tamworths and other breeds. Each man rendered very efficient service and the awards were entirely satisfactory.

The Duroc Show

The Duroc breeders of Southern California seemed to almost have a monopoly of the exhibits at Los Angeles, as 45 per cent of the entire swine show was from this breed. The Duroc judging attracted a great deal of attention and the spectators who were fortunate enough to find standing room next to the arena were rewarded by one of the best exhibits of any breed of livestock on the grounds.

The large classes shown and the rather limited amount of space in the judging arena made it difficult for the spectator to see much of the show.

The senior and grand champion boar, Great Orion Sensation Jr., shown by Falfadale Farm, Perris, was the reserve senior champion at Sacramento. This boar is an extra large, smooth, mellow senior yearling and the favorite with the crowd for the highest honors. The reserve senior went to the Brant Rancho on the first prize aged boar, May Rose King. Charnock Cherry Friend, a typy junior yearling, won first for Charnock Ranch in that class.

Royal I Am, an outstanding senior boar pig, Cherry Pathfinder, shown by Lancaster, won first in class and junior champion with the junior boar pig, Cherry Pathfinder, shown by Diamond Bar Ranch, as junior reserve champion.

Among the aged sows the great sow, Queen of Pathfinders, added another grand champion ribbon to her long string of winnings, with the good senior yearling, Pathfinder Very Best, also exhibited by Diamond Bar, as reserve senior. Diamond Bar also won first in the junior yearling class with Orion Sensation Lady.

Brant Rancho had the junior champion on the good senior sow May Rose Tattletale, with the junior sow pig, Cherry Duchess 2d, shown by Diamond Bar, as junior reserve.

Prof. H. H. Kildee, Ames, Iowa, placed the awards as follows:
(Awards on Page 529.)

The Berkshire Show

The showing of Berkshire hogs at Los Angeles this year was one of the best made at any of the fairs this season. The competition was much keener than at the state fair and the exhibits as a whole were in much better bloom and condition. This latter feature caused the reversal of many placings made earlier in the season.

The Italian Vineyard Co., Guasti, showed the greatest improvement, especially in the sow classes. A. B. Humphrey, Escalon, was the heaviest winner, having both senior and junior champion boars and winning grand champion on Escalon Big Joe, by Big Leader. The reserve grand champion ribbon was awarded to J. Frances

O'Connor, Santa Rosa, on Enhancer, and was the favorite with some for the purple ribbon.

The grand champion sow, Grape Wild Rose 6th, shown by Humphrey, was one of the best Berkshire sows ever driven into any show ring and was a great credit to the breed.

The junior champion sow, Real Type's Belle 4th, shown by Italian Vineyard Co., was a very typy senior sow pig.

Taken as a whole, the Berkshire show was one of the classiest on the grounds, and for quality and uniformity of all animals shown, was hard to beat.

J. I. Thompson, Davis, tied the ribbons in a very satisfactory manner.

Exhibitors: Gardiner Blackman, Perris; J. C. Craig, Los Angeles; F. L. Hall, Perris; A. B. Humphrey, Escalon; Inglewood Union High School, Inglewood; Italian Vineyard Co., Guasti; J. Francis O'Connor, Santa Rosa.

Berkshire Awards

Aged boar—1, Bastanchury on Royal Longfellow. 2, Maler on Escalon Type. 3, Hall on Ames Rival 118th. 4, Italian Vineyard on Champion Masterpiece 8th.

Senior yearling—1, O'Connor on Enhancer. 2, Humphrey on Escalon Type. 3, Italian Vineyard on Model Leader 3rd.

Junior yearling—1, Humphrey on Escalon Big Joe. 2, Humphrey on Grape Wild Challenger. 3, Italian Vineyard on Real Type Symboleer 2nd. 4, Hall on Rose Crest Rival 11th. 5, Bastanchury on Baron Premier 157th.

Senior boar pig—1, Humphrey on Escalon Model Leader. 2, Hall on Rose Crest Rival 10th. 3, Blackman on Improver's Belle's Rival. 4, Humphrey on Bourbon Emblem. 5, Italian Vineyard on Royal Type 3rd.

Junior boar pig—Humphrey on Grape Wild Champion 2nd. 2, Humphrey on Grape Wild Champion. 3, Italian Vineyard on Del Rio 2nd. 4, Blackman on Star Oaks Masterpiece. 5, Italian Vineyard on Matchless Type 2nd.

Aged sow—1, Italian Vineyard on Willsona Laurel Princess. 2, Humphrey on Grape Wild Rose 2nd. 3, Italian Vineyard on Dukes Natoma Princess. 4, Hall on Mistress Fancy 2nd.

Senior yearling—1, Humphrey on Grape Wild Rose 6th. 2, Humphrey on Escalon Lady 5th. 3, Inglewood Union High School on Rivals Matchless Lady 6th. 4, Italian Vineyard on Emblems Queen 12th. 5, Italian Vineyard on Emblems Queen 13th.

Junior yearling—1, Italian Vineyard on Meadow Duchess 6th. 2, Humphrey on Grape Wild Rose 8th. 3, Italian Vineyard on Real Type's Lucindy 5th. 4, Italian Vineyard on Violet Fenn. 5, Humphrey on Grape Wild Rose 13th.

Senior sow pig—1, Italian Vineyard on Real Type Belle 4th. 2, Humphrey on Escalon May 13th. 3, Italian Vineyard on Castlevlew Duchess. 4, Italian Vineyard on Real Type Belle 5th. 5, Humphrey on Escalon Belle 5th.

Junior sow pig—1, Humphrey on Grape Wild Rose 19th. 2, Italian Vineyard on Matchless Lady Type. 3, Humphrey on Grape Wild Rose 21st. 4, Blackman on Model Lady. 5, Italian Vineyard on Burton's Orange Lady 2nd.

Aged herd—1, Humphrey. 2, Italian Vineyard. 3, Humphrey. 4, Bastanchury. Young herd—1, Humphrey. 2, Italian Vineyard. 3, Hall.

Herd bred by exhibitor—1 and 2, Humphrey. 3, Hall.
Get of sire—1, Humphrey on Get of Big Leader. 2, Italian Vineyard on Real Type. 3, Humphrey on Get of Winona Champion Leader.

Produce of sow—1 and 2, Humphrey. 3, Italian Vineyard.
Fat barrow—1 and 2, Humphrey. 3, Italian Vineyard.

Pen of barrows—1, Humphrey. 2, Italian Vineyard.

Senior champion boar—Humphrey on Escalon Big Joe; reserve, O'Connor on Enhancer.

Junior champion boar—Humphrey on Escalon Model Leader; reserve, Humphrey on Grape Wild Champion 2nd.

Grand champion boar—Humphrey on Escalon Big Joe; reserve, O'Connor on Enhancer.

Senior champion sow—Humphrey on Grape Wild Rose 6th; reserve, Italian Vineyard on Meadowview Duchess 6th.

Junior champion sow—Italian Vineyard on Real Type Belle 4th; reserve, Humphrey on Grape Wild Rose 19th.

Grand champion sow—Humphrey on Grape Wild Rose 6th; reserve, Italian Vineyard on Real Type Belle 4th.

The Poland Chinas

The Poland China show was very light this year, but most of the animals shown were of excellent quality. Owing to difficulty in shipment, two carloads of Polands from the San Joaquin Valley did not arrive, hence the number shown was much smaller than had been anticipated.

The grand champion boar, Buster Bob, owned by Eastman Ranch, San Fernando, was one of the largest framed junior yearlings ever shown in the West, and a boar that would look good at any show. The same herd produced the junior champion

sow, Smooth Mald, a very stretchy, typy senior sow pig and a littermate to the reserve junior champion boar.

The reserve grand champion boar was President's Model, shown by H. Christiansen, Arlington, a very large, smooth, mellow boar and one of the heaviest boars in the show.

The grand champion sow was Miss Big Price, exhibited by Mrs. Anita M. Baldwin, Santa Anita. The same herd also showed the reserve grand champion, Santa Anita Orange Bud, the dam of the junior champion boar and the first and second prize junior gilts.

This was an excellent litter and would have been a strong contender at the state fair. Mrs. Viola L. Renwick, Santa Barbara, showed a litter sired by The Diplomat, that furnished lots of competition. However, they were handicapped by age, being among the youngest pigs shown.

Prof. J. I. Thompson placed the awards in a very satisfactory manner.

Poland China Awards

Exhibitors: Anita M. Baldwin, Santa Anita; Frank Boehm, Downey; H. Christiansen, Arlington Station; Chas. Wm. Cooper, Rivera; J. L. Dunlap, Pomona; J. L. Hall, Lomita; E. Avery Newton, Los Angeles; Viola L. Renwick, Santa Barbara; Bruce White, Downey; Byrum Zinn, Downey.

Aged boar—1, Christiansen on President's Model. 2, Renwick on El Profito. Senior yearling—1, Baldwin on Greenwood King.

Junior yearling—1, Eastman on Buster Bob. 2, Renwick on Mammoth Price. 3, Dunlap on Longfellow Timm. 4, Newton on Price's Longfellow.

Senior boar pig—1, Eastman on Eastman's Korver. 2, Dunlap. 3, Dunlap.

Junior boar pig—1, Baldwin. 2, Eastman. 3, Renwick on Endurance Bond. 4, Baldwin. 5, Eastman.

Aged sow—1, Baldwin on Miss Big Price. 2, Christiansen on Liberty Girl. 3, Newton on Major's Choice.

Senior yearling—1, Baldwin on Santa Anita Orange Bud. 2, Renwick on Mammoth Queen. 3, Baldwin on Miss Wonder's Price. 4, Dunlap on Miss Lady 5th. 5, Dunlap on Miss Lady 6th.

Junior yearling—1, Renwick on Miss El Profito. 2, Baldwin on I. S. C. 1 of 19. 3, Christiansen on Queen's Perfection. 4, Dunlap on Gene's Lady. 5, Christiansen on Model Dandy.

Senior sow pig—1, Eastman on Smooth Maid. 2, Dunlap. 3, Dunlap. 4, Bragg on Thompson's Choice. 5, Dunlap.

Junior sow pig—1, Baldwin. 2, Baldwin. 3, Renwick on Eagle Bond. 4, Renwick on Banner Bond. 5, Eastman.

Senior champion boar—Buster Bob; reserve, Eastman Korver.

Junior champion boar—Baldwin; reserve, Eastman Korver.

Senior champion sow—Miss Big Price; reserve, Santa Anita Orange Bud.

Junior champion sow—Smooth Model; reserve, Baldwin.

Grand champion boar—Buster Bob; reserve, Baldwin.

Grand champion sow—Miss Big Price; reserve, Smooth Maid.

Aged herd—1, Baldwin. 2, Christiansen. 3, Dunlap.

Young herd—1, Baldwin. 2, Renwick. 3, Dunlap. 4, Newton.

Herd bred by exhibitor—1, Newton. 2, Christiansen. 3, Newton.

Get of sire—1, Baldwin. 2, Renwick. 3, Dunlap.

Produce of dam—1, Baldwin. 2, Renwick. 3, Dunlap. 4, Newton.

The Hampshire Show

As usual, the Hampshire breeders of Southern California brought out one of the best, if not the best, exhibit of Hampshires shown this season. While the number of hogs shown in this department was not as large as some of the other breeds, the quality of those shown made the exhibit a very creditable one.

In the aged boar class, F. C. Fairbanks, Redlands, won first on Harvey's Choice, and first in class and senior champion on the good junior yearling, Joe.

E. Avery Newton, Los Angeles, had the first prize senior yearling, Golden Lad. Tarzana Ranch won the junior and grand championship on the outstanding senior boar pig Tarzana Prince, a pig good enough to win at any show in the country.

Conejo Ranch won reserve junior.

Tarzana Ranch won first in the aged sow class on the great sow, Floreine 2d, and was later awarded senior and grand champion on the same sow. The same firm had junior champion and reserve grand champion sow with the outstanding senior sow pig, Tarzana Princess 1st.

Fairbanks won first, second and third in the junior yearling sow class on Blossom, Chinie and Flower, three very typy sows.

Conejo Ranch won the first four places in the junior sow pig class on a remarkable litter of gilts.

C. R. Doty, Los Angeles, tied the ribbons with universal approval.

(Continued on Page 529)

150 REGISTERED HEREFORDS AT PUBLIC AUCTION

State Fair Grounds - - Sacramento, Cal.

Thursday, November 4
45---Registered Herefords---45

This is the regular fall offering of picked tops, known more popularly as the "Association Sale." Hereford breeders all over the coast have been striving constantly toward the improvement of their herds, and it is only natural to expect advancement in quality in each succeeding sale of picked cattle.

Foremost herds of the west will be represented in this sale, and the buyer who wants to add one or more extra choice animals to his herd, or the beginner who wants to start with that sort of foundation will find ample range of selection in this offering.

Sale Under Auspices of

Pacific Coast Hereford Cattle Breeders Association

J. I. Cazier, Pres., Wells, Nevada. J. A. Bunting, Sec., Mission San Jose, Calif.

Friday, November 5
Nevada Hereford Ranch

WILL SELL

55---Registered Herefords---55

The owners will endeavor to make this, their first individual public sale offering, an important event in the breed's affairs in the west, and one from which buyers will secure foundation animals upon which many splendid herds will be built. The statement that this is a rare offering, both as to breeding and individual excellence, is entirely conservative, and buyers of the better sorts should certainly find in this list such individuals as will meet their every requirement.



Beau Blanchard 76th

HARRIS STANDARD 2ND is as well bred as any bull in the United States and is a wonderful sire. Our show herd for the past three years has shown some evidence of his breeding ability, but to be fully appreciated you must see the uniform excellence of his entire get on our ranch. His get have never been defeated in the Get of Sire class.

IN THIS SALE we will sell over 30 heifers sired by him, and many of them are safe in calf to BEAU BLANCHARD 76TH. Others will be bred to ABE MISCHIEF, by Mousel's mighty Beau Mischief, and to BOCALDO 21ST, by Hazlett's Grand Champion, Bocaldo 6th.

The get of HARRIS STANDARD 2ND won first in Get of Sire class, adding another win to their string of undefeated showings.

At 1920 California State Fair, BEAU BLANCHARD 76TH was Grand Champion in the greatest Hereford Show ever staged at Sacramento, and his young son PILOT, out of a Harris Standard 2nd dam, owned and exhibited by Wm. Briggs, Dixon, was first junior bull calf and Junior Champion. Four of the first calves sired by BEAU BLANCHARD 76TH, and out of Harris Standard 2nd dams, bid well for high honors in the individual classes, and in the Get of Sire group stood second only to the get of Harris Standard 2nd. Remember that in this sale a large number of HARRIS STANDARD 2ND heifers sell bred to BEAU BLANCHARD 76TH.

At Los Angeles Live Stock Show, just closed, Beau Blanchard 76th was again Grand Champion, and his junior calf son, BLANCHARD 1ST was Junior Champion and Reserve Grand Champion.



Harris Standard 2nd

Owners:

J. H. CAZIER & SONS CO., WELLS, NEVADA.

Otis Cordell, Herdsman

Saturday,
November 6

50---Registered Herefords---50

This is an offering of most popular breeding, and should particularly attract buyers of heifers, although there will also be found an attractive number of young matrons in the list.

Among the females to be offered will be found

22 DAUGHTERS OF
BOURBON COLUMBUS

eight of them out of daughters of Beau Tempter, and the balance out of daughters of Beau Donald, Rupert Donald, Perfect Donald, and Repeater 9th.

5 DAUGHTERS
OF BEAU FAIRFAX

out of dams by Beau Tempter, Erling March On Woodford 2nd, and Rupert Donald.

8 DAUGHTERS
OF DON PERFECT 10TH

out of dams by Beau Donald, Beau Tempter, Paloma's Erling, and Don Brummel.

4 DAUGHTERS
OF BEAU TEMPTER

out of dams by Rupert Donald and Columbus Busybody.

Other sires represented by daughters in the list are MR. PERFECTION, PATRICIAN 5TH, GAY LAD 31ST, DON BRUMMEL, REPEATER 9TH, and GAY LAD 44TH.

43 OF THE FEMALES

in this offering were calved in 1917 or later, a splendid group of young brood material that should make substantial profits for their new owners.

Many of these choice young females are well along with calf, others now being bred to

MAPLES LAD 137TH
788370

who is by Bonnie Brae 8th and out of a daughter of Bonnie, second dam by Beau Modest, he by Beau Brummel, third dam by Luminary a son of Lamplighter.

Owners:

BARNGROVER & WRIGHT
SANTA CLARA, CALIF.

For catalog of any or all of these sales write

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Durocs—March, April and May farrow, the large and smooth kind. Boars and gilts by Orion's Johnson Defender, You'll Do and Gano families. Write for prices and description, or write just what you want. If I haven't it will tell you. Every pig sold must be right or no sale. **Mayflower Thoroughbred Stock Farm**, E. Bakersfield, California. **John Kincaid**, Prop.

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Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. **Hollow Hill Farm**. **B. W. Shaper**, Manager, Colton.

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I would Sell My topnotcher boar by Kings Big Bone Leader; two bred sows by Long Smooth Jumbo; also spring pigs—everything big type stuff. **H. Christianson**, Arlington. Write me.

Bred Poland-China Gilts sired by California Gerstade and bred to Some Price. \$75.00 and up. **J. A. Crawshaw**, Hanford, California.

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Wanted—Man speaking Spanish with experience in propagation (avocado, citrus and vegetables) to work with Mexican labor on ranch near La Habra. Write **R. L. Reynolds**, La Habra, California, giving full particulars of qualifications. Permanent position.

Wanted—Walnut Meats and Cull Walnuts. We have been in this business 15 years, solicit culls for cracking only, paying cash. **Fred L. Mitchell & Son**, 214 French Street, Santa Ana, California. Phone 551-M.

Wanted—Reliable man to take charge of herd of registered Hampshire hogs. Give experience, references and wages desired. Good future for right man. Box **H. O. Cultivator**, Los Angeles.

Wanted—To hear from owner of good ranch for sale. State cash price, full particulars. **D. F. Bush**, Minneapolis, Minnesota.

Wanted—To hear from owner of farm or unimproved land for sale. **O. K. Hawley**, Baldwin, Wisconsin.

Wanted—Avocado seed. **G. P. Sherwood**, 216 S. Bunkerhill, Los Angeles. Phone 19776 evenings.

Wanted—Pairs of guinea chickens. Write **Mrs. H. Gantz**, R. F. D., Santa Barbara, California.

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Airedale Puppies with reg. cer., also Poland China hogs. **M. M. Relman**, Planada, California.

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A REAL BARGAIN Why pay \$1,500 to \$2,000 per acre for improved fruit ranch in congested district when less than one-half will buy highly developed and thoroughly equipped ranch in choice location in Sacramento Valley, 50 miles from Sacramento, only 3 miles off state highway and good town on main line Southern Pacific railroad, where climatic conditions are ideal for fruit growing and where labor during harvest periods is easy to secure?

This property consists of 182 acres of loam soil with perfect drainage and irrigation facilities, 160 acres being planted to good healthy fruit stock set out by one of the best posted fruit men in the state, approximately as follows: 30 acres Fazeragoc grapes, 10 years old, 16 acres Malaga grapes, 10 years old, 5 acres Muscat grapes 10 years old, 20 acres Blenheim apricots, 9 years old, 15 acres Royal apricots 6 years old, 15 acres Hems Kirk apricots 5 years old, 23 acres almonds 7 years old, 23 acres Elberta peaches 3 years old, 10 acres Phillipp cling peaches 6 and 9 years old, 10 acres Bartlett pears 6 years old, also approximately 100 young citrus and family fruit trees.

With the property goes full equipment or large and small implements, completely adequate to care for same, including tractor, sprayer, four good work horses with harness, wagon, etc.

General improvements consist of two modern farm dwelling houses, with barns, bunk houses, etc. Also each has a good domestic well equipped with power pump. Property has creek bordering on one side, with many beautiful live oak and other trees.

Irrigation facilities are installed, consisting of deep well, equipped with modern deep well turbine pump and power unit, producing supply of water sufficient to irrigate entire acreage, also one mile of 10 inch and 12 inch diameter, well constructed underground cement pipe system with over-flow, valve controlled, outlets at tree rows.

For Drying of Crops when desired are drying grounds, sulphur sheds, etc., together with approximately 10,000 drying trays; also several thousand fruit picking boxes and necessary picking ladders, etc.

Net Earnings from this ranch in one or two more years will show 20 per cent to 40 per cent annually on invested capital.

Favorable purchase terms can be arranged on this beautiful property and if you are looking for real and unimproved value in an improved fruit ranch your inspection of this property with owner will convince you it is a bargain. Photographs on request. Box **R. W. A.**, Cultivator, Los Angeles.

74 Acres \$3,350 with 10-Acre Olive Grove

On good road, near city and town; all tillable, good grain land, except 10 acres in 3 year old olive trees, easily brought heavy bearing; 7-room house, piped water supply, 2 reservoirs; barn, other buildings, delightful scenery; owner unable occupy, makes low price quick sale \$3,350, part cash, balance easy terms. Details this and other groves, farms, ranches California many other states, page 81 Strout's Big New Illustrated Catalog Farm Bargains 33 States, just out. Call or write for free copy. **STROUT FARM AGENCY**, 503 F. J. Wright-Callender Bldg., Los Angeles, California.

For Sale—MODEL DAIRY RANCH—SOUTHERN CALIFORNIA

70 acre ranch, fully equipped, selling milk direct to consumers at 18¢ per quart. 70 head of T. B. tested cows. Income \$2,500 a month which can be increased. For price and terms communicate with owner, **M. L. Carter**, 57 Title Ins. Bldg., Los Angeles. Tel. 15962.

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For Sale—Used ranch material, windmills, pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for our "Special Bargain" price list. **Dermitt Co.**, Unstair, 120 N. Main, Los Angeles.

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For Sale or Exchange—Big Sandusky tractor, has never been run. Have no use for same. Will sacrifice. **Box 332**, Placencia, California.

For Sale—One heavy duty subsoiler. **N. E. Heacock**, Simons, California.

60 H. P. Holt Caterpillar Tractor \$2,000 See it at 922 W. 6th St., L. A. Calif.

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Berries—We can furnish you with first class plants of all leading varieties. Now is the time to order, because plants will be scarce later. Send for price list. M. J. MONIZ, Berry Specialist, Sebastopol, California.

For Sale—Strong Mountain Grown Brandywine, Carolina and Klondike strawberry plants at two dollars per hundred, postpaid. B. BRYAN, Camp Baldy, California.

Reliable Cabbage Seeds—I grow them. You want them. Let's get together. Write me for special trial offer on just what you will need. Isaac F. Tilghingast, 40 Podel Street Santa Rosa, California.

Cabbage Plants For Sale—Winningsstadt and Cannon Ball varieties. Apply daytime Victor Duran, 200 S. 3rd St., Alhambra, California. Phone 1056.

Brandywine and Banner Strawberry Plants, prices reasonable. Lon King, 1158 West Fourth, Riverside, California.

Pumpkin Seed—Mixed Pumpkin Seed, good germination, 25c per lb. Aurora Seed Mill, Stockton, California.

For Sale, about a million cabbage plants of different varieties. L. C. Johnson, Pomona.

Strawberries—Plant 'em now. Cash Nurseries, Sebastopol.

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I have cash buyers for salable farms. Will deal with owners only. Give description and cash price. Morris M. Perkins, Columbia, Mo.

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Men With Spare Time—Klanchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write J. H. Yetter, 115 North Broadway, Los Angeles.

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Imp. Caledonia

Caledonia Shorthorns constitute one of the choicest collections of the breed owned in America. Our herd bulls, Imp. Caledonia, Gainford Matchless, grand champion at the 1918 San Francisco show and Pine Grove King stand out prominently in the West. Our females represent choice Scotch and American families, and are noted for their type and quality. We can at all times furnish foundation material and bulls suitable for any herd or for the range. Our prices are moderate and every animal is guaranteed. Visit our farm and herd. Send for special bull list.

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J. L. HUGHES, Sales Mgr. Sacramento, Cal.

SICK ANIMALS

BOOK about Sick Horses, Cattle, Sheep, Dogs and Poultry, mailed free. Address Dr. Humphreys' Veterinary Medicines, 156 William St., New York.

THE SWINE SHOW

(Continued from Page 527.)

Hampshire Swine Awards

Exhibitors: Conejo Ranch, Newbury Park; F. C. Fairbanks, Redlands; E. Avery Newton, Los Angeles; John G. Rifter, Palmdale; Tarzana Ranch, Van Nuys; Josh L. Wilson, Jr., Laundara Park.

Aged boar—1, Fairbanks on Harvey's Choice. 2, Tarzana on Black Beauty. 3, Tarzana on Quality Allen 2nd.

Senior yearling—1, Newton on Golden Lad. 2, Fairbanks on Chong.

Junior yearling—1, Fairbanks on Joe. 2, Tarzana on Tarzana Allen.

Senior boar pig—1, Tarzana on Tarzana Prince. 2, Wilson on Liberty Messenger. 3 and 4, Newton.

Junior boar pig—1 and 2, Conejo. 3, 4, 5, Tarzana on Tarzana Senator 1st Tarzana Senator 2nd, Tarzana Senator 3rd.

Aged sow—1, 2 and 3, Tarzana on Floreline 2nd, Mary Pickford and Wavelet. 4 and 5, Fairbanks on Belle and Princess.

Junior yearling—1, 2 and 3, Fairbanks on Blossom, Chinie and Flower. 4 and 5, Tarzana on Tarzana Quality 1st and Mary Again.

Senior sow pig—1 and 2, Tarzana on Tarzana Princess 1st and Tarzana Princess 2nd. 3, Wilson on Miss Tipton. 4, Newton. 5, Tarzana on Tarzana Princess 3rd.

Junior sow pig—1, 2, 3 and 4, Conejo. 5, Newton.

Senior champion boar—Joe.

Junior champion boar—Tarzana Prince; reserve, Conejo.

Senior champion sow—Floreline 2nd; reserve, Blossom.

Junior champion sow—Tarzana Princess 1st; reserve, Tarzana.

Grand champion boar—Tarzana Prince; reserve, Joe.

Grand champion sow—Floreline 2nd; reserve, Tarzana Princess 1st.

Aged herd—1, Tarzana. 2, Fairbanks. Young herd—1, Tarzana. 2, Conejo. 3 and 4, Newton.

Herd bred by exhibitor—1, Conejo. 2, Tarzana.

Get of sire—1, Tarzana. 2, Conejo. Produce of dam—1, Tarzana. 2, Conejo. 3, Newton.

Fat barrow, any age—1, Tarzana. 2, Tarzana. 3, Tarzana.

Pen of 3 barrows, any age—1, Tarzana.

(Account Duroc Show, Page 526.)

Duroc-Jersey Swine Awards

Exhibitors: Charnock Ranch, Hemet; Conejo Ranch, Newbury Park; J. C. Craig, Los Angeles; Diamond Bar Ranch, Spadra; W. H. Dupee, Santee; Falfadale Farm, Perris; J. A. Carley, San Marcos; G. E. Gordon, Van Nuys; Graham-Henshaw, Lancaster; Hewitt Bros., Van Nuys; Hillside Water Co., Bishop; Hollow Hill Farm, Colton; Chester Irish, Norwalk; E. R. Jones, Van Nuys; Loest & Mounier, Van Nuys; A. J. Ludwig, Downey; E. F. Meyers, Lankershim; William V. Mong, Whittier; George Mumaw, Lancaster; E. Avery Newton, Los Angeles; H. J. Penfield & P. Maxwell, Lankershim; J. Frank N. Rouff, Palmdale; J. L. Stevenson, Van Nuys; C. T. Thompson, Bishop; J. P. Walker, Visalia; Tu-Tock-A-Nu-La Ranch, Van Nuys; Winsor Ranch, Bonita; J. E. Thorp, Lockeford.

Aged boar—1, Elliott-Brant on May Rose King. 2, Winsor on Winsor's Giant Orion. 3, Graham-Henshaw on Orion's King Gano. 4, Conejo on Giant Wonder.

Senior yearling—1, Falfadale on Great Orion Sensation, Jr. 2, Hewitt Bros. on Top Sensation 1st. 3, J. L. Stevenson on Orion's Model King.

Junior yearling—1, Charnock on Charnock Cherry Friend. 2, Mong on My Partner. 3, Conejo on Giant's Type. 4, Graham-Henshaw on Orion Col. Del Sur. 5, Garley on California's Sensation.

Senior boar pig—1, Graham-Henshaw on Royal I Am. 2, Craig on Pathfinder Likeness, Jr. 3, Diamond Bar on Cherry's Model. 4, Elliott-Brant on May Rose Taxpayer. 5, Craig on Pathfinder's Great Wonder.

Junior boar pig—1, Diamond Bar on Cherry Pathfinder. 2, Hewitt Bros. on Model Defender's Sensation. 3, Falfadale on G. & W. Sensation. 4, Craig on Pathfinder Orion. 5, Irish on Shamrock Lad.

Aged sow—1, Diamond Bar on Queen of Pathfinders. 2, Diamond Bar on Pathfinder's Molly. 3, Charnock on Allie G. 2nd. 4, Diamond Bar on Lucy Pathfinder. 5, Conejo on Wonder's Belle.

Senior yearling—1, Diamond Bar on Pathfinder's Very Best. 2, Diamond Bar on Orion Girl. 3, Winsor on Sensation Queen. 4, Conejo on Lady Model 2nd. 5, Elliott-Brant on May Rose Blossom.

Junior yearling—1, Diamond Bar on Orion Sensation Lady. 2, Diamond Bar on Smooth Duchess. 3, Falfadale on Lady Pathfinder. 4, Charnock. 5, Falfadale on Great Orioness 4th.

Senior sow pig—1, Elliott-Brant on May Rose Tattletale. 2, Diamond Bar on Cherry Rose. 3, J. C. Craig on Pathfinder's Likeness Queen. 4, Diamond Bar on Lena Sensation. 5, Hewitt Bros. on The Pride of Pathfinder.

Junior sow pig—1, Diamond Bar on Cherry Duchess 2nd. 2, Thorp on Sensational Girl of Mossdale. 3, Thorp on Orion Queen of Mossdale. 4, Falfadale on Miss Sensation. 5, Diamond Bar on Cherry Duchess 5th.

Senior champion boar—Great Orion Sensation, Jr.; reserve, May Rose King.

Junior champion boar—Royal I Am; reserve, Cherry Pathfinder.

Senior champion sow—Queen of Pathfinders; reserve, Pathfinder's Very Best.

Junior champion sow—May Rose Tattletale; reserve, Cherry Duchess 2nd.

Grand champion boar—Great Orion Sensation, Jr.; reserve, Royal I Am.

Grand champion sow—Queen of Pathfinders; reserve, Pathfinder's Very Best.

Aged herd—1 and 3, Diamond Bar. 2, Falfadale. 4, Craig. 5, Brant.

Herd bred by exhibitor—1 and 3, Diamond Bar. 3, Falfadale. 4, Brant.

Get of sire—1 and 4, Diamond Bar. 2, Charnock. 3, Winsor.

Produce of dam—1, Diamond Bar. 2, Falfadale. 3, Craig.

Single barrow, any age—1, 2 and 3, Conejo.

Pen of barrows—1, Conejo.

Duroc Futurity Show

Fall pigs, boars—1, Craig. 2, Diamond Bar. 3, Elliott-Brant. 4, Diamond Bar. 5, Winsor.

Fall pigs, litter of four—1, Craig. 2, Diamond Bar. 3, Craig. 4, Diamond Bar. 5, Diamond Bar.

Fall pigs, litter of four—1, Craig. 2, Hewitt Bros. 3, Conejo. 4, Newton.

Spring pigs, boars—1, Diamond Bar. 2, Hewitt Bros. 3, Falfadale. 4, Thorp. 5, Newton.

Spring pigs, sows—1, Diamond Bar. 2, Thorp. 3, Thorp. 4, Falfadale. 5, Diamond Bar.

Spring pigs, litter of four—1 and 2, Falfadale. 3, Hewitt Bros. 4, Winsor. 5, Thorp.

The California State Dairy Cow Competition opened September 1 and entries will be allowed until April 1, 1921. The competition is under the direction of the state university.

62 REGISTERED
HEREFORD FEMALES 62

At Public Auction

Thursday, November 18, 1920

Some months ago the owners purchased the entire herd of registered Herefords, numbering 180 head, from Kiesel Land & Cattle Co. in Oregon, a larger herd than they care to carry, and this sale will be the medium for disposing of a part of the herd.

These cattle will be presented for sale in just thrifty condition. They are range raised and used to rustling for themselves, and should be a most useful lot of breeding females as the foundation for new herds.

LOOK AT THESE ACES!

Four of these females were born in 1913, eight in 1914, one in 1915, five in 1916, twenty-two in 1917, thirteen in 1918, eight in 1919, and there is one old cow in the lot.

Sixteen of them have calves at foot, and all the balance are either in calf or at breeding age. Many of them are in calf to BEAU BLANCHARD 37TH, son of the famous Beau Blanchard, and there are also ten daughters of this bull in the offering.

Owners

FINNELL STOCK FARMS CO.

Galt, Cal.

For Catalog Write to Management

Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. John A. Davis, Manteca

AUCTION
Purebred Registered Jerseys

TUBERCULIN TESTED

SEMI-DISPERSAL SALE

OF THE

Grant A. Brown Herd

At the Rhoades & Rhoades Sale Pavilion

Clearwater, Friday, October 22nd, at 10 a.m.

The offering will include 18 head of choice females, including the following Register of Merit Cows:

	Milk	Fat	
Gertie of Willowwood.....	8957.7	568.17	State Class Champ.
Gene of Willowwood.....	8833.9	530.07	2 yrs. 9 mo.
Conquest's Nellie.....	9569.9	473.05	
Golden Grey Miss.....	6981.1	469.19	3 yrs. 5 mo.
Lottie of Willowwood.....	8482.5	413.9	2 yrs. 4 mo.
Jennie of Willowwood.....	8620.4	417.8	
Neaman of Willowwood.....	6601.4	392.79	3 yrs. 8 mo.
Fame of Willowwood.....	7993.5	388.33	1 yr. 10 mo.

A number of others now on test and making very creditable records.

Those in calf are bred to the sensational young Jersey sire, Lady's Shylock Financier, whose pedigree includes some of the most noted animals of the Jersey breed.

Catalog mailed upon request.

AUCTIONEERS:

Col. Ben A. Rhoades Harold B. Rhoades
1505 South Main Street, Los Angeles, Cal.

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Examine "Hanes" critically. You never saw—or bought—such real and true underwear service.

"Hanes" is made in heavy and medium weight Union Suits and heavy weight Shirts and Drawers.

This year we present the new yellow label medium weight, silk trimmed Union Suit, made of full combed yarn particularly for men who prefer a medium weight union suit.

Hanes Union Suits for boys

They duplicate the men's Union Suits in all important features—with added cosy fleeciness. Made in sizes 20 to 34, covering ages from 2 to 16 years. Two to four year old sizes have drop seat. Four desirable colors.

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No End Thrust Possible No Set Collars Used

The No Trouble Pump



Krogh Direct Motor Driven Pump

Fitted With Ring
Oiling Bearings
Renewable Bab-
bitted Bushings
Ring Oiling Gland

We also build deep well
turbines, deep well plungers,
horizontal and vertical
pumps for mining, irrigation,
drainage.



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STOCK AND POULTRY

ASK YOUR DEALER



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For Healthy Chickens and
More Profit

Cresylol is a coal-tar preparation five to six times stronger than carbolic acid for killing germs, yet it is not poisonous. Mix one part Cresylol with fifty parts water, and spray chicken pens, nests and floors. Healthy hens naturally lay eggs. Keep your flock healthy by frequent spraying. One gallon, \$1.75; five gallons, \$7.50. At your store.

Arthur R. Maas, Chemist 308 E. Eighth St., Los Angeles

Poultry at Livestock Show

By Jean A. Koethen



THE poultry show held in connection with the Los Angeles Livestock Show the first week in October differed in three particulars from any that have preceded it, at least in recent years. First, it was held in a tent which gave ample room for coops and for the crowd of visitors which passed along its aisles in endless procession. The aisles were so wide that the visitor could not only squeeze through, examining one bird at a time, as has been the case at some shows, but he could stand back and view a string as a whole if he wished, could even, when the crowd thinned a little, get a birdseye view of a whole alley. This distinction may not seem important at first glance, but it really adds considerably to the enjoyment of a poultry "fan" at a show if he can take in a lot of birds at one glance.

Second, there was crowd enough to make one feel that the show really amounted to something. This is merely psychological, maybe, for a show is as much a show if viewed by 50 people as when enjoyed by 10,000. Nevertheless, the crowd does count. Everybody who likes good poultry came to the Livestock Show and filed through that big circus tent. The day I was there I ran onto three near neighbors in a few minutes and in another few minutes met three Orange County poultry women. The advertising value of a show which is so well attended can hardly be estimated. On my return from Exposition Park I found awaiting me a letter asking for addresses of two exhibitors, and these are no doubt only a forerunner of many more such requests.

Third, and most unusual, the leading breed in this show was not the Rhode Island Red, which takes first place numerically three times out of four, nor the Ancona, which is as often as not a good second, nor the Barred Rock, which was for many years the best loved breed, but the little ornamental bantam. There were 235 entries of these little pets, and when I say they attracted constant and most flattering attention I am making a very modest statement indeed. There were more than twice as many entries of bantams as of Reds, which numbered 115, and nearly twice as many different exhibitors, and three times as many bantams as Anconas. The list of varieties included White, Black, Buff and Partridge Cochins, Bare Neck, Silver Sebright, Black Rose Comb, Blacktailed Japanese, Mille Fleur, Barred Rock, Silkie, Speckled Sussex, Partridge Wyandotte, Black

Minorca, White Leghorn, Partridge Rock, Silver Duckwing, Red Pyle Game, Golden Sebright and Silver Sebright. The longest string of one variety was that of Buff Cochins, and these beautifully colored little creatures were like a streak of sunshine along one side of the big somber tent.

Rhode Island Whites were a splendid class. This comparatively new breed gains steadily in numbers and from being an experiment has become a standard variety, as greatly valued for its productiveness as it is admired for its beauty.

Along with the R. I. Whites must be mentioned White Wyandottes and White Rocks. The world loves a big white bird. The entries of these two varieties were not as numerous as have been seen at some shows, but the quality was there. First White Rock cock was a beauty and some of the White Wyandotte hens were wonders. White Leghorns were conspicuous for their absence, there being only seven entries. This is not strange when one considers that these birds are bred for utility rather than points and that only two or three breeders here have tried to do original work in breeding them for the show room.

Sicilian Buttercups and Black Langshans were out in better numbers than usual, and Light Brahmas were one of the strong classes. First Black Minorca cock was a fine bird, as were first R. I. Red cockerel and first Barred Rock cockerel.

Dark Cornish is a favorite breed with fanciers, and no alley claimed more careful inspection. Houdans, Campines, Andalusians, Orpingtons, Buff Minorcas and Leghorns and Silver Wyandottes were satisfactorily represented, and our old friend, the industrious little Brown Leghorn, was back in fine form. Few of these useful and beautiful little birds have been shown the last few years, possibly because they are not easy to breed true to color, and it was a pleasure to see more than a score in their coops alongside the Whites. There were a few ducks and guineas, and the showing of turkeys was exceptional, the Bronze being especially fine.

As marking a step in the right direction mention should be made of the Junior Exhibition, which, though it numbered hardly a dozen entries, showed what is being done in some of the schools. When our boys and girls are trained to know the value of pure bred stock, poultry as well as pigs and calves, we shall have more real farmers and fewer idle young men who think only of getting into some soft job and staying there.

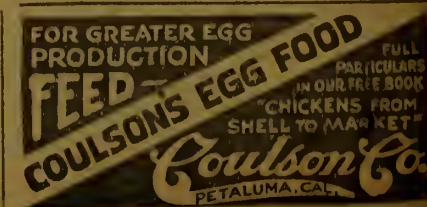
Poultry Queries---Conducted by Jean A. Koethen

Plebeian Chicks

A neighbor and I ordered respectively 500 and 200 chicks last spring. Instead of the number ordered we received 600 and 400, but as they seemed strong and healthy we paid the bill and said nothing. I paid \$87 for 600. As they grew it appeared that they were not up to specifications. They have grey instead of yellow legs and their feathers are a sort of dirty white. Some have black feathers and red mixed in with the white. Some have black legs and their beaks are grey. The roosters at four months have only scrawny little combs, while my pure bred stock at two months had well developed combs. The broilers brought a good price, though at three months it was difficult to determine their sex. They have been well fed and are very husky, always fighting and running races, not ladylike and dignified like the other stock. Is this because they are plebeians, and do you think they will lay as well as the patricians? If you think they are poor stock, and the hatchery people have stung me, maybe I had better sell them. I am just making a start and don't want to fail in the very beginning.—Subscriber, Terra Bella.

Yes, it looks as if those chicks belonged to the proletariat, but they may prove to be better layers than the aristocrats. Their vigor is very much in their favor. Pure bred White Leg-

horn chicks do sometimes show black feathers, but the gray or slaty legs show a Minorca mixture, and from the red feathers and black legs I judge there are other stains on their purity. You must consider, however, that you paid only 14½ cents apiece for them, while first-class chicks were selling for from 18 to 25 cents, so you were not so badly stung. The thing to do is to keep the pullets and feed them as you are feeding to get the greatest number of eggs, but do not use them as breeders. Next spring buy eggs from the very best pure bred laying stock you can find. You will not need very many. I met a man last year who had paid \$30 a setting for eggs with which to improve his stock. If you already have some pure bred stock you can mate the males from the finer stock to your hens, but it will be best to keep one mating of the better stock unless they are too closely related. Then you can cull out the poor layers of this mixed lot and send them to market. If you find they are all poor layers, send them all to mar-



Make the reading of advertisements in the California Cultivator a habit.

They will broaden your knowledge of the manufacturing improvements.

ket, but there will probably be some worth keeping another year. Just see to it that they never get into the breeding pen and you will be all right. If you prefer buying chicks to high priced eggs there are plenty of reliable breeders who will sell you bred-to-day chicks for 25 cents apiece, but you will have to order immediately for spring delivery.

Gizzard Worms

My spring chickens have worms in their gizzards. The worms have eaten through the lining of the gizzard at the lower part and formed a nest. Some are an inch and a half long, and some smaller. I feed well, but the chickens are poor and droopy.—Subscriber, Fresno.

Of course they are poor and droopy with all that infestation. The round worm treatment of the University of California is the simplest, and probably as effectual as anything. I am not sure that it will reach those worm nests, but if it will not nothing will. Mix a pound of tobacco dust in 50 pounds of dry mash and keep this before them for three or four weeks, then give the plain mash again for several weeks. You can keep up this treatment, alternating plain mash with that containing tobacco for six months or longer, if necessary. Dr. Beach claims that this treatment will eradicate worms even if the birds are on infected soil, but it is much better to move them to clean ground as soon as the worms are gone.

Some Laying

I have 12 R. I. Red hens which began laying the last of January. From that time to October 1 they laid 1955 eggs, besides which three of them each hatched and raised a brood, thus being off the laying list for about eight weeks. They are now laying 45 per cent. They are confined in a yard 17 feet square on a ration of wheat and corn twice a day, broken bread once a day and bran before them at all times; green stuff twice a day; no meat or green bone. Do you think I could reasonably have looked for a better production with a different ration?—Subscriber, Pittsburg.

Theoretically, perhaps; practically, I doubt it. An average of 162 eggs for eight months is mighty good laying, far better than the average of meat fed hens are able to attain. Your free feeding of green stuff, along with the bread, which is splendid feed, has evidently kept the hens in such vigorous condition that they don't miss the extra protein.

Feather Pulling

I would like to know the name of the remedy for feather pulling. I saw it some time ago in the Cultivator, something to put in the drinking water, I think. I have some chickens about seven months old and they are stripping each other and eating the feathers.—Subscriber, Fresno.

Can any reader help us out with this remedy? It is generally considered that feather pulling is due to lack of something needed in the ration, usually protein, or to idleness, and that the only remedy is to give abundance of meat and greens, and to keep the birds occupied scratching or running. If you can let your birds out on range most of the day the vice will usually cure itself. If there is any remedy that can be given in the drinking water I should be glad to know it.

Leg Weakness in Turkeys

What is the cause of my turkeys losing the use of their legs and how can it be cured? These birds, hatched in April, have never been without housing. All summer they have had wet bran mash in the morning, with alfalfa on the side, and wheat and dry mash at night. They have a manure pile, a haystack and a melon patch to run to during the day.—Subscriber, Porterville.

Mash twice a day is pretty heavy feeding for young turkeys. They have evidently been putting on weight faster than their leg muscles developed and are now unable to carry the load. The ration you have been giving them

during the summer is about what you should begin to give them now in order to fatten them for Thanksgiving. As it is, you will have to cut down on their feed for a while and make them take more exercise. Let them have a dry mash composed of equal parts bran and rolled oats in the morning, with about 5 per cent bone meal added, and a light feeding of wheat at night, and make them range for the rest of their food till they are better. Your ration contains nothing to strengthen the bones and muscles, and it is for this purpose you should use bone meal and oats. Moist mash is too fattening to use long at a time.

Aspergillosis

A later report from the Hemet subscriber who asked advice for a hen that had trouble in breathing, states that the hen finally died and a post mortem showed growths of cheesy matter in the upper part of the lungs. This makes it plain that the trouble was not choking from some foreign substance in the throat, but aspergillosis, due to mold spores in the respiratory organs. These growths come

from spoiled or moldy feed and are quite common. As the foggy fall weather comes on it will be necessary to be increasingly careful about feeding bran or other feed that has been wet, even if it has been dried afterward. Not all hens are equally susceptible to the effects of mold, but there is no cure if they are once affected.

FOREST SERVICE WANTS MORE RANGERS

\$1,220 per year plus a bonus of \$20 each month is the entrance salary to be paid both men and women who receive appointments as forest rangers after having successfully passed the open competitive examination to be held at various California points on October 25.

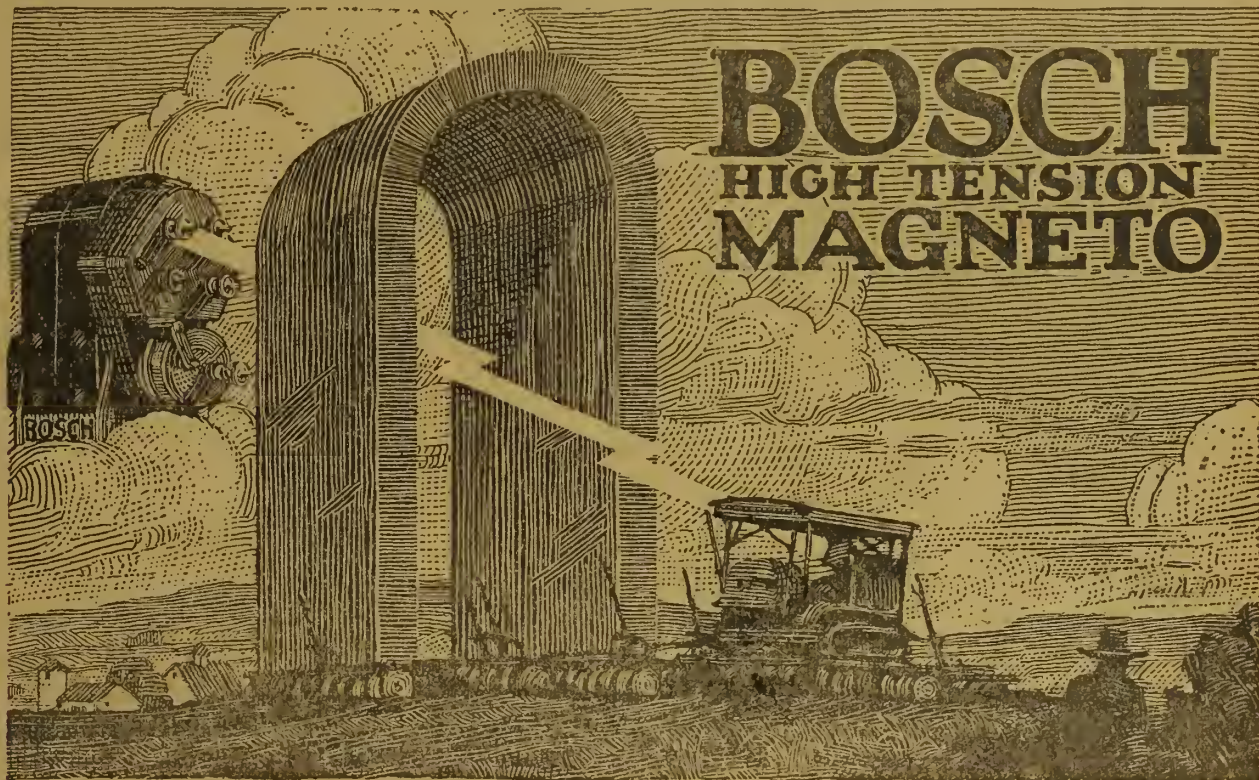
The work, which is almost wholly within the mountains, requires young, active men who are fully capable of taking care of themselves under all conditions. Applicants must, therefore, be able bodied and between the ages of 21 and 40, although persons entitled to preference because of military or naval service are released from age requirements. At least a common

school education is required, and in order to successfully pass the examination an understanding of the rudiments of compass surveying, timber scaling, land laws and the livestock industry are essential. Examinations for this position will be held on the date mentioned at Alturas, Bakersfield, Bishop, Los Angeles, Nevada City, Northfork, Placerville, Quincy, Red Bluff, San Diego, Santa Barbara, Sisson, Sonora, Weaverville, Willows and Yreka. Application blanks may be secured from the Civil Service Commission, Washington, D. C., from the forest supervisor at any of the points mentioned above or from District Forester, Ferry Building, San Francisco.

Since forest rangers are required to perform, on occasion, such manual labor as fighting forest fires and building trails, telephone lines and cabins, it is probable that few, if any, women will be appointed to these positions.

HIS GUIDE BOOK

"I must look in the book to see where I'll go on my vacation."
"You mean a resort directory?"
"No, my bank book."—Buffalo Express.



SERVICE STATIONS

Bakersfield: Bakersfield Garage & Auto Supply Co., 20th and G Streets.
Chico: Vaughan & Fordyce, 7th Street and Broadway.
El Centro: C. E. Coggins, 409 Main Street.
Eureka: Blair's Garage, 6th and D Streets.
Fresno: Electric Laboratories, Inc., 1347 Van Ness Ave.
Hanford: Cousins Tractor Company, 110-18 East 7th St.
Lindsay: Central California Electric Co., 182-86 North Sweet Briar Ave.
Long Beach: A. C. Walker, 342 American Avenue.
Los Angeles: Bosch-Rayfield Service & Supply Co., 922-4 South Los Angeles Street.
Los Angeles: E. A. Featherstone, 958 South Los Angeles Street.
Marysville: Geo. W. Roberts Electric Works, 324 D St.
Merced: Launsbury & Shaffer, 625 M Street.
Modesto: Frank Andrews, 714 Ninth Street.
Oakland: The Motor Car Electrical Co., 2324-2330 Broadway.
Oxnard: Herbert Hedges, Inc., 427 A Street.
Pasadena: Guarantee Auto Electric Works, 97 West Colorado Street.
Red Bluff: Hartman's Electrical Machine Works, 600 Main Street.
Redlands: Ray Ignition Works, 338 Orange Street.
Riverside: Mission Auto Electric Company, 450 Main St.
Sacramento: Kimball-Upson Company, 609-11 K Street.
Salinas: Salinas Auto Electric Company, Alisal Street.
San Diego: Young & Chamberlain, 1130 Front Street.
San Francisco: American Bosch Magneto Corporation, 1262-72 Post Street.
San Jose: Auto Electric Service Co., 439 South First St.
San Luis Obispo: California Garage, 879 Higuera Street.
Santa Ana: Orange County Ignition Works, 302 East Fifth Street.
Santa Barbara: Western Machinery & Foundry Co., Cota & Anacapa Streets.
Santa Rosa: L. & T. Company, 300 Fourth Street.
Stockton: W. S. Maxwell Company, 207-9 North El Dorado Street.
Taft: Maxwell & Thompson, Center Street.
Tulare: Central California Electric Co.
Visalia: Central California Electric Co.
Willows: Automotor Service Station, 253 North Tehama Street.

Buy a Tractor as You Buy a Horse

If you were buying a horse to work on your farm, you would look for one that was strong, reliable, easy to manage, economical to keep and long lived. And, since a tractor is simply an iron horse, you should look for the same qualities in it.

But you cannot get such a tractor unless its ignition system is high grade and dependable. Poor ignition means lack of power, waste of fuel, delay, trouble and expense. Perfect ignition gives economy, power, quick work, dependability and long life to the tractor.

The most efficient ignition system for tractors is the Bosch High Tension Magneto. It gives big, full, flaming sparks in the cylinders—sparks so big and hot that they fire even low grade fuel instantly. And it gives sparks with perfect regularity—rain or shine, winter or summer—day in and day out, for years.

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MOTOR TRUCKS - TRACTORS - AIRPLANES - MOTOR CARS - MOTOR BOATS - MOTORCYCLES - GAS ENGINES - ETC.



Los Angeles Markets

Los Angeles, October 13, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 67 cents.

Dairy Exchange price last week on extras:

	6	7	8	9	11	12
Oct.	69	69	69	69	69	67

CHEESE

Brokers' prices:

California flats, 31-33.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 78 per dozen; case count Produce Exchange closing price 72 per dozen; pullets, Produce Exchange closing price 62 per dozen; pewee pullets, 49.

Dairy Exchange prices last week on extras:

	6	7	8	9	11	12
Oct.	76	78	78	78	78	78

POULTRY

Price to consumers: Hens, lt., 29; heavy, 32; colored, 35; broilers, 39@42; roasters, 34; old roosters, 14; fryers, 34; ducks, old, 23; ducklings, Pekin, 3½ up, 25; others 23; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47.

Belgian hares, live, 16@21; old, 9.

LIVESTOCK

Los Angeles, Oct. 12.—Welghed and delivered off cars without food or water:

Hogs (hard-earr): 125 to 175 lbs., 16.00; 175 to 225 lbs., 16.50.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, October 12, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, market weak. Stocktons: Burbanks, best, 2.50@3.00 sacked; poorer low as 2.25. Sweet mostly 90@1.00 per lug.

Onions: Supplies heavy, market dull. Stocktons: Whites 2.00@2.25; Browns mostly 1.40@1.60 per 100 lbs. sacked. Garlic, lb., 12@18.

VEGETABLES

These are the actual prices obtained October 12 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 8@10; Limas, 6@8.

Beets: Doz., 50@60; sk., 1.75@2.00.

Cabbage: Supplies moderate, market steady, movement slow, wide range in quality. Best mostly 2½@3 per lb.; per field crate, best, 2.25@2.75.

Carrots: Doz., 30@40; sack, 1.20@1.50.

Cauliflower: Supply liberal, field cr., 2.25@2.75.

Celery: Doz. bunches, \$5@1.00; cr., 3.00@3.50.

Corn: Local, best 75@1.00 per box.

Cucumbers: Market steady; local, best, lug, 75@1.00.

Egg Plant: Lb., 3@5.

Lettuce: Field crs., 1.50@1.85.

Peppers: Bells and Chilis, lb., 3@5.

Squash: Local summer, lugs, 75@1.10.

Hubbard, lb., 2½@3.

Tomatoes: Local lugs, best, mostly 50@75.

Turnips: Per doz., 35@50; sk., 2.25@2.50.

DECIDUOUS FRUITS

These are the actual prices obtained October 12 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies heavy, market steady. Bushel boxes: Bellefleurs, 4 tier, 1.50@1.75; 4½ tier, 1.35@1.55; Jonathans, fancy, 3.00@3.25; Delicious, fancy, 3.50@3.75. Idaho & Utah loose Jonathans, 6½@7 per lb.

Bananas: Lb., 11½@12.

Cantaloupes and Melons: Cantaloupes—Market steady, supplies moderate. Local Tip-top and Paul Rose, pink meats, standard crates, mostly 1.00@1.40; few high as 1.75. Watermelons, lb., ¾@1.

Figs: Box, 75@1.00.

Grapes: Supplies liberal, market strong on Tokays, and steady on others; Muscats and Cornichons, 6½@8 per lb.; Tokays, 8@10 per lb.

Peaches: Local, mostly 2.00@2.50 lug; few high as 2.75.

Pears: Bartletts, best, lb., local, mostly 6@8; Northern mostly, 8@10.

Prunes: Lb., 7@8.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.75@3.00; special packed brands, 3.50@4.00.

Lemons: Market dull, wide range in prices. Local stock: Packed, bx., 2.75@3.25; loose, 1.00@1.50; lug, mostly 50@60.

Oranges: Supplies liberal, market firm. Valencia: Packed special brands, 126's, 150's and 176's, 7.25@7.50. Local packed, second grade, 4.00; packing house culls, 75@1.50.

HONEY

U. S. bureau of markets: Demand moderate, movement slow, market steady, little change in prices. Carloads f. o. b. usual terms: White Orange and White Sage, 18@20; Light Sage, 15@18; Light Amber Alfalfa, 14@17; Hawaiian Light Amber, 12; Beeswax, 40@42.

NUTS

California Walnut Growers' Association announces prices on 1920 walnuts: No. 1, soft shells, 2½; No. 2, 16½; Budder, 25½; standard budded, 22½ per lb.

GRAIN AND FEEDS

Grain Exch. prices bid October 10:

Barley: 2.10@2.12½.

Milo: Clarks, 2.65.

Corn: Blk., Yellow, No. 2, 2.35; No. 2 White, 2.17½.

Gyp.: 2.85.

Bran: Kansas, 40.25.

HAY

Alfalfa Growers of California, Oct. 13:

While there was no advance in the price of alfalfa during the week, the market showed a healthy undertone and receipts were readily absorbed. This shows the great intrinsic strength of the position of alfalfa, considering the state of the money market, and still more so considering that the already demoralized market for other feed and food products again suffered additional severe declines during the week, establishing new low records for wheat, corn, oats, etc., and bringing prices still further below cost of production. So serious is the situation that

in the case of wheat the wheat growers are being urged not to sell any wheat after October 25 until the price of good wheat is \$3.00 a bushel; it is now about \$2.00, and corn, oats, etc., are quoted correspondingly low. We doubt that this measure will bring the desired result, there being a large over-production of wheat as well as corn, barley, etc., unless there is found a way to finance the exportation of the surplus to Europe, where it is all wanted, but mostly on long time credit only, and the question is who can and will "hold the bag." There were approximately 750 tons of hay of all kinds received on the Los Angeles tracks the week ending October 9, and 660 beld over as against 600 tons the week before.

Fancy dairy

No. 1 dairy alfalfa

Standard Dairy

Stock Alfalfa

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots: handling and commission must be added to obtain retail prices on new hay:

Tame Oats

Barley

Alfalfa

Barley straw

San Francisco Markets

San Francisco, Oct. 12, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

Dairy Exchange quotations:

Extras

Dairy Exchange prices extras this week and year ago:

Oct.

'20

'19

Rets. wk. ending Oct. 11, 4,944 cents.

CHEESE

Dairy Exchange quotations:

Jack, full cream

Jack, half skimmed

Cal. Y. A.

Cal. Flats

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras

Extra Pullets

Undersized

Dairy Exchange prices, extras this week and year ago:

Oct.

'20

'19

Rets. wk. ending Oct. 11, 280,839 doz.

POULTRY

Wholesale prices are:

Prices in this market remained unchanged Monday from those of Saturday. There was but light demand in all lines and heavy arrivals expected. According to merchants on Front Street there is every prospect of a break in prices shortly. Quotations:

Broilers, 15 pounds per dozen, 50.

Colored fryers—2 to 3 lbs., 38@40.

Colored young roosters (smooth), 3 to 4 lbs., 40; stagg, 25@27.

Old roosters (colored), 20@23; market firm.

Leghorn hens 3 lbs., 30; under, 25.

Large colored hens, 38@40.

Young Pekin ducks, 25; old ducks, 23@25; young geese, 25; market easy.

Live Belgian hare, 20@22; dressed, 25@30; market firm.

Dressed turkeys—Young, large, 60; market firm. Live turkeys, young, 45@50; old, 45@50.

Squabs—Large, 55@60 per lb., market firm.

Pigeons—3.00@4.00 per dozen; market firm.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1000 to 1200 lbs., 9@9½; do, 1200 to 1400 lbs., 8½@9; do, second quality, 7@7½; thin, 5½@6.

Cows and heifers: No. 1, 7½@8; second quality, 6@7; common to thin, 3@4.

Calves: Light weight, 10@11; medium, 8@9; heavy, 7@8.

Lambs: Milk 9@10; yearlings, 7½@8.

Sheep: Wethers, 7@7½; ewes, 4½@5.

Hogs: Weighing 100 to 150 lbs., 15; 150 to 225 lbs., 16; 225 to 300 lbs., 15½; 300 to 400 lbs., 14.

California Farm Bureau Marketing Association reports sales:

No. Av. Wt. Dock Price

Modesto, October 5, 1920

77 194 ... 15.55

20 180 ... 15.55

63 211 ... 15.50

4 141 ... 14.50

1 310 ... 14.50

13 362 ... 13.00

1 320 ... 5.00

Two cars, 17 consigners.

Tegner, October 6, 1920

83 212 ... 15.15

54 183 ... 14.75

20 149 ... 13.75

15 306 ... 12.75

Two cars, 27 consigners.

Fresno, October 8, 1920

62 212 ... 15.70

28 157 ... 14.70

11 146 ... 15.20

5 396 ... 13.70

3 120 ... 10.00

One car, 17 consigners.

McFarland, October 9, 1920

85 207 ... 16.00

98 168 ... 15.60

93 179 ... 15.70

9 320 ... 13.20

4 266 ... 15.20

12 134 ... 13.00

48 153 ... 13.50

Four and one-half cars, 21 consigners.

HIDES

Hides: No. 1 heavy, 55 lbs. up, 15 per lb.; medium, 45 to 55 lbs., 15c; light, 30 to 45 lbs., 15c; native bulls, 12c; center branded hides in all grades 2c less base price and No. 2 center branded 3c less.

No. 1 wet salt klp, 15 to 30 lbs., 16c; No. 2 do, 15 to 30 lbs., 14c; No. 1 wet salt calf, trimmed, 24c; and do, untrimmed, 19c; No. 2 calf, 2c lb. less. The price of No. 2 hides will be 1c less than the price of No. 1.

No. 1 dry, 16 lbs. and up, 25c; klp, 7 to 15 lbs., 26c; calf, under 7 lbs., 28c; dry stags and bulls, one-third less than dry hides; dry glue hides, klp and calf, one-third price or less, according to quality; pickled hides and skins, 3c less than dry hide; dry salted hides and skins, 9c less than dry hide.

Pelts: Long wool, 9 to 12 months, 1.50 up; medium, 6 to 9, 75@1.25; short, 3 to 6, 40@70; shearings, good, 1 to 3, 10@15; do, shaved or damaged, up to 10c; lambs, large, long wool, 50c up; lambs, small, 15@30; milk lambs, 5@15.

POTATOES AND ONIONS

Wholesale prices:

Potatoes, per cental: Street prices:

River, 2.40@2.60 for No. 1, 1.50@2.00 for No. 2; do, Oregon Burbanks, 3.00; Salinas, 3.50@4.25; Idaho Gems, 3.00. Sweet potatoes, 3¼@3½ lb.

Onions: Yellow, 90@1.00 per cental; Australian brown, 1.00@1.25; do, white, 1.50@2.00.

Garlic: New, 6@8.

VEGETABLES

Wholesale selling price:

Artichokes: Doz., 40@1.00.

Beans: Lb., 6@7; garden, 8@10; Italian, 8@10; Lima, 10@11.

Beets: Sk., 1.50@2.00.

Carrots: 1.50@2.00 sk.

Cauliflower: Doz., 1.00.

Cucumbers: Lug, 1.00@1.50.

Cabbage: Lb., 1.

Celery: Cr., 4.00@5.00; bunch, 30@45.

Corn: Sk., 2.00@2.50; fy., 3.00@3.50.

Egg Plant: Stockton, lug, 50@75; Livingston, 1.00@1.35.

Lettuce: Doz., 35@40.

Okra: Bx., 1.00@1.25.

Onions: Green, per bx., 1.75@2.00.

Peas: Lb., 15@18.

Peppers: Lug bx., Stockton Bells, 75@90; Bay, 1.00@1.25; Chili, 75@90.

Rhubarb: Lug, 1.75.

Spinach: Lb., 6.

Squash, Summer: Lug 75@1.25; Cream, 75@1.00; Hubbard, 1.25@1.50; sk., Marrowfat, sk., 1.00@1.25.

Tomatoes: Bx., 50@1.25; fy., 1.50@1.75.

Turnips: Sk., 1.50@2.00.

FRESH FRUITS

Apples: King David, 1.75@2.50; Bellflowers, 1.15@1.60; Rhode Island Greenings, 1.50@2.00; Jonathans, lug, 2.00@2.75; Newtons, 2.15@2.40.

Avocado: Doz., 3.50@4.00; Blacks, doz., small, 1.25@1.75.

Bananas: Lb., 10@11.

Berries: Strawberries: 85@1.35 per drawer; raspberries, 75@85 per drawer; blackberries, about, 7.00@10.00; Huckleberries, lb., 22@25.

Cantaloupes and Melons: Turlock cantaloupes, standard 1.25@1.50 lug; Pony, 85@1.00; flats, 50@60; Sacramento, 1.00@1.50 per lug; casabas, 1.00@1.25 per crate; watermelons, 1¼@1½ lb.; Honey Dew, 1.00@1.25 per crate; Persians, 1.50@2.25 per crate.

Cranberries: Per bbl., 13.50@14.00; 7.25 @7.50 per half bbl.; Oregon, 5.25@5.50 box.

Figs: Double, 1.25@1.50; single, 75@1.00; White, 75@1.00.

Grapes: Per crate: Seedless, 3.00@3.50; Malaga, 1.75@2.25; Tokay, 1.75@2.25; Muscat, 2.25@2.50; Cornichon, 2.00@2.25 per lug; Muscat, 3.75@4.25; Tokay, 2.50@3.50; seedless, 4.50@5.00; Malaga, 3.00@3.25.

Olives: Lb., 10@12½.

Peaches: Per small box, 1.50@2.00; L. A. lugs, 2.00@2.25; Alameda, 2.50@3.25.

Pears: Bartlett, 3.50@4.50 for wrapped, per box, 2.50@3.00 for No. 2; lugs, 3.00@3.50 for fancy, and 2.00@3.00 for choice; Winter Nellis, 3.00@3.25.

Persimmons: Rx., 2.00@2.50.

Pineapples: Dozen, 4.00@5.00.

Plums and Prunes: 2.00@2.25 per crate or box; do, fancy varieties, 2.25@2.50; small lugs, 2.75@3.00.

Pomegranates: 1.50@2.25 per peach box; 3.00@3.50 per half orange box.

Quinces: Bx., 1.00@1.50.

CITRUS

Valencia Oranges: 5.00@7.50; Lemons, 2.00@4.00 Grapefruit, 2.50@4.00.

DRIED FRUITS

Raisins: Sunmaid, seeded, 36 15-oz. pkgs., 27c pkg; bulk, seeded, 25-lb. bxs, 28c lb.; 3-crown L. M raisins, 25-lb. bxs, 28c lb.; 2-crown L. M raisins, 25-lb. bxs, 27c lb.; black grapes, 25c lb.; feherzagos, 27c lb.; malagas, 27c lb.; red berry muscats, 20-lb. bxs, 12c lb.; Thompson seedless, 25-lb. bxs, 25c lb.; clusters, 5-lb. bxs, 1.50 box.

Figs: Fancy black, 25-lb. bxs, 12c lb.; choice black, 25-lb. bxs, 9c lb.; extra choice, 25-lb. bxs, 11c lb.; choice whites, 25-lb. bxs, 12c lb.; fancy whites, 25-lb

There has been no change in the bean market since last advices. Shippers quotations, cwt., f.o.b. California at this date are, as follows:

Bayo	.....\$7.50
Blackeye	.....5.00 to 5.25
Cranberry	.....6.50 to 6.75
Garbanzo	.....7.50
Lima, Henderson Bush	.....8.50
Pink	.....5.90 to 6.00
Red Kidney	.....11.25 to 11.50
Red Mexican	.....7.00
White, Large	.....5.25 to 5.50
White, Small	.....5.00 to 5.50

NUTS

Almonds: California Almond Growers' Exchange opened prices September 13 on 1920 crop at Nonpareil, 25; I. X. L., 25; Neplus, 24; Drake, 17. At noon September 16 prices were advanced to:

Nonpareil	.....26
I. X. L.	.....26
Neplus	.....25
Drake	.....18

GRAIN

Wheat: 3.75@3.90 cwt.; mill run, 2.75 @2.85.
Oats: Red feed, new crop, 2.25.
Barley: New feed, 1.95@2.00; shipping, 2.05@2.10.
Shorts: 62@65.
Middlings: 72@75.

HAY

Alfalfa Growers of California under date of October 12:

There were 1,565 tons received in San Francisco, the week ending October 9.
No. 1 Dairy Alfalfa.....27.00
Standard Dairy.....23.00
Stock Hay.....22.00

Under date of October 9, W. Scott says: Co. says:

Receipts past week, 1,565 tons. Contrary to expectations the hay market has

sustained its prices during the past week probably better than any other of the produce markets. In the midst of grain and feed prices going off over night at the rate of \$10 to \$12 per ton, it was expected that the hay market would show similar weakness or falling off, but although the receipts have been about the same as the previous week, prices have been, if anything, a little stronger. A rather brisk inquiry for red oat hay for interior demands has started a little current of strength in that kind of hay and a few sizeable sales are reported from the country at slightly better figures than heretofore. The rains have not been of sufficient volume or duration to make any noticeable effect upon hay prices and about all that they seem to have done is to damage a little of the alfalfa now remaining in the fields. Export trade continues along the same lines and with very light movement. Alfalfa has been a little stronger during the past week, possibly owing to a few sales of some size that have been made and possibly on account of difficulty in transportation from the shortage of cars which has interfered with the shipment of alfalfa now being pressed from the later cuttings more than it has other types of hay. If the rain is of sufficient volume to stop all pressing for a time alfalfa prices are likely to be better. Some straw has been handled in the market for feeding purposes only; the item of bedding straw which used to be such a feature here, has become an almost unknown quantity.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charges of cartage, commission and handling expenses must be added according to conditions).

Wheat Hay, fancy	.....26.00@28.00
Wheat Hay (light 5-wire bales)	.....23.00@25.00
Tame Oat Hay	.....23.00@25.00
Wild Oat Hay	.....17.00@19.00
Barley Hay	.....17.00@20.00
Alfalfa Hay	.....21.00@25.00
Straw—Oat or Barley	.....14.00@15.00

Citrus Markets

Los Angeles, October 13, 1920.

Valencias are nearing their finish with something over 300 cars yet to go. Market conditions are firm and all offerings are being quickly taken at around \$7.00 f. o. b. The new crop is coming on with an estimate of about 50,000 carloads, of which 20,000 will be Navels. In total tonnage the Valencias will crowd close to Navels this year. Florida growers contemplate starting moving of the new crop during November and will have large quantities in line for the Christmas trade. Owing to legal complications affecting the matter of ripeness of fruit, it is estimated Florida fruit will go forward greener than usual and in much larger quantities.

Lemon growers are now feeling more comfortable than they have for the last two years. Good fruit is commanding ready sale and at fair prices. This is doubtless due to the material shrinkage in receipts from the Mediterranean.

Shipments

Shipment of oranges to date since November 1, 1919, from Southern California, 28,322; lemons, 9,250; total, 37,572. To same date last season: Oranges, 33,641; lemons, 9,403; total, 43,044. From Central California to date this season: Oranges, 5,375; lemons, 288; total, 5,663. To same date last season: Oranges, 3,714; lemons, 251; total, 3,965. Northern California this season: Oranges, 261; lemons, 23; total, 284. To same date last season: Oranges, 244; lemons, 2; total, 246.

AT THE AUCTIONS

October 6
New York: 16 or., 1 lem. Val. 3.35-11.19, lem. 2.60-5.00.
Boston: 5 or., 1 lem. Val. 5.75-6.90, lem. 5.30-5.65.
Philadelphia: 6 or. Val. 3.20-3.45.
Pittsburg: 2 or. Val. 4.80-7.70.
St. Louis: 2 or. Val. 3.85-5.25.
Cleveland: 3 or., 1 lem. Val. 3.03-6.65, lem. 5.70.
Cincinnati: 2 or., 1 lem. Val. 4.10-7.65.
Baltimore: 1 or., 1 lem. Val. 5.55-7.60, lem. 2.25-3.45.

October 7
New York: 15 or. Val. 3.75-10.65.
Boston: 4 or. Val. 5.40-6.70.
Pittsburg: 2 or. Val. 4.75-7.50.
St. Louis: 1 or., 1 lem. Val. 5.20, lem. 4.90-5.70.

October 8
New York: 11 or. Val. 3.35-10.00.
Boston: 3 or., 1 lem. Val. 4.00-7.10, lem. 5.45-5.70.
Cleveland: 2 or., 1 lem. Val. 4.05-7.35, lem. 4.95-5.85.
St. Louis: 1 or., 1 lem. Val. 6.40, lem. 5.00-5.35.
Baltimore: 1 or. Val. 4.85-5.30.

October 11
New York: 22 or. Val. 2.40-11.00.
Boston: 6 or., 2 lem. Val. 2.70-7.65, lem. 5.90-6.00.
Philadelphia: 4 or. Val. 3.05-7.75.
Pittsburg: 3 or., 1 lem. Val. 5.20-7.65, lem. 7.30.
St. Louis: 2 or., 2 lem. Val. 3.60-6.30, lem. 4.25-5.00.

October 12
Philadelphia: 2 or. Val. 4.95-8.60.
Pittsburg: 1 or. Val. 4.35-8.15.
St. Louis: 2 or., 1 lem. Val. 2.85-6.50, lem. 4.25-5.05.

HE MUST, SURELY

A prominent man says that we are paying only a fair price for the things we buy. He must mean a church fair price.

FRUIT GROWERS' MEETING

A meeting of fruit growers is being held this week at Riverside during the fair, arrangements for which were made by George P. Weldon of Chaffee Junior College. Professor Whitten is explaining long pruning as applied to citrus fruits and addresses by other practical horticulturists are being made.

DISTRIBUTORS OF POULTRY SUPPLIES

More poultry is produced in Los Angeles County than in any other county in California, and the poultry industry throughout the state is increasing in importance at a rapid rate. Evidence of these facts is shown in the activity of manufacturers of poultry supplies in entering this territory with branches of their eastern factories, to facilitate the handling and distribution of their prod-

ucts, so that prices may be as low as possible and deliveries made promptly. The Hoeft Company, Incorporated, of Chicago, manufacturers of Moe's poultry supplies, consisting of hovers, brooders, fountains, brood coops, feeders, egg-testers—in fact every modern metal appliance for poultry men—have opened a factory branch in Los Angeles where a complete line of Moe products will be handled. The branch will also have a large assembling department, and goods will be shipped here ready for assembling, thereby reducing the freight. The local branch will be in charge of R. O. Smith and S. H. Church. Mr. Church is well known to poultrymen as he has been identified with some of the large dealers in poultry supplies in the territory for the past eighteen years.

WEATHER REPORT

San Francisco, Calif., October 9, 1920.

Stations	Wk. Heason.	Norm.	Max.	Min.
Eureka	1.60	4.81	2.98	72
Red Bluff	.42	.77	1.28	84
Sacramento	.46	.47	.60	84
San Francisco	1.21	1.34	.51	75
San Jose	.72	.74	.86	80
Fresno	.50	.84	.50	88
San Luis Obispo	.60	.60	.67	86
Los Angeles	Trace	Trace	.16	76
San Diego	.0	.02	.16	79

Quality First



Quality Always Wins

In every walk of life, doing something better than the other fellow spells success. Boston Garter's success is just a matter of being ahead in quality and workmanship, giving wearers the greatest satisfaction.

GEORGE FROST CO., BOSTON, MAKERS OF Velvet Grip Hose Supporters For Women, Misses and Children

Melilotus Indica

Guaranteed Free From Johnson Grass

\$4.50

per hundred pounds f.o.b.

Mesa Seed and Feed Company

Mesa, Arizona

Freight Rate to Los Angeles \$1.55



Pull Out Stumps

Get richest, most productive land into crops. Make more money. Hercules on 30 days' free trial. Three-year guaranty. Safe and fast. Send post card for free book. Introductory price offer now.

HERCULES MFG. CO.
1928 23th St., Centerville, Ia.

25 Cords a Day

Easily Sawed By One Man. Easy to move from cut to cut. Make big profits cutting wood. Cheap and easy to operate.

OTTAWA LOG SAW

Does 10 men's work at one-tenth the cost. Makes work easy. Engine can also be used for running pumps and other machinery. Saw blade easily removed. Write for our low price. Cash or Easy Payments.

Ottawa Mfg. Co.
2746 Wood St.
Ottawa, Kansas.

30 Day Trial 10-Year Guarantee



Notice to Stockmen and Dairymen

HAMMCO GRINDERS

This Mill Will Save 50% of Your Feed Bills—Will Grind Perfectly Any Cured Forage Crop

ALFALFA	BARLEY	CORN ON THE COB	MILO MAIZE
BEAN STRAW	STRAW	KAFFIR CORN	BEEF TOPS
BARLEY STRAW	CORN FODDER	SORGHUM	OATS

B. HAYMAN CO., Inc. Since 1876 118-20 No. Los Angeles St. LOS ANGELES, CAL.

Las Delicias Rancho Berkshires

Escalon May Star 266796—The largest, longest, smoothest, typeiest Berkshire boar on the Pacific Coast—is first sire in service in our herd.

Escalon May Star was made grand champion boar at Owensmouth; he stood second in strong class at Los Angeles Live Stock Show without having been fitted.

We have some very excellent young boars and gilts got by Escalon May Star, and out of high-class registered dams.

Start right with real blood and high individuality.

Visit the ranch, or address

Ed R. Maier

Santa Susanna, Cal.

Italian Vineyard Company
Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

Alex. Wilson, Supt., Guasti, Cal.

Castleview Ranch Berkshires

The Home of ACHIEVER the Boar and Enhancer, the Other Boar
A few choice boar pigs for sale sired by the above boars. A few choice bred sows for sale at reasonable prices.

Castleview Ranch

Santa Rosa, Cal.

Bastanchury Better BERKSHIRES

LA HABRA, CAL.
E. N. WHITMORE, MGR.

The boar is 60 per cent of the herd. We showed the 1st prize aged boar at the state fair this year. We have some of his pigs, both sexes, for sale at reasonable prices.

Renwick's El Profito Polands
at the Los Angeles Livestock Show

The Renwick big type Poland Chinas were the center of a lively interest by all comers. Ten ribbons were captured in keen competition. The old grand champion, El Profito, is still in active service, assisted by the big junior yearling, Mammoth Price 227941. Address

Viola L. Renwick, Santa Barbara, Cal.

Household Department

THE GAME

By Alice Van Leer Carrick, in Youth's Companion.

Oh, when you go a-traveling, a-traveling
on the train,
What do you do, what do you say,
What are the many games you play?
We know one; we'll show you the way.
Listen, we'll tell it again!
You take the opposite sides of the car,
Whether you're traveling near or far,
And count the animals that you see;
Sheep are Four and pigs are Three,
And Ten a bird flying over a tree,
Everything counts that's an animal,
Everything counts that's alive:
A horse is One and a cow is Two,
And a cat-in-the-window Five!

Oh, when you go a-traveling, a-traveling
all day,
What does it matter if the rain
Slips and slides down the window-pane
When you can try and try again
This wonderful game of play?
You take the opposite sides of the car,
Whether you're traveling near or far,
And count the animals that you see;
Sheep are Four and pigs are Three,
And Ten a bird flying over a tree,
Everything counts that's an animal,
Everything counts that's alive:
A horse is One and a Cow is Two,
And a cat-in-the-window Five!

ALL ABOARD FOR THE FURNITURE ISLANDS!

By Clara Peterson

THE nursery door had been locked for several days, but now it was wide open. The hall had grown quite dark but there was a blaze of electric light from the open door and the twins ran, breathless, and stood on the threshold.

"Oh! Oh! Oh!" said the two together. The walls were painted yellow and there was a low border of birds, big birds and little ones, peacocks and robins and ostriches and humming

birds. There were thin white curtains at the windows and new blue cushions on the window seat. There was a rug of palest grey with a yellow border and on it stood the four presents.

An ivory bed just big enough for twins. Across from it, a bureau with wide drawers and a shining oblong mirror. And on either side stood the dearest little rocking chair—two cozy ivory rockers.

The twins began with the left hand rocker, for there was something very wonderful about this furniture. The chair had a broad panel for its back and on the panel was a painting.

"It's Pussy Cat Mew," said Jennie softly, for she couldn't be sure that the picture was real.

"Pussy Cat Mew jumped over a coal, And in her best petticoat burnt a great hole.

Poor Pussy was weeping; she'll have no more milk

Until her best petticoat's mended with silk.

There was a painted fireplace with the bright red coal burning a hole in the carpet. And there was Pussy Cat Mew, weeping and holding out her little white ruffled skirt while old Mrs. Cat scowled and scolded. The picture was so very real that Janie drew back her finger when it had almost touched the hot coal. Jennie laughed and they tiptoed across the rug to the bureau.

"This is for the first poem in our book," said Janie.

"The hart loves the bligh wood,
The hare loves the hill;
The knight loves his bright sword,
The lady—loves her will."

An emerald forest strayed across the front of the bureau. There was a little spotted fawn peeping from the trees. There was a patch of clovers

in one corner and down among the flowers was a bunny nest—five tiny rabbits nestled together. Jennie bent her head lower to count them. There was a very steep hill and at the bottom of it, right at the bottom of the bureau, too, Auntie Bee had painted three silvery turrets.

"O dear!" said Janie.

"O dear!" said Jennie. "That must be the castle where the knight and lady live, and there wasn't room for it."

The right hand rocking chair was exactly like the other, but the painting was different.

"Daffy-down-dilly has come to town In a yellow petticoat and a green gown," said Jennie.

A great many Daffy-down-dillies had come to town and they were dancing gayly all over the ivory panel—flower maidens in golden lacy underskirts and grass green dresses.

It wasn't until the twins were in bed and mother and daddy had gone downstairs (leaving the lights burning for half an hour), that they really noticed the other picture. Auntie Bee had painted it just where it belonged—on the inside of the footboard where two little girls could lie and study it without sitting up.

"This is the very prettiest of all," murmured Jennie. "But what does it mean? I can't remember any nursery rhyme about it."

"Cunning baby camel," said Janie slowly, and then her eyelashes drooped and she was fast asleep.

A homely baby camel was standing sulkily in the midst of a flowery meadow. Beside him on a camp stool sat a queer sort of fairy busily painting a picture. She wore a straight brown suit and big glasses with black rims, but her face was as pretty as a Daffy-down-dilly's.

"I wonder what she's painting," said Jennie sleepily. "Why, I can

almost see! It looks—it looks like a kit—"

But Jennie couldn't say another word, because she too was fast asleep.

The twins had not been asleep more than five minutes when the artist fairy stretched both arms above her head and yawned. The camel bent his long neck and frowned as he said:

"Suffering Sassafras, Paintetta, have you finished?"

"O dear!" said Paintetta. "I was never so tired in my life. Wonder what I can find for lunch."

The camel was already ambling off and the fairy picked up her stool and easel and turned around. Janie and Jennie were sitting up in bed, wide eyed.

"How do you do," said Paintetta, as though she had known that they would be awake. "I am in quite a hurry for Cammie is running ahead as usual, but you may follow if you care to."

Janie looked at Jennie and Jennie stared back at her twin. They were the same as ever but where was their new bed? The twins stood hand in hand in the midst of a meadow. Buttercups and daisies grew thick under their feet and far ahead the baby camel swung along with the fairy hurrying after him.

Janie and Jennie ran through the grass. They came suddenly to the end of the meadow. Before them lay a wonderful country; three green islands swimming in a lake of heavenly blue. There was something familiar about the islands.

"Do you know," said Jennie, "I believe they are just the shape of our new furniture. The one on that side is your chair and across the lake from it is mine. See the cunning little grass rockers running down into the water! Then away up at the other end is our bureau."

Janie clapped her hands. It didn't seem a bit queer to see island furniture.

What a Piano Meant In the Old Days

Writing from San Francisco during the week of the Democratic National Convention, Correspondent H. L. Mencken sent this dispatch to his eastern paper:

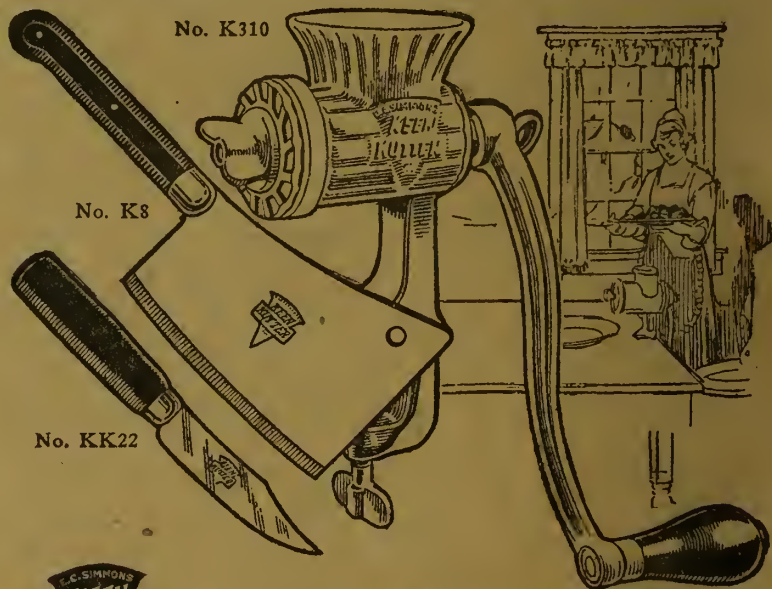
I met a man in the Bohemian Club who began to tell me casually of his grandmother. This lady, an Irish woman of good birth, came to California from Ireland in 1849, by way of Panama. Imagine the journey; the long sea voyage, the infernal struggle across the Isthmus, the worse trip up the Coast, the trek inland. Well, she brought a piano with her!—got it aboard ship in Ireland, guarded it all the way to Panama, dragged it through the jungle, then shipped it again, and finally packed it to her home in the hills; I daresay many of us could find such grandmothers, going back far enough.

If possession of a good piano meant that much to our grandmothers, surely such ownership should mean no less to you. For those days had neither convenient transportation, nor convenient payment terms, nor the wonderful modern invention of the Player Piano—the piano that any one can play.

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There's added protection in the Keen Kutter guarantee, for the purchase price is always ready to be returned even for the slightest reason.

For efficiency kitchens, use Keen Kutter Tools.

Simmons Hardware Company

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"We must be standing right on the bed island," said Jennie solemnly. "But of course we can't tell till we get away from it. This little point running into the water must be one of the legs."

They walked slowly down the point of land which was like a broad pier, and bent over to look into the dark blue water. Jennie shaded her eyes and gazed to every side, but the fairy and Cammie were gone. The twins were just beginning to wonder whether the two had fallen into the lake when a sea lion crawled out of the water. Janie and Jennie stood quite still and shivered a little, though they had often seen sea lions at the circus, but the animal didn't seem to notice that they were a bit afraid. He shook his black whiskers and looked up at them kindly.

"Fare twenty dots!" he barked. The twins didn't understand this at all until the sea lion reached down his nose and pressed a button on one side of the shiny leather harness he wore. Quick as a flash something unfolded with a jerk and there, strapped to his back, were two fine seats.

"Fare twenty dots!" barked the lion again, and smiled at them as well as he could for the whiskers.

"Fare where?" asked Jennie timidly.

"Fare anywhere," said the sea lion. "Have you seen Cammie and Paintetta?" asked Janie, who had decided not to be afraid.

"Hub!" snorted the sea lion. "They went over to Westchair Island two minutes ago. Paintetta gets on the camel's back and wishes herself across. I'd starve if they were the only passengers."

Jennie looked across the gleaming lake to where the island shoved its grassy legs into the water.

"Who lives there?" she asked.

(Continued next week.)

CHOWDERS AND SOUPS

With the cooler days we begin to think of hot soups and chowders. Here are some recipes which claim nothing new to recommend them; they are simply reminders of appetizing meals for fall weather.

Corn Chowder

One can or 3 cups of cut and scraped corn, 1 cup chopped onion, 1/2 pound salt pork, 3 cups chopped potato, 1/2 cup cream, 3 whole crackers, salt and pepper.

Cut pork into dice and put in a frying pan over fire; when brown add onion and cook five minutes; take three cups chopped, raw potatoes and parboil five minutes, then drain and add to the potatoes one can corn, the pork and onion, salt, pepper and cover with boiling water. Let cook about an hour or until tender, then add one-half cup cream and 3 whole crackers. Serve very hot. (This may be served as a soup by adding one quart milk.)

Cream of Lima Bean Soup

One cup Lima beans, 2 cups milk, pepper, 1/4 cup cream or 1 tablespoon butter.

Soak beans over night, cook until tender. Put the beans through a sieve, add the milk and seasoning; before serving add cream.

Clam-Corn Chowder

Can minced clams, half can corn. Melt two tablespoons butter or drippings, blend in two tablespoons flour, add hot water, stirring constantly to make stiff paste, then add milk sufficient to make thick and creamy. Add corn and clams and season with black pepper and salt to taste, adding bit of chopped parsley.

Potato Chowder

Pare and cut into thick slices four large potatoes. Peel, slice and brown in a tablespoon of butter one onion the size of an English walnut; add the potatoes to the hot fat and onion, then sprinkle with a teaspoon of minced parsley and just cover with boiling water sufficient to cook the potatoes tender. Do not let them become dry

and burn. When tender add one quart hot milk, half a teaspoon salt and pepper (or more to suit), then the yolks of two hard-cooked eggs mashed fine and the whites minced. If summer savory is liked, a sprinkling of it may be added during the cooking of the potatoes.

Cream of Tomato Soup

Two cups tomato, one-fourth teaspoon baking soda, one quart sweet milk, four tablespoons flour. Cook the tomatoes and the fourth of a teaspoon of soda together. This will prevent the milk from curdling. Add the milk and flour that has been rubbed to a thin paste. Season with salt, pepper and butter to taste.

Potato Soup

Pare and boil in salted water, four large potatoes and when soft, press through a sieve or ricer and return to a pint of water in which they were boiled. Add a tablespoon of shredded parsley or a teaspoon of grated onion and a pint of milk, a lump of butter, season with salt and pepper to taste. Bring slowly to a boil.

Bean and Tomato Soup

Take cold baked beans and add to them twice the quantity of cold water and let boil a few minutes. Then add the same quantity of cooked tomatoes, put through a colander as you have of beans, add an onion chopped fine. Let all cook together a few minutes, adding salt, pepper and a little mustard. Just before serving add a cup of cream. Serve with toasted bread.

Vegetable Soup

One pint white turnips cut in cubes, 1/2 pint carrots, also cut in cubes; 1 pint of potatoes, in cubes; 1 large onion, 1 clove garlic, 1 tablespoon salt, 3 tablespoons butter, 1 tablespoon sugar, 1-3 teaspoon pepper, 2 quarts water. Cut onions fine and cook slowly with the butter for half an hour. Then add boiling water and carrots and cook a half hour longer. At the end of this time add the turnips, potatoes, seasoning and cook an hour. If you have parsley, add a teaspoon ten minutes before serving. The soup is improved if some bones or trimmings of meat are added.

HOUSEHOLD QUERIES

Smoking Salmon

Will some reader of the Cultivator tell us the best way to salt and smoke salmon for home use.—Subscriber, Anderson.

A simple smoke house may be made of four walls with detachable top, dirt floor, say, 3 feet square by 7 high with door 2 by 5 with lower edge 8 inches from ground. Regulate draft by 8-inch circular galvanized iron plate, pivoted to cover 6-inch hole in door 6 inches from bottom. Six inches from top of each wall are six 1 inch holes covered with slides or plugged with corks, these to regulate outlet of smoke and steam. Remove heads, clean, split down belly and backbone so fish will spread out flat, or, if large, split into strips. Make brine of one pound salt to one gallon water. Place fish in brine skin side down overnight. Wash in fresh water for half hour, hang up to drain. Dry of surface moisture by hanging in sun and wind or in smoke house with door and vent holes open with light fire. When ready to smoke hang strips of fish, not touching, on hooks or tie on rods in smokehouse, build fire of corn cobs, drift wood or any wood but fat pine on floor, close door and draft hole. (Do not use wet wood as steam makes fish soggy.) As soon as fish begins to color open draft in door but do not allow fire to blaze. Watch through draft door and replenish fire as soon as volume of smoke falls. If door is opened when there is much fuel on fire it may blaze up and scorch fish. Have at hand a small amount of sawdust, earth or sand to scatter over flame. Continue smoking till fish are thoroughly cooked and dark brown in color. Keep in fairly cool dry place or dip in melted paraffine, being careful not to handle until cool or paraffine will crack. To remove paraffine dip fish in hot water for a few moments.

We will be glad to hear from those who have been successful in home-smoking of salmon or other fish as to methods they followed. Subscription credit will be given for all hints published.

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The Range with a Reputation

Delightful, consistent baking results make users of great Majestic ranges enthusiastic.

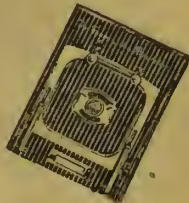
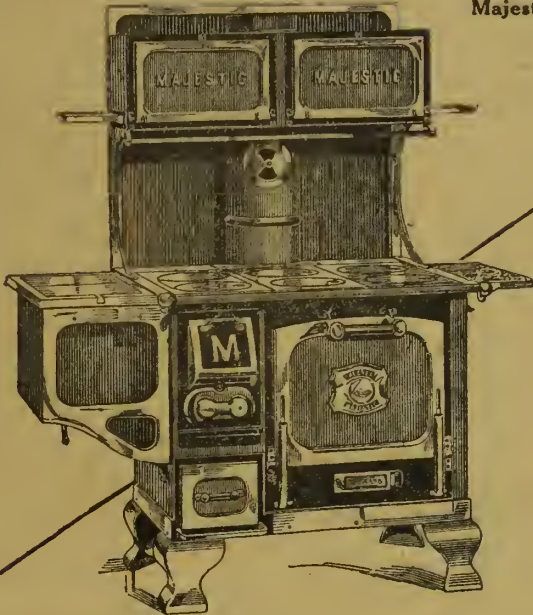
These ranges have long been renowned for their fuel-saving as well as their sure-baking qualities. Heat can be accurately controlled and utilized with utmost economy.

Moreover, Great Majestic ranges are easy to keep bright and sanitary.

All surfaces are perfectly smooth. The beauty of the burnished blue cooking tops is ever-lasting—an occasional rubbing-over with paraffine is all the care needed.

Great Majestic ranges are made in many regular and combination styles with or without legs. They are sold by leading retailers of ranges in practically every county in forty-two states.

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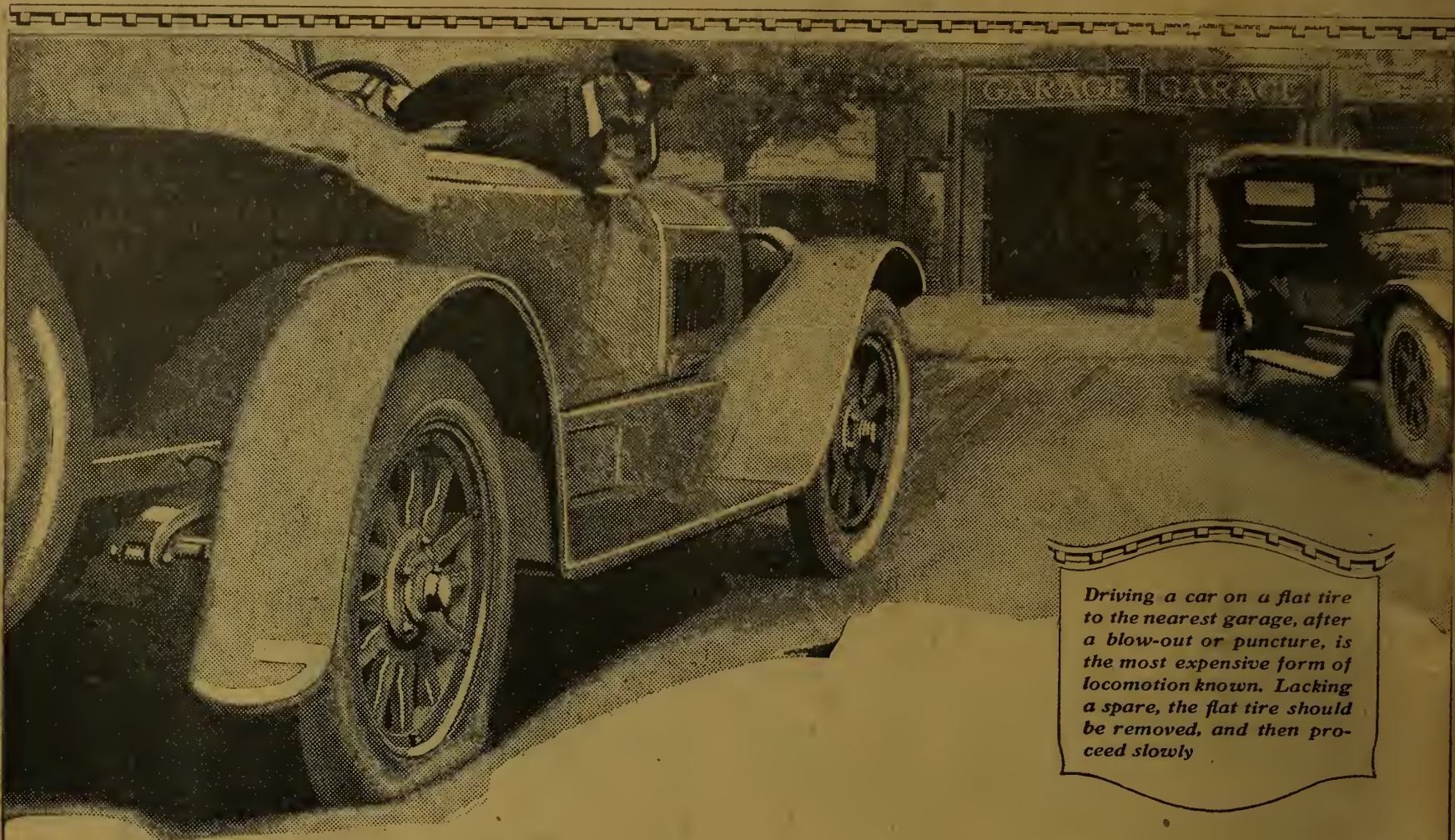
Ironing Comfort

You know you ought to help the good wife to keep cool these hot days by purchasing the Imperial Self-Heating Iron. No running back and forth from the stove with the Imperial, because it makes its own gas from ordinary gasoline. Absolutely safe and guaranteed.



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When will Tire Waste and Extravagant Tire Buying End



Driving a car on a flat tire to the nearest garage, after a blow-out or puncture, is the most expensive form of locomotion known. Lacking a spare, the flat tire should be removed, and then proceed slowly

THERE are signs that intelligent motorists are beginning to give more thought and care to the selection of their tires.

The trouble has been that the average car owner accepted his tire losses too *meekly*—as though nothing could be done about it.

As one new make of tire after another came on the market and old tires worked up new selling features and talking points, car owners no sooner got through buying *one make of tire* than they began to look around for a *different make*.

Ready to take advantage of all this shifting of trade was the irre-

sponsible dealer, with his make-shifts, his compromises, his plausible tire experiments.

His whole attitude was one of *secrecy* and *evasion*. He believed in feeling out each individual motorist's weakness and playing to that, rather than in *helping every motorist to know more about tires*.

* * *

The motorists of this country have stood for a lot. They are beginning to *do something about it*.

Going to the good dealer—the man who is winning a greater measure of public confidence all the time—the man who believes in this principle—

That the best introduction any tire can have is the truth.

Quality is the basis on which his business is founded. And all his efforts are directed towards encouraging a wider *appreciation of quality*.

He is the man whom the United States Rubber Company is backing with all of its resources.

With all of its great and wide and long and varied experience. Longer and more varied than that of any other rubber manufacturer.

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Go to the *good dealer* and get a *legitimate tire*.

For *you*, at least, tire waste will then end.

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CALIFORNIA CULTIVATOR

and *LIVESTOCK* and *DAIRY JOURNAL*

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

October 23, 1920

No. 17

Part of the Equipment Required by Rice Growers



A string of half a hundred rice binders in the Sutter Basin which gives an idea of the number of implements required on one ranch. Each of these is handled by three horses or by tractor as needs require. This has been a discouraging reason for rice producers. The price is now exceptionally low but California is still a great rice producing state. But it cannot continue as a rice producing state if Oriental grown rice is to be received at our ports as cordially as it has during the past few months. Photo by McCurry.

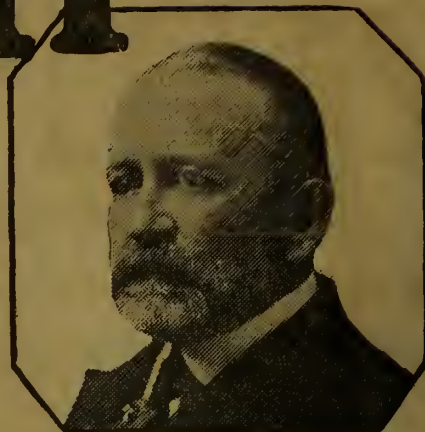


Depend on him

You "scratch" the SOIL to grow good crops!

Make your BALLOT count for California.

to fight for the rights of ranch and farm



New attacks are now launched in the East against the agricultural interests of California. Now, of all times, the experienced leadership in Washington of Senator Phelan is needed. His fighting record for California's rights calls for no idle promises or platform patter. Senator Phelan—none other—is best fitted to stop prosecution and persecution of your agricultural interests.

Senator Phelan worked and voted in the Senate for legislation favoring farmers' co-operative organizations. He is progressive in thought and action. In the face of a nation-wide demand, he secured priority orders for tin plate shipments to California to meet the home needs of our canneries. His vigorous protests challenged increase of freight rates on cantaloupes and vegetables. The Department of Agriculture acted on his demand to combat the boll weevil in Imperial Valley, and San Joaquin Valley cotton was saved from attack thereby.

Senator Phelan is a recognized champion of the Farm Loan Law. He secured for California a big share in that law's benefits. He is a strong advocate of a protective tariff on California rice and beans, as a barrier against Oriental importations. G. H. Hecke, Director of Agriculture for California, wrote to him:

"Your efforts in Congress are appreciated by those at home. I know those interests recognize the value of your efforts toward safe-guarding the agricultural development of the State."

Keep California White

Re-elect—

James D. Phelan
U. S. Senator

When huge losses threatened California fruit and vegetable growers because of car shortage, Senator Phelan won his fight for priority purchase of refrigerator cars in expending the Nation's \$75,000,000 appropriation for freight equipment. Thus, he curtailed heavy losses at home. He spoke and voted to raise the duty on lemons because he believed in protecting California growers against imported lemons.

Senator Phelan is a member of the Rice Growers Association and the California Prune and Apricot Growers, Inc. He supervises the operation of his own properties and thus has first-hand knowledge of agricultural problems. He will continue to urge reforestation of the Sierra Nevadas so as to provide for greater forest protection and better water storage.

Wylie M. Giffen, President of the California Associated Raisin Co., commended Senator Phelan for his stand in behalf of the raisin growers, as follows:

"Thank you for the splendid telegram that you sent to the Attorney General. It is one of the finest things published since this agitation came up. It stated the exact truth. The raisin growers of California are immensely pleased with your action. When I express to you my own thanks, I can also speak for the 12,000 raisin growers in this State."

James D. Phelan is determined to keep California white. Here is his challenge against the silent invasion:

"On behalf of California, I will invoke the right of eminent domain, if necessary, by winning an extension of the Durham Colonization Plan and thus restore the lands of California to white people."

You can't turn back Japanese immigration if you turn your back on James D. Phelan. Should you fail to re-elect him, the Nation will take it as a repudiation of California's demand for Japanese exclusion.

California Cultivator

Vol. LV, No. 17

Los Angeles, October 23, 1920

One Dollar Yearly

Southern California Fair

By Cultivator Staff



WITH around 10,000 folks marching through the gates daily the management of the Southern California fair just closed at Riverside feels highly gratified at its success. The opening day found a "norther" lending of its discomfort and affecting somewhat the attendance, but it passed within a day or two and practically the entire fair was given typical Riverside weather.

Plainly, the fair grounds are too small. Almost every inch was covered with tents filled with exhibits or with concessions. The association needs not only more room but rather better housing. The arts and sciences building is still the old time barn which was on the ranch prior to its use as fair grounds. This affords good shelter for the exhibits but is not particularly attractive. Agriculture and horticulture in one large tent and the mechanics and merchants' exhibit in another were well arranged, and the placing of the exhibits was generally praised. The track events were sufficient attraction to fill the grandstand every afternoon. The grandstand, by the way, has a largely increased capacity.

The livestock exhibit was declared by far the finest ever made in Riverside and equal to some of the largest events on the coast. This will be touched by Mr. Klein at greater length below.

The exhibit of trucks was, we believe, fully equal to that made at the state fair or at the recent tractor and implement show in Los Angeles. There were dozens of standard makes of trucks, and this was, perhaps, with good reason, for citrus producing California is using an immense number. The tractor show was most complete with nearly every tractor in use in California orchards and fields competing for the opportunity of showing itself in this center of fruit production.

* * *

Field and Orchard

During a quiet canvass of the agricultural pavilion to note the most prominent features of the many fine exhibits we found the following especially worthy of comment: The North Side community of Riverside had a display of Nancy Hall sweet potatoes that were so large, smooth and of such deep rich yellow that they appeared almost good enough to eat in a raw state. The Sweet Spanish onions also were of unusual high grade, while corn was a close third. A good general agricultural range finished filling a large booth in great variety.

Beaumont's major display was of apples, and some apples, too, the Delicious fully upholding its distinctive name. The people of that section are feeling quite jubilant at present, as they recently voted bonds to purchase their own water supply and service. Banning had a very showy box display of dried fruits and nuts, nine sorts of the former and nine varieties of almonds, nearly the entire exhibit coming from the ranch of M. French Gilman. Hemet showed a great variety of canned fruits and the greatest variety of exhibits from one farm, that of the Sierra Vista Ranch.

Corona, usually to the fore with lemon displays, forsook the beaten

track for once and exhibited an unusual variety of general farm products for an exclusive citrus section, the most varied yet shown by that community at any fair. The Morena-Armada district specialized on grains as, through lack of water development, orchards are few, though the citrus and other products shown were of high grade. An increasing supply of the "wet stuff" is being uncovered in the hills, and orchards and irrigated crops are being extended in area. Arlington Heights displayed general farm crops, but all classes of fruits were in great variety.

The San Diego County farm bureau had almost a full sized replica of the old Estudillo ranch house, Ramona's marriage place, that attracted a great deal of attention. The Armstrong Nurseries of Ontario had the only commercial plant exhibit. San Bernardino

bear, said bear allying himself with honey at every opportunity as his preferred food, a preference luckily almost unbearable in this region. The Nuevo farm center's display ranged from alfalfa to cotton and down the alphabet of farm products. Of the newer cotton districts Perris had the larger lot, for cotton acreage each year heavily increases and the town is rejoicing over the possession of a new gin (cotton gin). Los Angeles, "The Billion Dollar County," contented itself with a panoramic scene, bordered with statistical tables of its immense agricultural output. The cooperative canners of the California Growers Association had the largest exhibit of canned goods. Fresno County had a typical display, with which it wins so many blue ribbons one grand feature being the largest grape show at the fair—18 varieties



A Couple of Educational Scenes at Southern California Fair at Riverside

The picture on the left was taken at a quiet moment in one of the booths, of which there were a vast number on the grounds, where chances were sold to kiddies and others to secure one of the warm baby dolls. Unfortunately all of the places were not as quiet nor as lacking in business at the moment the photograph was taken. The picture on the right is a scene down implement, truck and tractor row. The showing of implements and farm power equipment was really remarkable, far more so than it is possible to show in a photograph, with the display arranged along one long avenue.

County had a display of which it may well be proud. There were no commercial packs, all home ranch exhibits, filling more space than any other in the pavilion. More than 200 varieties of fruits and vegetables were shown and 182 sorts of canned, glassed and package products. The "finish" was a pumpkin of more than 100 pounds weight.

Riverside County, being at home and the hostess, and showing so many district exhibits, had to be a little modest and content herself with a very full general display of farm and orchard products. Orange County had every possible product of the soil from cool cucumbers to pungent peppers, being noted at every fair for the great variety shown, ranging through the alphabet from avocados to yams.

The San Jacinto Valley had the most alfalfa and grasses of any district. One root of Sudan grass, from the J. C. Cramer ranch, was crowned with 212 stalks five feet high, believed to be the highest number yet found. The A. L. Ellis Orchard Company, Beaumont, had a large and varied display and the Sunsweet brand of canned fruits from San Jose made a neat and tasty exhibit.

The Riverside County Beekeepers Club had everything in the apiary and allied lines from a live bee to a live

in full sized boxes. Elsinore had a range of farm products from A to Z, alfalfa to zea (corn). The Jurupa farm center, including West Riverside and Glen Avon, had the full list of farm produce, finished with a floral display. The Palo Verde Valley booth was nearly all cotton, as might be expected, though other soil products were shown, and the Coachella Valley booth had still more of cotton, in many forms and conditions, topped by the world's most luscious dates. The state department of agriculture had a large and very attractive booth filled with material of practical educational interest and value. The finish of the huge tent was a radio station and camp of the federal air service co-operating with the forest service in the detection and suppression of forest fires.

* * *

THE FAIR A GREAT SUCCESS

By Jack Klein

With every building and tent crowded to overflowing with exhibits of all kinds and standing room only available for the spectators, the Southern California fair at Riverside has reached a point in its career where a general expansion in all departments has become necessary.

The steady growth of this fair has been very gratifying and this year,

under the directorship of J. E. Wherrel as president and W. W. Van Pelt as secretary, the jump has been phenomenal. Spectators present who have visited some of the district fairs of the East, as well as the various other fairs of California, compare it very favorably with any that have been held heretofore.

One of the big features of the Southern California fair has always been the community and county exhibits of grains and fruits. This year San Bernardino County, with an exhibit crowding 90 feet of space in the agricultural tent, repeated its success of last year and won the \$500 prize. Fresno County, with a beautiful exhibit of fruit and grapes, was second and Orange County third.

As usual, the Sherman Indian School was present with an exhibit showing its activities, and the wounded soldiers from the hospital at Arrowhead showed some remarkable examples of work done in connection with its work in vocational therapy.

In the livestock departments the remodeled and newly constructed sheds were overcrowded with the finest an-

imals of all breeds. Many of the prize winners from the Los Angeles Livestock Show and the state fair were present, and while the numbers were not so great as in the former shows, the quality was just as good. The results of weeks of training in the show ring were very noticeable in the handling of the animals. A great many exhibitors neglect to fit their animals for the early shows and the improvement in these herds showed very plainly.

Beef Classes

The beef cattle division was the smallest in the show, but some of the best ones were there. In the Aberdeen Angus class Congden and Battles of Yakima, Washington, repeated their success of the Los Angeles show and carried off most of the firsts. The Lilac Ranch of Escondido cut in on one or two places, and in the senior heifer calf class won first and second. It was the first appearance of Angus at the Southern California fair and much interest in the breed was shown by the spectators.

The Imperial Herefords, owned by Romie C. Jacks of the Salinas Valley, were the only representatives of that breed but they made most favorable showing. Woodford 34th was grand champion bull and Bocaldo Beauty, the

(Continued on Page 550.)

Agricultural News Notes of the Pacific Coast

Northern California

Heavy rainfall has delayed rice harvesting.

A milk testers' short course is being given at the university farm at Davis.

A boys Holstein calf club has been organized at Galt, Sacramento County.

Owing to warm weather in August the bean crop of Sutter County is very light.

Local farm centers of Sonoma County are discussing liming and cover crops.

The Almond Growers Exchange has named opening prices lower than last year's.

The Sperry Flour Company is continuing its "More and Better Wheat" campaign.

Prospects are for about 400 carloads of artichokes in the San Mateo-Ocean Shore district.

Sultan Mayflower, famous Short-horn bull at the University Farm at Davis, is dead.

The Tehama County farm bureau is planning a membership drive. The goal is 1,000 members.

The California Prune and Apricot Growers Inc. is forming a second pool of prunes of non-members.

California's wool clip is estimated at 12,000,000 pounds of which about only one-eighth has been sold.

The Sutter Basin Company has started work on the subdivision into small farms of a 50,000 acre tract.

Siskiyou County had an exceptionally large exhibit of livestock at the county fair held last week at Yreka.

The Sonoma County fair association is planning to hold auto races on the fair grounds at Sonoma Thanksgiving Day.

A silo building demonstration was recently given by the Sacramento County farm bureau on a dairy farm at Elk Grove.

Veterinary Inspector Hanna of the state division of animal industry is in Sonoma County looking into the sheep scab situation.

Glenn County is in need of a deputy county horticultural commissioner. Examination of candidates will soon be held at Orland.

Farmers of drainage district 833 in Butte County have decided to take up again the irrigation project which was turned down a year ago.

The university farm at Davis has recently shipped pure bred Toggenhurg goats to the agricultural experiment station of Hawaii.

Directors of the Sonoma County fair association have decided to increase capital stock to \$200,000 and to purchase fair grounds.

The experienced buttermakers' short course at the university farm, Davis, begins October 25. Buttermaking and ice cream making will be studied the first week.

Meetings of the Tehama County farm bureau will be held at Richfield October 18; Corning, 21; Los Molinos, 25; Proberta, 27; Liberal, 28; Manton, 29; Bowman, 30.

Experiments conducted for the past six years by the state college of agriculture indicate that five acre feet of irrigation water annually is sufficient for growing a rice crop on most of the Sacramento Valley soils.

Central California

The raisin output of this state this year is about 175,000 tons.

An unusually fine exhibit of figs was shown at the Madera County fair.

Today, October 16, Bakersfield is holding its first annual cotton carnival.

Canneries on Monterey Bay have been running at full capacity on a heavy catch of sardines.

The Tulare County board of supervisors has called for bids on the building of several mountain roads.

The Tulare Cooperative Poultry Association will pay its members five cents each for their September eggs.

Tulare County farm bureaus are protesting against another increase in power rates asked by the Edison Company.

The agricultural legislative committee has been asked to consider the need of a law to standardize organic fertilizers.

"Shipping of green grapes has had a depressing effect on the Eastern market," says Inspector Weishaar of the state department of agriculture.

Petition for the formation of the West Joaquin Irrigation District has been presented to the supervisors of Merced County and public hearing will soon be held.

Plans are being outlined for reclamation of a large tract on the Tejon Ranch south of Bakersfield by impounding waters of Tejon Creek and Lake Castaic.

Dr. W. L. Howard of the deciduous experiment station at Mountain View, Santa Clara County, announces that he has discovered a satisfactory treatment for brown rot of apricots.

The peach houses of the California Peach and Fig Growers are being cleared to handle the 1920 crop of figs. The association will not be ready to receive figs until November 15.

The Monterey County farm bureau has endorsed the Greenfield Irrigation district project. The Stanislaus County Farmers Union will hold its quarterly meeting at Oakdale October 29.

The California Farm Bureau Egg Laying Contest will open November 1. Entries are limited to 100 breeders. The contest is under direct supervision of the state college of agriculture.

A number of Stanislaus County fig growers attended a meeting recently held in Fresno by the California Peach and Fig Growers Association. The fig men are trying to find some way to hold their crops for better prices.

Stanislaus and Merced Counties are joining in a monster farm bureau picnic to be held October 25. Madera County may join in. It is planned to hold the picnic on the Merced River a few miles from the Delhi Colony.

Manager Niswander of the Peach and Fig Growers says that fig bread has been a winner on the local market and he anticipates that it will meet with wide demand. The association expects to begin manufacture of fig paste, jelly and other preparations.

At the last meeting of the Tulare County farm bureau a resolution was passed protesting to the state water commission against granting to Los Angeles power sites on rivers tributary to the San Joaquin. A delegation was present from the Kings County farm bureau.

Southern California

Palo Verde Valley of Riverside County has nine cotton gins in operation.

The Almond Growers Association at Banning estimates its crop at 150 tons.

Imperial Valley farmers are investigating possibilities of sugar beet culture.

The cracking plant of the Santa Ana Walnut Growers Association opened October 18.

There was a big showing of milk goats at the Southern California fair at Riverside.

San Diego County honey crop is estimated by the Beekeepers Exchange at 50 carloads.

Practically all sugar beet fields in the Talhert section of Orange County are now cleaned up.

Turkey buyers are busy in the Imperial Valley. They are offering 43 cents for toms and 41 for hens.

The Walnut Growers Association has named prices on the 1920 crop of 30 per cent below previous year's prices.

The Orange County farm bureau will hold its second annual institute at Anaheim the latter part of this month.

San Luis Obispo County will soon hold examination of candidates for deputy county horticultural commissioner.

The Irwindale Citrus Association, Los Angeles County, made net return for Navels to grower members of \$3.03 per box.

Experiments with sulphur added to the soil of wheat and bean fields in Ventura County are reported to have shown very satisfactory returns.

Secretary Webber of the California Walnut Growers Association says that the walnut crop this year will bring to growers from \$10,000,000 to \$13,000,000.

Beaumont, Riverside County, observed October 13 as Apple Day. There was a large exhibit of apples which were later taken to the Riverside fair.

The home demonstration department of the Riverside County farm bureau is giving daily demonstrations in poultry raising at the fair now being held at Riverside.

It is reported that Los Angeles banks have joined in an arrangement to finance the cotton crop of California, Arizona and New Mexico to the extent of \$2,500,000.

Local meetings of the Los Angeles County farm bureau will be held at Burbank, October 25; Little Rock, 26; Del Sur, 27; Owensmouth and Roosevelt 28; Tierra Bonita, 29.

Farmers of the Garden Grove district of Orange County have been very successful with their pimientos this season. It is estimated that they will ship out over 2,000,000 pounds.

Local meetings of Los Angeles County farm bureau will be held at Downey, Glendora and Hynes, November 1; Alhambra, Moneta, 2; Zelzah, 3; Lankershim, 4; Whittier, San Fernando, 5.

Prof. Bioletti of the state university will be in Riverside County the first two weeks in December arranging for demonstration vineyards in various sections. Demonstration vineyards are already established in Fresno, Kern and Merced Counties.

The Coast and General

Colorado is quarantining sections in the state which show infestation of alfalfa weevil.

An infestation of the European corn borer has been located in southern Ontario, Canada.

Continued dry weather on the Arizona ranges has seriously depleted supply of forage.

Farmers of Apache and Navajo Counties, Arizona, are harvesting a bumper crop of potatoes.

Roundups are in progress in the Nogales section of Arizona and condition of cattle is reported as generally good.

Round-ups are in progress over a considerable portion of Arizona and much of the beef is found to be in prime condition.

A government sale of town lots in the Parker, Arizona, town site is to be held November 6. The minimum price is ten dollars.

The Pacific International Livestock Show will be held in Portland, Oregon, November 15-19. Many entries have been made from California.

Sweet potatoes have been produced on the state hospital farm in the Salt River Valley of Arizona that weigh eight and a half pounds each.

Mesa, second largest town of the Salt River Valley of Arizona has a population of 3,036 according to announcement of the census bureau.

Cash prizes amounting to \$10,000 will be distributed at the International Grain and Hay Show to be held at Chicago, November 27-December 4.

The cotton crop of Egypt for 1920-21 is estimated at over a million bales. This is said to be the largest in the history of the Egyptian cotton industry.

Utah reports bright weather favorable to harvesting in sugar beet and potato fields but great need of rain in the grain country and on the stock ranges.

The conference of stockmen of the 12 Western states suggested by the California Cattlemen's Association will probably be held in Salt Lake City early in December.

A modern packing plant has been completed near Phoenix. Dr. S. A. King is the government inspector in charge. The capacity of the plant is 300 steers, 1,000 hogs and 1,000 sheep daily.

Several hundred tons of white beans stored at Ensenada, Lower California, because the owners refused to pay the export duty imposed by the Cantu government are said to be on their way by boat to San Diego.

Grapefruit shipments from the Salt River Valley began early in October and orange shipments are expected to begin about the middle of the month. The grapefruit crop is expected to be larger than last year, while the orange crop may be smaller, but the quality is expected to be considerably better. Both are earlier than common.

By a recent ruling of the Salt River Valley, Arizona, Water Users Association, waste and flood waters are to be sold to a large plantation, which depends upon pumped water. This will result in considerable revenue to the association from a source which hitherto has been wasted, and will also result in a saving to the owners of the plantation.

Good Fiction; Poor Horticulture

By C. B. Messenger



NCE upon a time, at least 30 years ago, out on the eastern edge of Los Angeles County, in the orchard of Jim Harvey where we were working at that time for a dollar six bits for ten hours, came an agent. He was selling an entirely new product. It was before the days of fumigation and it was during the days when spraying was being tested to the limit to handle some of California's worst pests. This agent had a remedy which would set aside all need for future spraying—simply bore to the heart of the tree, plug the hole with compound, at a cost, if we remember rightly, of two bits per tree—and presto! the sap of the tree would be poisoned and every living pest, whether of insect or fungus life, would be destroyed.

Jim Harvey has long since passed from earthly orchards, but we recall well the twinkle in his eye as he remarked: "Stranger, your remedy was tried out many years ago in my old back East country. It's a fake."

However, the agent insisted on educating as to the real value of "plugging" the tree with his compound: "You know it poisons the sap so that nothing whatever can live." Jim replied: "Yes, I suppose on the same principle you would give a dose of strychnine to a man who had lice on his head in order to kill the lice."

Many years later, in fact, only four or five years ago, the same method of control was revived in California, and this time in a more orderly way. It was reported from a professor in Stanford University that he had tried, not a compound, but simply cyanide of potassium, inserting in a hole bored to the heart of the tree. He had made careful observations for some months of the effect of this treatment and he felt certain beneficial results were observable. Fruit growers, as a rule, were skeptical, and since we have heard no further use of this suggestion from Stanford University we take it it has been abandoned entirely.

Now comes the Antipodes. The Fruit World of Australasia in its issue of May 1 announces: "Considerable interest has been aroused by announcement in the New South Wales press detailing the methods by which woolly aphis, black aphis, codlin moth, Indian wax scales and root borer have been eradicated by means of injecting a fluid into the sap of trees. The discoverer is Mr. L. J. Smith of West Maitland, N. S. W."

However, after describing one or two most successful tests the Fruit World adds: "While waiting for further tests growers will meantime continue with their good friend, the spray pump."

Also, from Tasmania the Fruit Grower comes to our desk in its issue of the same date as that of the Fruit World and rather cautiously gives out this information.

"Rather dubiously, we fancy, have most Tasmanian orchardists heard about the new idea for killing fruit tree pests by an injection method. The thing was mooted many years ago in Huon and after some rather worse than disappointing results was quite naturally rejected. But that is not to say there is nothing in the idea if a compound can be discovered innocuous to the trees while fatal to their unwelcome guests. The story of this latest discovery, though open to

the usually fatal objection of being much too good to be true, is really quite readable and even somewhat convincing, as lately given to readers of the reputable daily, the Sydney Morning Herald. Most certainly there is plenty of warrant seeking further information about the new system and the institution of scientifically planned trials among Tasmanian orchards upon infested trees. As these trials to be thoroughly convincing must be conducted in many localities and through more than one season, it might be unwise for fruit growers to all rush their spray pumps into the auction marts at once. What if, after a course of injections, the tree itself were to give out? What if the quality of the fruit were in some way seriously deteriorated by the poisonous state of the sap that nourished it? The paper referred to said:

"The greatest drawback to fruit growing is the ceaseless toll which insect pests impose upon the trees. Woolly aphis and codlin moth on the apple, black aphis, fruit fly and tip moth on the peaches, and scales—brown, olive, red, Indian wax and others—on the citrus, to mention but a few of the growers' numberless enemies, are an ever present reminder that only by eternal vigilance can the fruit be retained in a suitable condition for human use. For all these pests the spray pump and the fumigating tent are offered as means of eradication."

"By boring a hole, say, half an inch in diameter and three or four inches deep into the trunk of the infested tree and inserting a suitable quantity of a specific, which is not in itself a human poison, in 48 hours there are evidences that the sap, even to the farthest terminal tip, has been affected. In a few weeks the parasites are killed without apparently checking the health or bearing capacity of the tree. On the other hand, the evidence so far adduced indicates that in most cases the trees have made a marked advance in growth as compared with untreated ones, possibly due to the removal of the handicap of pests which have robbed them of their sap."

After giving the results of nominal experiments the Fruit Grower asks for caution, however, adds: "If even one-tenth of the probabilities are realized the investigation will be well worth while."

But will they? Why mutilate a tree?

Under the title, "How to Doctor a Sick Tree," the Literary Digest touches upon recent investigations in effort to control chestnut tree blight. Dr. Caroline Rumbold, pathologist of the United States bureau of plant industry, has been making investigations and has reported through the American Forest Magazine. This is liberally quoted by the Literary Digest.

"Where all conditions were right it was possible to destroy the bacteria," Dr. Rumbold reports.

Many holes were made through the bark, this necessarily underneath the solution, for if air enters it is found that the air bubbles collect and prevent the solution being absorbed. Dr. Rumbold proceeds to give historical data as to this method of disease control. She says:

"The usual method of combating tree diseases is through the external application of sprays and fertilizers or by cutting out and burning diseased parts or entire trees. Many parasitic fungi grow so deeply underneath the bark of a tree that any external treatment is ineffective. This is the case with chestnut blight, or the chestnut bark disease, as it is more properly called. . . . In 1911 Pennsylvania appointed a special commission to conduct scientific investigations to determine the cause of chestnut blight and at the same time immediately to attack the epidemic by every means that seemed to afford any possibility of checking or delaying it. In connection with other lines of experimental work carried on by this commission the writer was employed to investigate the possibility of controlling the disease by injecting chemical solutions into chestnut trees. In 1913 the Pennsylvania chestnut tree blight commission advised the governor to discontinue its work because the blight had advanced too far into the state to make control practicable with the appropriation available at that time. During the next two years the writer continued the injection experiments under the direction of the bureau of plant industry."

"The problem has been to find a chemical agent which would kill the fungus that causes the blight, when a solution was introduced into a tree. The first difficulty encountered was in getting the tree thoroughly injected with any kind of liquid. The sap of a tree does not circulate like the blood of an animal. The wood of a tree contains numerous vessels or tubelike cells through which the crude sap is conducted to the leaves to be manufactured into food which returns to the roots and other living parts through the inner bark. A substance in solution follows a vertical path up the tree through those vessels in the sap wood, that are close to the place of injection. It can also descend through those vessels, but in all of this there is lacking that persistent passing and return of a stream, such as the blood stream, which constantly bathes the cells of the animal body. This path in the tree through which the injected solution passes usually is but little wider than the hole through which it is injected. Besides this, the walls of the tubular cells act like blotting paper, with the result that the farther the solution passes from the point of injection the weaker it becomes. So in order to inject a tree evenly on all sides it is necessary to make a number of injections on different sides of the trunk and even on the limbs. This means that many quarts of a very dilute chemical solution must be put into a tree if the chemical is to reach all portions of the tree. Were one to use only a small amount of concentrated solution it would kill the cells of the tree near the injection hole and would not reach other parts. This is one of the reasons why boring a hole in the trunk and filling it with strong chemical in either solid or liquid form is not likely to benefit a tree."

"The idea of introducing chemical substances into plants is more than two centuries old. The first report on tree injection for purposes of medication was published by a Russian scientist in 1894. This was followed by scattered work in America, France, Germany and Russia. Some successful results were reported, but in the

main the effect of injected solutions was not beneficial or the results were inconclusive. The most practical method was contained in the Russian publications, and the Russian method of introducing solutions was used in the beginning of the chestnut experiments. Very soon, however, an easier and less expensive method was developed in which the apparatus could be quickly adjusted to the trunk and left for 12 hours or more without further attention. On small trees a glass container holding the solution to be injected was hung on a branch of the tree. The solution was led to the point of injection by a rubber tube in the end of which was a piece of small glass tubing which was inserted into the injection hole. The glass tube was held in place by means of a perforated rubber cork which in turn was pressed tightly against the tree trunk by a clamp, thus preventing leakage.

"It was found that all kinds of chemicals in solution could be introduced into the trunks, provided there was sufficient transpiration from the leaves to keep the sap moving. The transpiration was greatest in the case of chestnut trees when they were in full leaf and the day was sunshiny, dry, and a breeze was blowing. On cold, rainy days the trees took up very little of the injected solutions. The season of the year caused a great variation in the amount of solution absorbed by a tree and also as to the part of the tree where the injected chemical went. For instance, if a lithium solution was injected in the autumn when the nuts were ripening a large amount of lithium collected in the fruits and in the ends of the fruiting branches. In the early spring when the leaves were unfolding and growing the lithium spread through the tree and less of the chemical reached the leaves. In Pennsylvania June was the best month for injection so far as the rate of intake was concerned; then July, May, August, September, October and April. The rate of intake varied more in April, May and June than in the summer and autumn months. . . . The average amount of solution absorbed through a single injection hole by an orchard chestnut tree 15 feet high and with a wide, rounded top ranged from one-fourth pint per day in April to three-fifths pint per day in June. But there are records of three and nearly four quarts of solution passing through an injection hole one-fourth inch in diameter in 20 hours. Chemical solutions with very few exceptions were absorbed more readily than the pure water. Also the more concentrated the solutions of chemicals the more rapidly they were absorbed. In several cases lithium injected into the trunk could be detected ten hours later in the leaves of branches at the top of the tree. Fifty-six organic and inorganic substances in solution were injected. The trees used in the experiments were orchard trees, for the most part Paragon scions grafted on native chestnut stock, but some trees growing under forest conditions were also injected."

"The best results of these experiments indicate that there is a large field for further research on the possibility of finding a cure by the injection method for chestnut blight and similar parasitic fungi that grow beneath the bark of trees."

"The subject is intensely interesting and will undoubtedly be further explored in the future. In the meantime owners of chestnut and other valuable shade trees should know that itinerant 'tree doctors,' who claim wonderful curative powers for mysterious substances inserted into trees are not likely to have been successful in achieving that which years of careful scientific research have failed to produce. This statement is not intended to reflect on trained men who are conducting legitimate tree surgery operations, but is directed against those 'quacks' who prey on the ignorance of shade tree owners by selling worthless 'remedies' at fabulous prices. Such persons not only get their money through fraudulent representations but frequently cause death or serious injury to a valuable tree."

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EDITORIALETTES

We believe in the initiative and referendum. They offer opportunity to an intelligent electorate to determine its own manner of government. In California the system is being given a severe test. There are 20 measures before the voters for decision on Tuesday, November 2. Intelligent decision on these measures calls for weeks or months of study. The ten days intervening offer no fair opportunity. However, as yet, the text of the proposed amendments and statutes with arguments respecting the same is not in the hands of the voters.

This text fills nearly 60 pages of small type and the spare time offered most voters will not be sufficient to even read all these amendments. The Cultivator helps a bit by giving merely the titles and the exceedingly short statement exactly as it will appear on the ballot, excepting that the Yes and No blanks have been omitted. This may give advance information merely as to what is coming and enable the voter to decide which ones he will inform himself on as soon as the text of the amendments and proposed statutes is in his hand. These titles and the few words given are not sufficient for a clear understanding, for the information there to be found is altogether too fragmentary. For instance, Number 7, a quick reading of which, as it will appear on the ballot, will probably induce an affirmative vote. However, if one will note closely he may find "experimental, physiological investigation" may be construed so drastically that even experimental feeding of animals at the university farm may be prevented. At least this warning has been given by the University of California.

MANNER IN WHICH PROPOSED CONSTITUTIONAL AMENDMENTS AND OTHER MEASURES WILL BE DESIGNATED AND APPEAR ON THE BALLOT

1—ALIEN LAND LAW. Initiative act. Permits acquisition and transfer of real property by aliens eligible to citizenship, to same extent as citizens except as otherwise provided by law; permits other aliens, and companies, associations and corporations in which they hold majority interest, to acquire and transfer real property only as prescribed by treaty, but prohibiting appointment thereof as guardians of estates of minors consisting wholly or partially of real property or shares in such corporations; provides for escheats in certain cases; requires reports of property holdings to facilitate enforcement of act; prescribes penalties and repeals conflicting acts.

2—PROHIBITION ENFORCEMENT ACT. Submitted to electors by referendum. Defines intoxicating liquor as that containing over one-half of one per cent of alcohol; with certain exceptions relating to religious, medicinal and home use, prohibits the manufacture, possession, receiving, serving, gift and transportation thereof, and also the advertising and soliciting the sale thereof, for beverage purposes; declares nothing therein shall authorize anything prohibited by any act of Congress, nor limit the power of any city or county to prohibit the manufacture and sale of such liquor; regulates the dealing in intoxicating liquor for nonbeverage purposes; and prescribes penalties.

3—SALARIES OF JUSTICES. Initiative measure amending Section 17 of Article VI of Constitution. Increases the salary of each Justice of the Supreme Court from \$8,000 a year to \$10,000 a year, and of each Justice of the District Courts of Appeal from \$7,000 a year to \$9,000 a year.

4—INITIATIVE. Initiative measure amending Article IV, Section 1 of Constitution. Inserts proviso therein increasing the number of signatures of qualified electors necessary to initiative petition presented to Secretary of State under that section when such petition relates to assessment or collection of taxes, or provides for modification or repeal of this proviso; requires such number to be twenty-five per cent of all votes cast for all gubernatorial candidates at last preceding election at which Governor was elected, instead of eight per cent thereof as now required. Makes no other substantial change in section.

5—CHIROPRACTIC. Initiative act. Creates Board of Chiropractic Examiners appointed by Governor and paid from receipts under act; prescribes powers and duties thereof and prohibits practice of chiropractic without license therefrom; regulates issuance of such licenses; requires licensees to observe state and municipal regulations relating to control of contagious and infectious diseases and authorizes them to sign birth and death certificates and use natural agencies and manual and mechanical means and manipulations as auxiliaries in their practice; declares other methods of healing, and chiropractors licensed under other acts, not affected hereby; prescribes penalties and repeals all conflicting legislation.

6—PROHIBITING COMPULSORY VACCINATION. Initiative measure adding Section 15 to Article IX of Constitution. Declares that no form of vaccination, inoculation or other medication shall hereafter be made a condition for admission to or attendance in any public school, college, university or other educational institution in this state, or for the employment of any person in any public office; and that the provisions of this section shall not be controlled or limited by any other provision of the Constitution.

7—PROHIBITING VIVISECTION. Initiative act. Declares it unlawful to dissect, vivisection or torture any living person or living animal, or aid or abet therein for purpose of experimental physiological or experimental pathological investigation in or at any university, school, society, college, hospital, institution or other place within California; declares nothing in act shall prohibit the dissection or vivisection, or aiding or abetting therein, of any living person when done with latter's consent, or prohibit surgical operations upon or rendering medical aid in case of physical injury, deformity or sickness of any person or animal; provides penalties and repeals conflicting acts.

8—POISON ACT. Submitted to electors by referendum. Amends act regulating sale and use of poisons, exempting therefrom preparations of United States pharmacopoeia and national formulary and other established remedies, except paregoric which may be sold only upon physician's prescription.

9—HIGHWAY BONDS. Initiative measure adding Section 3 to Article XVI of Constitution. Creates State Highway Finance Board to serve without compensation. Directs cancellation of unsold forty thousand bonds authorized by Section 2 of same article; authorizes other bonds to same amount, to be issued as provided in said section, but at times and interest rate, not exceeding six per cent, determined by said board under then prevailing market conditions; makes provisions of said section otherwise govern said bonds and proceeds thereof. Beginning July 1, 1921, relieves counties from payments to state on account of highway construction.

10—CONSTITUTIONAL CONVENTION. Senate Constitutional Amendment 10 amending Section 2, Article XVIII of Constitution. Declares that Legislature, whenever recommended by two-thirds of each branch thereof and approved by majority at next general election, shall provide at next session for calling convention to frame new Constitution and for electing delegates thereto; prescribes number and qualifications of such delegates requires submission of such Constitution to people for approval at special election, authorizing such convention to submit alternative proposals. If this amendment is adopted requires that Legislature shall at next session enact all measures necessary to the holding of such convention.

11—ALIEN POLL TAX. Assembly Constitutional Amendment 13 amending Section 12, Article XIII of Constitution. Requires the Legislature to provide for the levy of an annual poll tax, and the collection thereof by assessors, of not less than four dollars on every alien male inhabitant of this state over twenty-one and under sixty years of age, except paupers, idiots and insane persons, such tax to be paid into county school fund in county where collected.

12—STATE UNIVERSITY TAX. Initiative measure adding Section 15 to Article XIII of Constitution. Levies ad valorem tax, for State University, of one and twentieth mills per dollar upon property taxable for general county purposes, collectible each year, beginning July 1, 1921, in manner required by laws in force November 7, 1910, for state and county taxes unless law hereafter otherwise provides. Requires payment thereof into "State University Fund" subject to draft by University Regents. Until such taxes become available continues provisions of Section 14, same article, giving State University appropriations preference over other governmental expenses.

13—COMMUNITY PROPERTY. Act submitted to electors by referendum. Amends Civil Code Sections 1401 and 1402, adding thereto Sections 1402a and 1271. Gives either spouse right to will half of community property to lineal descendants or other spouse, but not otherwise without latter's written consent. In absence of testamentary disposition vests entire community property in surviving spouse except any portion reserved by judicial decree for wife's support which, if not willed by her, vests in her heirs, excluding husband. Excludes half of community property from inheritance taxes and in computing administration fees.

14—INSURANCE ACT. Submitted to electors by referendum. Prohibits any subsidiary corporation, agent, or employee of, or person or corporation controlled by, any bank organized under laws of California or of any state in the United States, from acting as general agent or department manager of any insurance company transacting business in California.

15—IRRIGATION DISTRICT ACT. Submitted to electors by referendum. Amends sections 1, 2 and 9 of act approved March 31, 1897, as subsequently amended, providing for organization of irrigation districts. Permits organization of an irrigation district by majority vote of electors instead of by two-thirds vote thereof as now provided. Rearranges existing provisions relating to petition for formation of an irrigation district and duties of State Engineer and board of supervisors in connection therewith.

16—SCHOOL SYSTEM. Initiative measure amending Section 6, Article IX of Constitution. Adds kindergartens to public school system; requires addition to state school fund, and creation of state high school fund, from state revenues to provide elementary, secondary, and technical schools, respectively, with minimum of thirty dollars per pupil; requires county tax levies producing for elementary schools amount not less than state apportionment, and for secondary and technical schools amount at least twice state apportionment; requires school district tax levies for school purposes; applies state apportionment, and at least sixty per cent of county school taxes, to teachers' salaries exclusively.

17—ABSENT VOTERS. Assembly Constitutional Amendment 10 adding proviso to Section 1, Article II of Constitution. Authorizes legislative provision permitting registered voters, absent from their voting precincts at any primary or general election because of occupation requiring travel or military or naval service other than in United States regular army or navy, to vote in home precinct prior to election, or in any municipality within state on election day, and those in such service wherever in United States at least fifty thereof are stationed on election day; and provides for counting such votes by such methods as Legislature may prescribe.

18—EXEMPTING ORPHANAGES FROM TAXATION. Assembly Constitutional Amendment 40 adding Section 1 1/2 to Article XIII of Constitution. Exempts from taxation all buildings and so much real property connected therewith as may be required for the occupation of institutions sheltering more than twenty orphan or half-orphan children receiving state aid, but provides that no building, or real or personal property, so used which may be rented and the rent received by the owner thereof shall be exempt from taxation.

19—STATE AID TO INSTITUTIONS. Senate Constitutional Amendment 19. Amends Section 22 of Article IV of Constitution by adding thereto provisions authorizing Legislature to grant aid to institutions conducted for support and maintenance of children of a father who is incapacitated for gainful work by permanent physical disability or is suffering from tuberculosis in such a stage that he can not pursue a gainful occupation, and declaring that any county or municipality providing for support of such children shall receive same pro rata appropriations as are granted to such institutions.

20—LAND VALUES TAXATION. Initiative measure adding Section 15 to Article XIII of Constitution. Beginning January 1, 1921, exempts from taxation personal property, planted trees, vines and crops; improvements appertaining to land being taxed at not exceeding preceding year's amount until exempted January 1, 1923, and other county, municipal and district revenues collected from land values. Beginning January 1, 1924, requires all public revenues be raised by taxing land values exclusive of improvements, repealing Section 14 in same article. Declares war veteran, church and college exemptions, and privately owned public utilities using highways, unaffected hereby.

Again, other points worthy of most careful investigation are those in the proposed statutes which call for appropriation and others which call for reducing the taxing power of the state. If the voter is to prove himself worthy of making the fundamental law of the state he must take his pencil and figure a bit as to each measure as it stands alone and also all the measures as they are related to each other.

* * *

Law making is one big job. Let's be equal to it.

* * *

The fairs, implement and power shows which have been held this past season have made possible the beginnings of a liberal education as to labor saving abilities of farm power and improved implements. We have heard many a farmer express himself in effect that "I am done with farming excepting as the labor can be handled by my family or myself." The use of farm power may be made to take the place, in part at least, of some of the help which has been so inefficient during the last few months. To use this modern equipment calls for a knowledge of mechanics which few farmers possess unless they have natural inclination or else have taken opportunity to secure the necessary training. Sales agents have largely dropped their fool-proof-any-child-can-run-it line of talk. The need of a thorough understanding of the possibilities and the limitations of power and implements was never more apparent than today. Opportunity for this understanding is offered through practical observation, through the service departments of dealers, through correspondence courses and perhaps more satisfactorily through various schools. The wise farmer will avail himself so far as possible of these opportunities.

NO TAX ON SWEET CIDER

County Agent Fox of San Bernardino writes regarding the collection of war tax from farmers "who make their own cider and sell the same in open containers" in effect that such collection of tax may not be made under a ruling Mr. Fox has just received from the bureau of internal revenue of the treasury department. The ruling is signed by Alfred D. Van Buren and is:

"Any sweet cider containing less than one-half of one per cent of alcohol by volume, put up in closed containers for sale as a soft drink, is subject to sales tax of ten per cent of the sales price thereof, as provided by Section 628, Revenue Act of 1918. Such sweet cider may be sold as vinegar material without payment of the sales tax. Sweet cider direct from the press may be dispensed to customers by the glass or in other open containers without payment of sales tax, provided the cider is not mixed or compounded with any other ingredient for sale at the place of business or in proximity to such place of business."

DECIDUOUS FRUIT GROWERS DAY

By C. B. Messenger

THE success of California fruit growers as cooperators is proverbial. Not all efforts have been successful, but so many are really outstanding successes that it appears to be only necessary in California to have sufficient of a similar product, business leadership and business management.

One cooperative organization which has had several years experience and sent hundreds of cars of canned fruits overland has had but little attention from the public press because of the quietness with which it has brought its material together, canned and marketed it. This is the California Growers Association and it has canneries at Ontario, Hemet, Riverside, Elsinore and Fallbrook, with a total membership of 600.

All of these canneries are well equipped, that at Ontario being perhaps one of the very finest plants on the Pacific Coast. The work of the season is no sooner ended than the members of the association begin planning for a bigger and a better output another year. They realize that it is very probable California canning fruits will not realize the prices during the next four or five years they have since the war began. They also realize that a higher quality of fruit must be taken to the cannery in order to encour-

age a trade which may not be so keen as it has been in the past.

In order to encourage the growers in the reproduction of this grade of fruit the management has made it a habit to keep the membership fully informed. Social gatherings, picnics, etc., afford opportunity to disseminate this information to the members. One of these opportunities was given by the Riverside fair. In addition to the inspiration of the fair a call had been sent out for a gathering of deciduous fruit growers at Fairmount Park on Friday of fair week. Taking advantage of this invitation, the members of the association were urged to be present, and after a basket luncheon an informal conference was held on some of the problems of the associa-

tion. President Benton Ballou gave much satisfaction to the members in his report on some of the successes of the association. Joe Campbell, manager of the association, and Secretary J. O. Mills disclaimed talking ability. Plainly they have managing ability in large affairs, for the satisfaction expressed by members as to their conduct of the business was high tribute to them. Especially did they make appeal for delivery of the very highest quality of fruit.

To aid in this Prof. G. P. Weldon of the Ontario junior agricultural college gave a short talk and answered many queries as to necessity for spraying. No deciduous fruit is now successfully produced, at least not in a large commercial way, without use of the spray pump. There are both insect and fungous troubles calling for attention. Worse, they call for attention at particular moments, which necessitates the grower keeping before him at all times a calendar for spraying operations. Some of these pests, especially thrips, extend over such a long period that spraying becomes a serious problem for the grower who would make a profit from his orchard.

One instance was referred to where the blossoming period of a peach extended over a period of three months, beginning in January. To reach the thrips a spray is necessary while the trees are in bloom. Mr. Weldon felt sure that under such an aggravated case of extended blooming period continued spraying would be out of the question, but he did refer to cases where growers had delivered a fruit to the cannery termed "C" grade and at the same time a small proportion classed as "A" grade. The "A" grade brought \$130 per ton more than the "C" grade, or, in other words, the "C" grade sold at a loss while the "A" returned a handsome profit.

One of the newer pests of peaches is called peach scab, *Cladosporium carpophylium*. Fortunately, however, the spray which is effective on this pest is also effective on peach leaf curl. Mr. Weldon felt that peach leaf curl can best be handled by sprays while tree is dormant and that this spraying has often been delayed until too late, some growers believing that the work should be so timed as to just precede blooming. But last season he had excellent results in preventing leaf curl and other fungous troubles by spraying with lime-sulphur about the middle of January. If the spraying is not done during dormancy then a weak Bordeaux solution, 3-3-50, after tree is beginning to leaf out, will prove beneficial.

Dozens of questions were passed to Mr. Weldon and other speakers which brought out much of value to the attendants. One especially wished to know why the association could not be used to purchase such supplies as spray materials where the members were using them in such large quantities.

Dr. Whitten had been expected to be present and discuss effect of long pruning on fruit quality. His place was well filled by Farm Adviser R. W. Hodgson of Los Angeles County.

Mr. Hodgson gave a short review of the return of long pruning, many points regarding which have appeared in former Cultivators, but made it particularly striking by incidents where it was shown that fruits from long pruned trees were larger, better in appearance and quality, contained more sugar and solids and dried away at a much lower ratio than those of trees pruned severely which made heavy draft on the tree to reproduce new wood growth.

Mr. Hodgson touched incidentally on one point which the Cultivator has been urging for the past few months, and that was the necessity for fall irrigation. Until the leaves are nearly half grown, the blossoms, the setting of young fruit and other tree activities are made possible because of stored up starches of the preceding year's growth. If the tree is deprived of these stored foods the spring growth is defective and the quality and quantity of the fruit, and possibly the life of the tree, is in danger. No one yet knows the life history of little leaf, one of our serious pests, but it is fairly definitely established that orchards kept in good growing condition during the fall are in better shape to meet the strain of spring growth and there is less of little leaf in such orchards.

OXYGENIC

A New Discovery in Agricultural Field
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OXYGENIC is a chemical that acts as a cure for the blight, scale and other diseases of trees and plants. It is also a powerful insecticide.

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The blight is not caused by insects as many people believe, but by adverse atmospheric conditions. It always strikes the tree or plant at the top when the buds are swelling and the sap is in continual circulation within the body of the tree, or whatever form of vegetation is infected.

After a long series of experiments, we have discovered how to blot out this plague which is menacing the agricultural world.

The Remedy Lies in the Careful Application of OXYGENIC

This chemical can be used successfully for both trees and vegetables. In the case of fruit trees, the best results are obtained by spraying at the proper time and by sprinkling the ground for about five feet around the trunk.

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OXYGENIC is of vital interest to anyone who operates a farm or orchard, no matter how large or small it may be.

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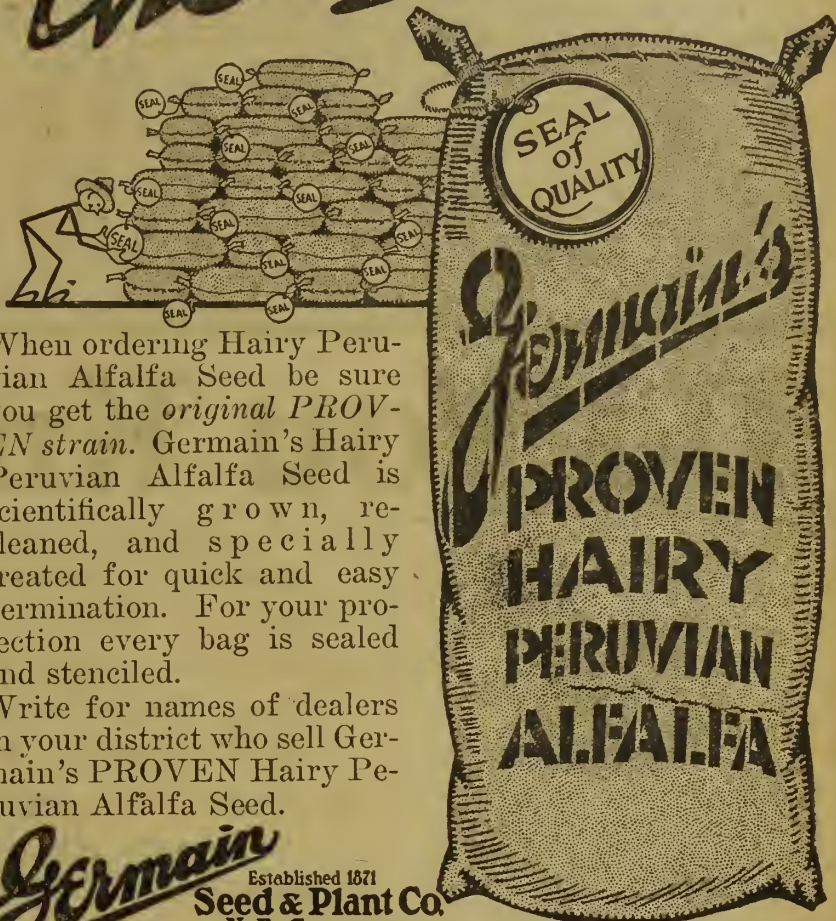
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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Strawberry Planting

"L. A. W." and "E. A. P." have asked what are the best strawberries for Southern California, how and when to plant, and the cost of stock, operations, etc., for the first year. An article covering these points fully appears elsewhere in this issue.

Grapes for San Fernando

I own a small tract where the Little Tehuenga crosses the state highway in San Fernando Valley. What kind of grapes do you recommend planting there? What do you know of the Gros Colman?—Subscriber, South Pasadena.

The Muscat and the Cornichon are known to do well in that district. Gros Colman is more popular in the north than in the south, but Prof. Bioletti of the state agricultural college recommends it for the south. At Hemet he was asked for a list of the best home grapes for the south end of the state and his answer may interest you:

"I will give you three grapes in three classes, a white, a red, and a black in early, medium and late season, though there is no good flavored late grape. Nearly all these are new ones, but the best, and all but Black Monnukka and California Concord, or Pierce, are to be short pruned. The early varieties are: Kahlali, Duke of Magenta, and Black Monnukka, being white, red and black as named, as are the other classes. For medium plant White Queen, Marvel of Malaga, and Black Muscat, or perhaps the Pierce

where the Black Muscat is not good. In late varieties use Verdal, Gros Guillaume, Gros Colman or even Black Cornichon. One may get not more than two each of the new varieties from university farm, Davis, for five cents a cutting so long as they last. Better allow them to substitute in case of shortage."

Blazing Star

What is the beautiful yellow flower which I send?—Subscriber, Moorpark.

This is the Blazing Star, *Mentzelia laevicaulis*, which grows in the dry washes in California.

Rough Skinned Oranges

Please advise me what to apply to my orange trees, whose fruits have a rough skin, something that will smoothen the skin.—Subscriber, Oroville.

It cannot be done. Fertilizer may be at fault, an excess of nitrogen—too much organic matter in the soil—but this is not probable. The theory has

been advanced that potash will smoothen the skin, but we have insufficient data from official sources to draw any definite conclusions. It is quite likely that you may have the Australian type of Navel. It may be that soil practice, fertilization, etc., is at fault. The question is so general, without statement of soil, care, etc., that no answer of close application can be made.—E. B.

Winter Vegetables

I would like to have a list of named varieties of the following vegetables for planting now to get crop for winter and early spring use. My rhubarb is going to seed. What shall I do for it?—Subscriber, Sherman.

Your list is included here, some both first and second choice: cabbage, Cannon Ball or Winningstadt, plants or seeds, latter ready by May; carrots, Oxheart or Half-long; beets, Crosby's Egyptian; parsnips, Hollow Crown or Guernsey; lettuce, Los Angeles Market; cauliflower, California Pearl or Dry Weather, preferably plants, as seeds sown now would bring flowering season into hot weather; spinach, Giant Amsterdam, Prickly Winter. As soon as flower stalks appear on rhubarb break or cut them out or they will exhaust the vitality of plants.—E. B.

Pruning Pears and Other Deciduous Trees

Where can I find authoritative information on how to prune pear, apple and peach trees a year old?—Subscriber.

Methods of pruning have been so radically changed in the past few years that it is rather hard to give reference to "authoritative" information. Pruning of the trees mentioned by the inquirer is done in California today usually by the long system. This has been touched upon in the columns of this paper several times and a good many details of the method have been given. In the issue of the Cultivator of June 5, 1920, is an article on the success of long pruning. By writing to the state university at Berkeley you may secure a bulletin on pruning which was issued by the agricultural college of the university in 1919. Bulletin No. 313, "Pruning Young Deciduous Fruit Trees," by Warren P. Tufts.

Getting Rid of Bermuda

I have an acre that I want to set out to fig cuttings in the spring. Part of it is covered with Bermuda grass. How can I get rid of it and not injure the land? What would be a good fertilizer to use on this land for fig cuttings?—Subscriber, Modesto.

The best method of getting rid of Bermuda is that of plowing and cultivation. This is a good time of the year to kill the stuff, as Bermuda does not like cold weather and is almost dormant these cool days, so that cuttings do not root so readily as in the warmer spring months. Bermuda is very easily eradicated by constant cultivation. Of course if one had begun earlier, before summer, by growing a clean culture crop, the problem of eradication would have solved itself. However, we think continuation of the plowing and winter cultivation will bring results, but if it does not, then the expense next summer of giving the clean culture crop could be met by planting beans or other cover crop which will give compensation and at the same time aid in eradicating the pest. Stable manure is your best fertilizer. However, until cuttings make material growth fertilizer should not be needed.

Poultry Queries

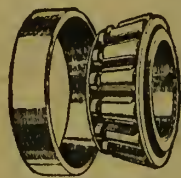
Conducted by J. A. Koethen

Roosts and Nests

I should like to copy the plan of No. 1 in the article on poultry houses in last week's issue of the Cultivator. Can you give me data in regard to nests and roosts?—Subscriber, Le-moore.

I have not the data for this particular house, but the arrangements are similar in all houses of this type. The roosts are built above a droppings board which fills the rear half of the house and is about three feet from

Do You Know—



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The use of Timken Tapered Roller Bearings at points of hard service in the great majority of automotive vehicles is proof of leadership established on the tapered principle of design, quality of manufacture, performance on the road, and service to the automotive industry.

that the freight carrying capacity of America's motor trucks is practically equal to that of all our railroads?

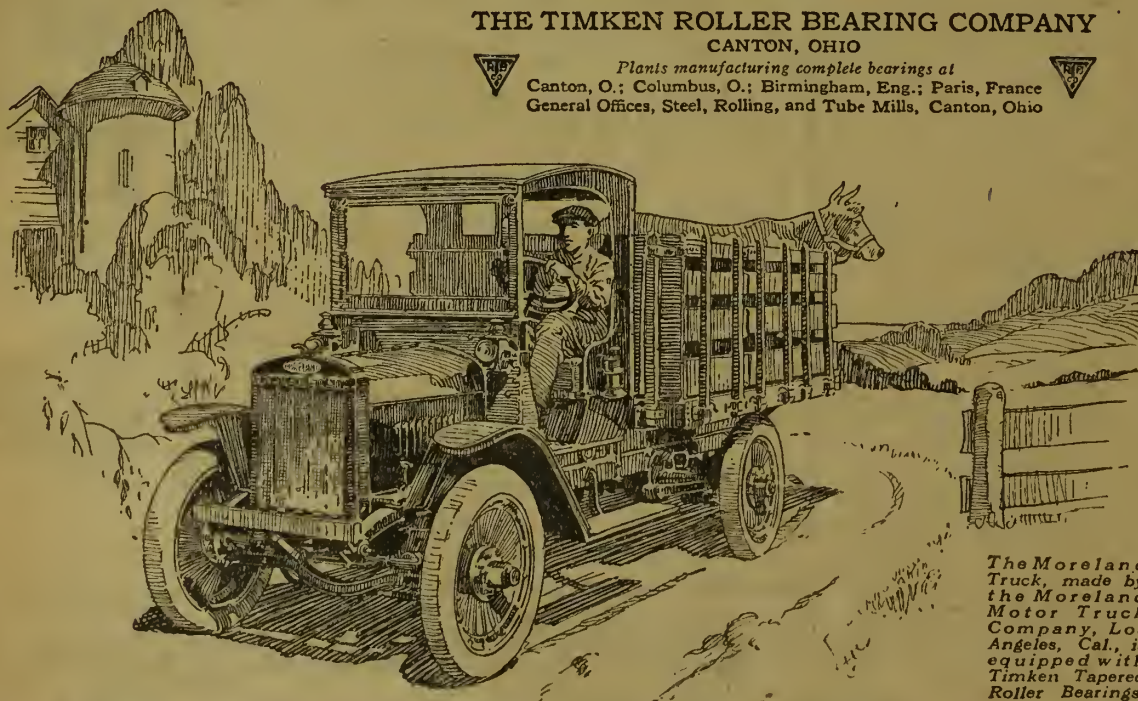
that the great majority of these trucks have Timken Tapered Roller Bearings at points of hard service?

that Timken Bearings are notable for their *compactness*; their *ability* to carry radial load, or thrust load, and all combinations of the two; and their *easy take-up* for wear?

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TIMKEN

TAPERED ROLLER BEARINGS

the floor. For a house 16 by 20, which is designed to hold from 100 to 125 Leghorn hens, five roosts should be sufficient. These are about 18 inches apart and are built into a frame which is suspended from the roof by wires so that the roosts nowhere touch the sides of the house. They should be about a foot above the droppings board and so arranged that the front of the frame can be easily lifted for cleaning. The roosts are built lengthwise of the house. The nests are built along the front of the house, with tight, sloping roofs to keep out the rain, and the mash trough or box is

beneath. Sometimes the nests are in two tiers, sometimes in only one. In some very good designs they are built under the droppings board. The mash box is protected by slats on each side between which the hens can just put their heads, and a narrow platform on each side gives them standing room.

Chickenpox

All my pullets have what I feel sure must be chickenpox. They have scabs on their combs, wattles, earlobes and around their eyes, but do not seem very sick, though they have stopped laying. Is there danger of contagion, and what can I do for them?—Subscriber, Madera.

Chickenpox, undoubtedly, and there is not much you can do after the whole flock has developed it. The only remedy I have heard of which will lighten an attack after it reaches this stage is sulphur. Take the common dry sulphur, "flour" or "flowers," whichever you choose to call it, and mix in the dry mash, making it about five per cent of the mash. That would be a pound of sulphur to 20 pounds of mash. Dr. N. W. Sanborn claims that this is a great help in bringing a flock through the chickenpox. Some authorities advise soaking of the scabs and touching the raw sore with cresol or some other disinfectant, but this is a good deal of work and seems cruel. Rubbing the scabs with carbolated vaseline may have some beneficial effect. At least, it is not much trouble. I do not believe there is much danger of contagion, still I should keep children away from the chickens. If you had vaccinated the flock as soon as you noticed the first case you could probably have kept the disease from spreading, but it is too late now.

Liver Trouble

Yesterday I noticed that one of my Barred Rock hens was sick. I killed her and found the liver greatly enlarged, whitish and very soft. I feed barley and table scraps and the hens run on alfalfa. What ailed this hen, and is it contagious?—Subscriber, Merced Falls.

Enlarged liver is not contagious, but any liver trouble indicates faulty feeding, which may produce the disease in other hens. Excessive feeding of barley, without another grain or mash, would seem to be the cause here. You should provide your hens with a laying mash immediately. Keep it before them constantly, and make the grain feeding very light for a while. A small handful for each hen daily is sufficient, and it should be not barley alone, but barley with another grain, preferably wheat. If possible, it would be well to leave barley out of the ration entirely for a time.

Sudden Deaths

I have recently lost five of my best pullets from something we are unable to diagnose. They are all in good condition, quite fat, in fact, all but one died on the nest, and all had diarrhoea, a white, sticky discharge. We think it is poison, but are unable to locate poison of any kind. Do you think alfalfa which sticks in the cutter and sours might do it? Is there a California weed which might grow in the alfalfa and cause poisoning? They die in about six or eight hours after being taken sick. I feed wet mash in the morning three quarts to 100 pullets with a teaspoonful of salt and one of pepper.—Subscriber, Glendale.

My first thought was that the salt in the mash had not been well mixed in and some of the hens got too much. My second is that there may be heated or moldy grain in the ration, possibly ground into the mash where it cannot be detected. I would give up the moist mash for a time and change to another dry mash. There has been considerable complaint this summer of the poor quality of beef scrap in some mashes. There is a possibility, of course, that these hens had cholera, which is more common than it used to be. The only cure our experiment station has found so far for cholera is a thorough cleaning up of the premises, with a tablet of bichloride of mercury (1/5000) in the drinking water. I doubt if the hens would eat a weed which was not wholesome or the soured alfalfa.

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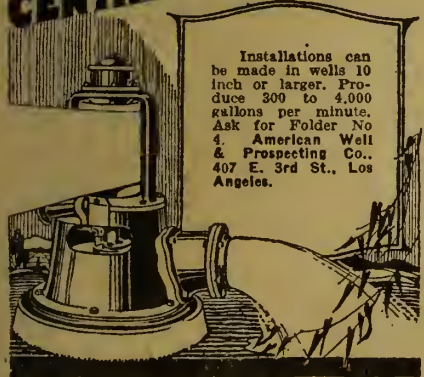
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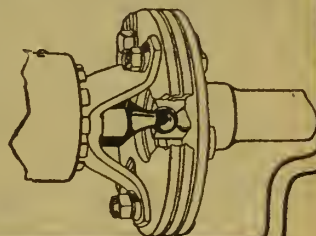
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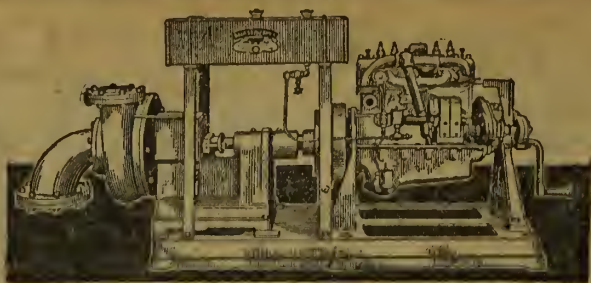
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are such as must appeal to those who wish to improve their circumstances and at the same time live in a country of delightful climate, magnificent scenery, varied resources, progressive people and abundance of opportunity for development. British Columbia—the playground of America—is already famous for the production of its orchards, fields and dairies. Now, is the time to learn about this wonderful Province and share in its possibilities. It's industrial life—mining, lumbering, fishing, manufacturing, transportation—assures a ready market at good prices for all the farmer can produce. Schools, churches, railways, roads, telephones, all the conveniences of an old land await you in this new Province of Opportunity and Success. For illustrated literature, maps, etc., write Department of Immigration, Ottawa, Can., or

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A GREAT HEREFORD EVENT

The big three day Hereford sale scheduled to be held at the state fair grounds, Sacramento, November 4, 5 and 6, is quite the most important event ever staged by the supporters of the Whitefaces, and is striking evidence of the progress being made in the beef cattle industry of California. The first sale will consist of a selected lot of high class Herefords from the leading herds of the West, and Secretary Bunting of the Pacific Coast Hereford Cattle Breeders Association, under whose auspices the sale is held, states that every effort has been made to assemble an offering up to the usual standard of the association sales. The annual association sales were originated by the members of that organization with two purposes in mind. First, it was felt, in view of the widespread interest being manifested in Herefords, that an opportunity should be provided men about to make a start in the business to select cattle in every way representative of the breed and of the sort that would tend to extend the popularity of the breed, and second, to provide an outlet for their own top productions. During the last few years many men have come to look forward with confidence to these sales.

The second day will be given over to the first individual offering made from the widely known Nevada Hereford Ranch, owned by J. H. Cazier and Sons, Wells, Nevada. This firm maintains one of the largest and most select herds owned in the West and their cattle have been prominent in the development of the cattle industry of the West and in Western show rings for many years. Much of their success has been due to the use of Harris Standard 2d, a Disturber-bred bull, whose get have come to be reckoned very highly. Something over a year ago Messrs. Cazier purchased the young bull, Beau Blanchard 76th, one of the best sons of the famous Beau Blanchard, for the record price of \$10,000. This bull was grand champion at the state fair and the Los Angeles Livestock Show and had the distinction of siring the junior champion bull at each of those shows. Incidentally, it is of interest to know that it was the Beau Blanchard 76th-Harris Standard 2d cross that produced the two junior champions.

The series of sales will be brought to a close on the sixth by the sale of 50 registered females from the Barn-grover and Wright herd. These breeders have prepared an offering that they are confident will prove attractive to the beginner for the reason that nearly the entire number they have listed were calved in 1917 and therefore have many years of usefulness before them. A feature of this last sale is the fact that, aside from being well bred, a number will carry the services of the richly bred Maples Lad 137th, a son of the noted sire Bonnie Brae 8th.

The three sales will be held under the management of the California Breeders Sales and Pedigree Company and C. L. Hughes, the sales manager, says that there is every reason to expect that the majority of Hereford breeders of the West will make Sacramento their headquarters during the three days. Col. Ben A. Rhoades of Los Angeles will be on the block in each of the sales.

NEWTON-CHRISTIENSEN HOG SALE

The Newton-Christiansen sale of registered Poland China breeding stock to be held at Pomona on Wednesday, October 27, is an event not to be overlooked by breeders and ranchers interested in keeping up the quality of hogs. Both herds are alike notable for their prolificacy and general utility. They have the blood of Model Major, Blue Valley Tecumseh, El Profito, President, King's Big Bone Leader, Long Smooth Jumbo and Tourist Master.

A SHIRT TALE

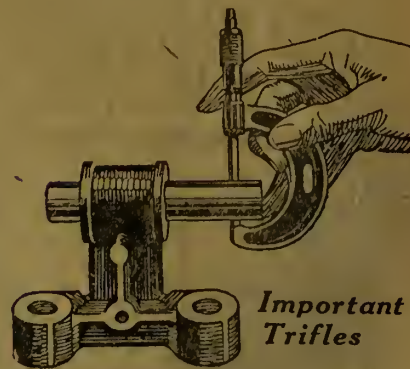
The scoutmaster was talking to one of his tenderfoot scouts. "Boy," he said, "you will have to make your own way in the world some day. Do you know the meaning of energy and enterprise?"

"No, sir," replied the tenderfoot. "I don't believe I do."

"Well," I tell you. One of the rich-

est men in the world came to this city without a shirt on his back, and now he has millions."

The tenderfoot looked puzzled. "Millions?" he repeated in wonderment. "Why, how many does he wear at a time?"—September Boys' Life.



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or Coal Oil will keep this
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of the purest, whitest and best light known to science. Nothing to wear out or get out of order. Simple. Safe. Absolute satisfaction guaranteed. Send for catalog showing lamps for every purpose; also special introductory offer and agency proposition. Write today.

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BREED SHORTHORNS!

A CALIFORNIA LIVESTOCK OPPORTUNITY

Right today there is no more attractive business for the ranchers of this state than the production of the right sort of registered SHORTHORNS. This state will always be an important cattle section. Changing conditions make it imperative for cattlemen to produce a more efficient type of cattle through the wider use of better blood. California breeders do not produce one-tenth the number of bulls required annually. The SHORTHORN breed acknowledges no superior on the range or in the feed lot. Hundreds of ranchers are turning to beef cattle because they can be produced without serious labor problems; require no expensive buildings; can be grown on cheap feeds and there is a wide and active demand for bulls at profitable prices.

The matter of success with Shorthorns will be measured by the kind of foundation material used. Men with foresight will take advantage of an opportunity to make selections from herds that have earned a reputation for cattle of reliable breeding and correct type. To such men there will be wide appeal in the

Caledonia Farms' Sale West Sacramento, Cal.

Friday, November 12

where 50 females, 15 of which sell with calves at foot, and all bred, and 10 high class young bulls have been listed. The females are well bred, a number are Scotch, of good ages and colors and are big, thick-fleshed, straight-backed, deep-chested, heavy-quartered, good milkers, that have been raised under natural conditions. Many of the cows have never tasted grain, yet are marvelously thick fleshed. All will carry the service of one or another of the three great bulls, IMP. CALEDONIA, GAINFORD MATCHLESS, and PINE GROVE KING. Several of the calves are sired by the same bulls. The 10 young bulls constitute one of the best lots ever offered in this state.

EVERY ANIMAL IS GUARANTEED
TO BE A BREEDER

EVERY ANIMAL SELLS
TUBERCULIN TESTED

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California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager,
Sacramento, Calif.

Auctioneer—
Col. Ben A. Rhoades, Los Angeles.

150 REGISTERED HEREFORDS AT PUBLIC AUCTION

State Fair Grounds - - Sacramento, Cal.

Thursday, November 4
45---Registered Herefords---45

This is the regular fall offering of picked tops, known more popularly as the "Association Sale." Hereford breeders all over the coast have been striving constantly toward the improvement of their herds, and it is only natural to expect advancement in quality in each succeeding sale of picked cattle.

Foremost herds of the west will be represented in this sale, and the buyer who wants to add one or more extra choice animals to his herd, or the beginner who wants to start with that sort of foundation will find ample range of selection in this offering.

Sale Under Auspices of

Pacific Coast Hereford Cattle Breeders Association

J. I. Cazler, Pres., Wells, Nevada. J. A. Bunting, Sec., Mission San Jose, Calif.

Friday, November 5

Nevada Hereford Ranch

WILL SELL

55---Registered Herefords---55

The owners will endeavor to make this, their first individual public sale offering, an important event in the breed's affairs in the west, and one from which buyers will secure foundation animals upon which many splendid herds will be built. The statement that this is a rare offering, both as to breeding and individual excellence, is entirely conservative, and buyers of the better sorts should certainly find in this list such individuals as will meet their every requirement.



Beau Blanchard 76th

HARRIS STANDARD 2ND is as well bred as any bull in the United States and is a wonderful sire. Our show herd for the past three years has shown some evidence of his breeding, ability, but to be fully appreciated you must see the uniform excellence of his entire get on our ranch. His get have never been defeated in the Get of Sire class.

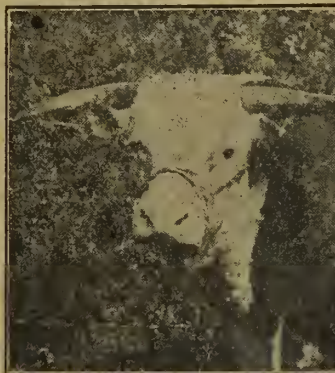
IN THIS SALE we will sell over 30 helpers sired by him, and many of them are safe in calf to BEAU BLANCHARD 76TH. Others will be bred to ABE MISCHIEF, by Mousel's mighty Beau Mischief, and to BOCALDO 21ST, by Hazlett's Grand Champion, Bocaído 6th.

The get of HARRIS STANDARD 2ND won first in Get of Sire class, adding another win to their string of undefeated showings.

At 1920 California State Fair, BEAU BLANCHARD 76TH was Grand Champion in the greatest Hereford Show ever staged at Sacramento, and his young son PILOT, out of a Harris Standard 2nd dam, owned and exhibited by Wm. Briggs, Dixon, was first junior bull calf and Junior Champion.

Four of the first calves sired by BEAU BLANCHARD 76TH, and out of Harris Standard 2nd dams, bid well for high honors in the individual classes, and in the Get of Sire group stood second only to the get of Harris Standard 2nd. Remember that in this sale a large number of HARRIS STANDARD 2ND heifers sell bred to BEAU BLANCHARD 76TH.

At Los Angeles Live Stock Show, just closed, Beau Blanchard 76th was again Grand Champion, and his junior calf son, BLANCHARD 1ST was Junior Champion and Reserve Grand Champion.



Harris Standard 2nd

Owners:

J. H. CAZIER & SONS CO., WELLS, NEVADA.

Otis Cordell, Herdsman

Saturday, November 6

50---Registered Herefords---50

This is an offering of most popular breeding, and should particularly attract buyers of heifers, although there will also be found an attractive number of young matrons in the list.

Among the females to be offered will be found

22 DAUGHTERS OF BOURBON COLUMBUS

eight of them out of daughters of Beau Tempter, and the balance out of daughters of Beau Donald, Rupert Donald, Perfect Donald, and Repeater 9th.

5 DAUGHTERS OF BEAU FAIRFAX

out of dams by Beau Tempter, Erling March On, Woodford 2nd, and Rupert Donald.

8 DAUGHTERS OF DON PERFECT 10TH

out of dams by Beau Donald, Beau Tempter, Paloma's Erling, and Don Brummel.

4 DAUGHTERS OF BEAU TEMPTER

out of dams by Rupert Donald and Columbus Busybody.

Other sires represented by daughters in the list are MR. PERFECTION, PATRICIAN 5TH, GAY LAD 31ST, DON BRUMMEL, REPEATER 9TH, and GAY LAD 44TH.

43 OF THE FEMALES

in this offering were calved in 1917 or later, a splendid group of young brood material that should make substantial profits for their new owners.

Many of these choice young females are well along with calf, others now being bred to

MAPLES LAD 137TH 788370

who is by Bonnie Brae 8th and out of a daughter of Domino, second dam by Beau Modest, he by Beau Brummel, third dam by Luminary a son of Lamplighter.

Owners:

BARNGROVER & WRIGHT,
SANTA CLARA, CALIF.

For catalog of any or all of these sales write

Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneer, Col. Ben A. Rhoades, Los Angeles

In the Ring, John A. Bunting, Mission San Jose

COMBINATION

Pre-Breeding Season Sale Poland Chinas

Sale to be held on Wednesday, October 27th, at LOOKINGBILL & VELZY'S UNION STOCK AND SALES YARDS, POMONA.

40 head of useful breeding stock from the well known herds of E. Avery Newton, Lankershim, and H. Christiansen, Arlington, will be catalogued for this occasion, and papers for every animal sold.

This sale is to be known distinctly as "a pre-breeding season sale." With three or four exceptions these sows and gilts are purposely sold open, that new owners may mate them in November to their own boars for March litters.

First Prize and Grand Champion Blood

Three crack herd boars, also a few young boars of early spring farrow, to be found in these offerings.
For catalogs address

E. AVERY NEWTON
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Arlington Station, Riverside

WEANED PIGS

*of either sex, September farrow at ten weeks
old for \$25.00 each. Sire, the Sequoian*

Z. M. Dickey

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King's Big Bone Leader

A Grand Champion, and Giant Bob 2nd, a son of last year's Grand Champion, are my herd boars. They are siring a high class of Poland Chinas. Write for prices and information.

Les McCracken

Ripon, Cal.

McCune's Quality Herd

of BIG TYPE POLAND CHINAS

The home of Edith Rose, King's Massive Orange and many other noted individuals.
A McCune bred Poland China is backed by many generations of the best breeding.

H. D. McCUNE,

Lemoore, Calif.

The Forrestview Herd of Polands

I am now located on my new place near Chico, where I am better prepared than ever to care for my customers. My intention is to raise more and better Poland Chinas in the future.

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Victory Bob, the Greatest Son

of the grand champion Giant Bob heads the Sunland herd of big type Poland Chinas. Some choice young animals of select breeding for sale at all times.

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Trewhitt's Big Type Polands

Are the result of careful mating and selection. Size and feeding quality have always been essential features in this herd. Write for prices and information. I can interest you.

W. D. Trewhitt

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Eastman Ranch Poland Chinas

Herd headed by Buster Bob, Grand Champion at the strong Los Angeles Live Stock Show. He is the largest junior yearling in the state and is siring some great pigs. Young stock for sale at all times. Satisfaction assured.

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where efficiency is our watchword and the production of extra heavy milking Holsteins and big type Poland Chinas is our specialty. A few choice animals of either breed or sex for sale at all times at reasonable figures. Write for information.

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Lower Land, Labor, Freight Rates, or Pay More for Cattle, or You Will Have No Cattle

By A. L. Spellmeyer



SOME examples of actual expense of grazing and feeding cattle may be interesting and refute the argument of some California men that yearlings must come down and feeder steers must come down. It is surprising how little general knowledge of cattle raising cost there is among cattlemen. The California man who buys yearlings wants them at a price the Arizona grower could not raise them for, and the Arizona grower wants to sell at a price the California man cannot pay.

I have been on both sides and have kept record of expense and have observed the financial end of hundreds of other ranches, watching their investment, their expense and their number of sales and prices, and stand ready to prove my assertions herein.

Example 1

200 mixed Hereford and Durham range cows, cost delivered California June, 1919, \$55 each, \$11,000.

18 months grazing at \$1 per month each, \$3,600.

18 months labor, grub and supplies, \$1,800.

Feeding hay and meal three months in winter, \$4,000.

Direction and supervision, \$1,000.

Shipping and driving to change range, \$600.

Interest 18 months at ten per cent per year on first cost, \$1,650.

Interest average expense outlay ten per cent, \$550.

Total cost, \$24,210.

Income from 70 per cent calf crop, 140 head at \$20, \$2,800; 20 head of cows lost in shipping, in calving, from disease and drouth and accident, therefore 140 calves from 180 cows, or only 40 dries, \$21,410.

180 cows costing after 18 months \$21,410, or \$120 per head.

Those cows will hardly bring \$60 each today, or \$60 actual loss.

Example 2

400 selected white face Hereford yearling steers, cost delivered July, 1919, California, \$50 per head, \$20,000. 18 months pasturage at \$1 per head per month, \$7,200.

18 months wages one man, grub and supplies, \$3,600.

Direction, driving, changing range, \$2,000.

Interest at 10 per cent for 18 months original investment, \$3,000.

Interest on average expense outlay, \$1,000.

Total cost, \$36,800.

Loss on these steers in 18 months was two per cent, or 8 head, no winter feeding, therefore the 392 steers cost as long twos \$93 plus. They would possibly bring \$80 each today, a loss of \$13 per head.

Example 3

103 Hereford steers costing July, 1919, delivered California as twos, \$70 per head, \$7,210.

Pasturage 12 months at \$1, \$1,236.

Labor, grub, supplies, 50 cents per month each, \$618.

Supervision and direction, etc., \$500.

Interest 12 months on cost and expense, ten per cent, \$846.

Total cost, \$10,410.

Loss was three steers, 100 steers sold at eight cents, 1,000 pounds; loss \$24.10 each, or \$241.

Typical Cost

Typical California cost of running one cow or one steer: Average 15 acres land costing \$10 per acre, or \$150. Average one man to 500 cattle, or \$1,200 per year. Average grub, supplies, etc., \$1,200 more. At seven per cent on \$150 land investment we have yearly pasturage, \$10.50; taxes, supervision, maintenance land and cattle, \$4; labor, grub, supplies, \$5; interest on cattle, purchase price or value, \$6; loss from drouth, disease or accident, \$1.50; incidentals and unlooked for items, \$1; total cost, \$28.

You will note on above yearly expense there is no winter feeding figured, also minimum loss and no range transfers.

As one prominent California man

figures he could not on present beef prices afford to accept yearling heifers free and grow calves to steers from them. If the range man gave him a yearling heifer and put it f. o. b. cars Arizona, the yearling heifer would cost him \$5 freight and feed to deliver and \$28 to run, or \$25 as minimum, standing \$30 as a two year old. He could expect 70 per cent of calves the second year and would then with 100 cows have 70 calves standing him \$5,800. It would cost him \$74 to keep the steers until they were three years old. If he sold veal calves at ten cents, or \$20, he would be losing each year, as the cows given to him as free heifers would only net \$14 on a \$25 minimum expense. Can this keep up, or do you believe that California land will go below \$10 per acre? Do you believe that we will have \$1 a day labor, one-half freight rates, four per cent money, half taxes, and all good grass years? If we don't, cattle will have to advance or men will have to quit raising them. Some cattle producer is giving four cents loss on every pound of meat you buy.

You hear the California men, competent feeders, range men, and bankers say in order to sell eight cent beef they must have \$20 yearlings in Arizona or on ranges, and six cent feeders. Is there a chance for it? The whole present economic structure would fall before such a balance could arrive, as certainly a fair return is necessary if the range men exist and survive.

The Arizona steer man buys yearling steers from ranges, and even today the lowest prices have been from \$30 to \$35 per head. The first cost is about \$2 to ship or locate them. Thereafter the Arizona steer man must figure forest fees and interest on land, running expense of labor, grub and supplies, taxes, a large horse ramada, all of which approximate with interest on cattle \$15 per head per year at least. The three year old therefore stands him a cost of \$67, but he cannot gather them all and a third go over to fours and fives so that even on 1920 yearling prices the 1922 threes steers will stand him \$70 or better. The average Arizona three sold does not weigh over 900 pounds. At eight cents there is a small profit, but at six cents, or \$54, this Arizona man would go out of business when his two years supply runs out, and that is what is happening now. Your chance for six cent feeders is a vain dream if cattle supply is to continue.

On the Arizona breeding cow all outfits figure three cattle yearlings up to five for each calf sold as a yearling. The most efficient outfit in Arizona would have to run 3,000 cattle to turn 1,000 yearlings. While the expense per head running is less, loss is considerable, as you can easily figure.

Land control or ownership, reservation fees and forest fees will cause a yearly grazing expense per head of \$3; labor, grub, taxes, loss, supplies, etc., \$5; delivery to railroad, \$1; bulls, interest, etc., \$5; total, \$14.

To be more explicit, \$14,000 a year is a small expense for one 1,000 head outfit, and the ordinary 1,000 head outfit in Arizona today on counted cattle and horses and holdings will represent an investment of \$75,000. As the interest rate there is 10 per cent now, it will be easily seen that figuring \$7,500 yearly for interest allows only \$6,500 for total expense, taxes, supplies and labor, and actually expense runs much higher.

The yearling output of this 1,000 head outfit could not be over 350 yearling steers and heifers, from which must be deducted 30 head for range loss maintenance, or 320 yearlings costing \$14,000, or \$43 plus. Estimating that the Arizona man only borrows a third of his ranch value and does not figure interest, it would make his cost \$9,000 on 320 yearling steers and heifers, or about \$30 to raise them, and that is what is happening. All years are not good years.

When the California man figures \$20 yearlings he must assume vast reductions in all items of life, labor, food, government and transportation, elimination of autos and all comforts or

luxuries. Cheaper production is possible if we step back and live as the Japanese, Hindus and Armenians live here in our midst, and if all the government and all the American people do likewise, but that is not in accord with progress or civilization.

Cost of the average \$35 Arizona yearling steer fattened from California grass in two years, f. o. b., \$35; freight, hay and shipper, \$6; expense two years California grazing, \$56; total, \$97.

The average steer of that kind, if it got fat, did not go over eight cents f. o. b. ranch corral last year, or \$88 if it weighed \$1,100 pounds. There is a possible but not probable profit on ten cent grass beef of \$13 for keeping a steer two years.

Feeders are making an average charge of 40 cents per day on 120 day feed. The ordinary feeder steer will cost eight cents and freight, or about nine cents delivered. It will cost \$48 or more to put on 300 pounds over the weight you bought, and such gain is improbable. Your \$90 steer stands \$138 plus \$3 interest, or \$141, and may weigh 1,300 pounds, but 1,200 is nearer the probability. It is going to cost you under ideal conditions, with all good luck, from 11 to 12 cents for that finished beef. Today men can't get over ten cents for beef top beef costing about two cents per pound to finish. And we are told such conditions can continue.

A change is due. The cow men of California are wasting time in figuring how cheap the Arizona yearling or feeder should be. The cow men of Arizona are wasting time in cussing the California buyers and other buyers' low prices. What they will have to do for their financial salvation is cooperate or die financially. As I have attempted to show you, it is not a question of a drop in values, and then a healthy condition after loss is absorbed. If it were the present cattlemen could go broke and others would replace them and cattle be raised. It is a question of the overhead, the daily, weekly and monthly expense that makes higher prices for cattle imperative if this nation is to continue to furnish its own supply.

While the terrible losses are prevalent to producers, the packers are paying big dividends and making healthy profits, the retailers are making enormous profit percentage. The very industry on which they depend for their existence is being sapped. How much longer can we stand this, even though we know national shortage is here in cattle, with cow slaughter merely a sop to hold off the accounting.

COW TESTING PAYS

"The dairyman who practices good business methods and continually weeds out the poor cows is sure to increase his profits," says E. M. Harmon of the University of Missouri college of agriculture. "This point is very well illustrated by the following results from a recent summary of some of the herds for the first and second year's work:

	Average Per Cow		
	Milk.	Fat.	Profit.
First year.....	5,543	253.7	\$109.95
Second year.....	5,730	279.7	121.87
Increase	193	26.0	11.92

"The records on these cows have very materially increased their sale value. In addition to that the owners have an accurate index on which cows to save and which heifer calves to raise. But even disregarding the above considerations, the increase of \$11.92 per cow is much more than the cost of the testing, showing clearly that the cow testing association is a profitable proposition.

"These men are gradually building their herds up to a point of real profit. They are doing it through their cow testing association. It isn't the man who makes one phenomenal record and then quits who establishes himself as a breeder. It is rather the man who can start in and gradually increase his production and profit year by year.

"No one knows what his individual cows are doing till he applies the Babcock test and the milk scales. Furthermore, it will pay every man to do this testing. We are continually meeting striking illustrations of this.

"Last fall J. D. Wilkerson bought a pure bred Holstein cow, Lady Korn-dyke Norma Pietertje, for \$265. And



OLYMPIC DAIRY FEED

Filling Up the Milk Cans

COWS don't give milk any more. They swap it for good care and nourishing feed. And when they get that, they more than balance accounts.

Whether it's a prize winning cow or the ordinary barnyard variety, rations containing the same tissue-building, milk-producing elements are her just due.

OLYMPIC Dairy Feed produces the highest milk flow over the longest possible period.

Scientifically formulated by practical feeders and especially trained chemists, OLYMPIC Dairy Feed increases butter fat and decreases production costs.

In this perfectly balanced dairy feed are the following ingredients: Ground Barley, Linseed Oil Meal, Cotton Seed Meal, Soybean Meal, Corn Feed Meal, Wheat Bran and Corn Gluten Feed. It's a combination that makes healthier cows and wealthier dairymen.

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We conduct sales of grade dairy cattle and general farm sales in all sections of California. Absolute satisfaction guaranteed. Forty years of successful sales in California and thousands of satisfied customers.

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Johnson's Defender Jr.

Heads my herd of carefully selected sows. He should be seen to be appreciated. I can spare a few choice females or young stock either sired by or mated to this good boar. You will be pleased with any purchase made from me.

H. C. WITHEROW Live Oak, Cal.

ROYAL I AM

JUNIOR CHAMPION AND RESERVE GRAND CHAMPION AT LOS ANGELES LIVESTOCK SHOW, 1920

Royal I Am is a son of Great I Am, grand champion Duroc boar of Nebraska, 1920. We are fortunate in being able to offer some choice fall Royal I Am pigs.

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LANCASTER, CALIFORNIA

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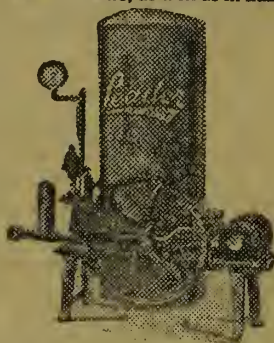
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IN the Ohio test, 1917, Jerseys did the same as they have done in every great test for economic production ever conducted. They produced more pounds of butterfat per thousand pounds of feed than any other breed.

Jerseys are the Economic Cows—The Profit Breed. The Jersey Information Bureau will gladly tell you more about Jerseys and the profits you can make with them. Address—

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Pilot Pigs at Auction

Kern Co. High School Boys' Ag. Club

Purebred Hog Sale

Oct. 30, 1920

30 Head—Selected, Big Boned Poland Chinas

Cholera Immune, Sired by or Bred to The Kern Co. Pilot

4 Sows—8 Gilts—18 Pilot Pigs

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Los Angeles, Cal.

that was all she was worth as an untested cow. When she freshened he put her in the cow testing association. In five months she produced over 500 pounds of butter and will undoubtedly break the cow testing association record in Missouri. If she continues as she has started, she should exceed the present state record in the official testing class. After five months on test Mr. Wilkerson sold this cow for \$1,000. The only thing that added the \$735 to the price was that she had a proven record of production. There are many other cows which would sell for much more if they had a record of production. No man with a dairy herd can afford not to test."

SOUTHERN CALIFORNIA FAIR

(Continued from Page 539.)

two year old cow, who was grand champion cow at the state fair, was again made grand champion over Ruth Domino, the yearling heifer, who won the honors at Los Angeles.

Shorthorns were shown by the San Julian Ranch of Lompoc, William Bond of Newark, F. L. Hall of Perris and F. C. Collier of Wildomar. The competition was keen, but the San Julian Ranch and Bond captured most of the firsts. Silver Cup, owned by the San Julian Ranch, was grand champion bull, and Bond's two year old cow, Ormondale Maid 2d, won the gold award in the female class.

Dairy

In the dairy cattle division the Holsteins were most numerous, but were pressed closely by the Jerseys and Guernseys.

(Comment on dairy classes is necessarily held over till next week.—Ed.)

Hogs

The hog show was the biggest ever at this fair, with the Durocs slightly in the lead in numbers with 140 head. The Diamond Bar Ranch, Falfadale Farm and J. C. Craig were the most successful contenders. E. H. Hughes, a recent addition to the animal husbandry staff at Davis, did the judging. Lucy Pathfinder, from the Diamond Bar, was senior and grand champion in the absence of her sister, Queen of Pathfinders. The Falfadale gilt, Miss Defender Sensation, which was first under six months sow pig at Sacramento, was junior champion. Her sire, Great Orion Sensation Junior, the great Falfadale Farm boar, was grand champion as at Los Angeles and Tulare. Cherry Pathfinder, shown by the Diamond Bar Ranch, was junior champion boar. The litter of junior pigs sired by Ace of Pathfinders, shown by the Diamond Bar, was the sensation of the show, as it has been everywhere else, and won first young herd, first young herd bred by exhibitor, first produce of dam and second get of sire.

The Berkshire class was full and the quality was excellent. A. B. Humphrey of Escalon was the most successful exhibitor, with the Italian Vineyard Co. of Guasti pressing him closely at all times. D. J. Bastanchury's aged boar, Royal Longfellow 5th, was easily first in his class, but was defeated for senior champion by Escalon Big Joe, who has been grand champion of most shows this fall. Humphrey's wonderful senior yearling sow, Grape Wild Rose 6th, was easily the grand champion over the junior champion, Castleview Royal Duchess, shown by the Italian Vineyard Co.

The Poland Chinas were not as numerous as at the other fairs, but they were of the finest type. Santa Anita Rancho won the most ribbons, principally with the aged sow, Miss Big Price, and the litter of junior pigs sired by Orange Boy. The sow was senior and grand champion and her litter won first young herd, first produce of dam, first get of sire, as well as many single prizes, including junior champion sow. Buster Bob, who belongs to the Eastman Ranch at San Fernando, was senior and grand champion boar, and Eastman's Korner, owned by the same exhibitor, was junior champion.

Honors in the Hampshire hogs were fought out by the Fairbanks Ranch of Redlands, Tarzana Ranch, Owensmouth and Arenal Ranch of Lankershim. The Fairbanks Ranch won grand champion boar with Harvey's Choice and Tarzana won grand champion sow with Florine 2d. Arenal

Ranch won many honors in the singles.

The three Eastern herds of Tamworths were present and split the honors amongst themselves.

The goat show, while not as big as the one last year, numbered 240 head and many of the finest ones in the country were exhibited.

Horses

The horse show was second only to the state fair and Los Angeles. Mrs. Anita M. Baldwin's complete string of Percherons and Mammoth Jacks were there and won many prizes in stiff competition. The Baldwin people are very much pleased at the showing made by the young animals raised on the ranch. The three year old Percheron stallion, Arsar, who was champion at Los Angeles, was again chosen, but the mare colt was defeated by Manon, who is classed as one of the greatest Percheron mares alive today. The San Julian Ranch showed a string of Clydesdales and won all honors.

Falfadale Farm of Perris won most of the ribbons in the grade farm horse division.

SECOND ANNUAL PORK DAY

Kings County again announces her annual pork day. This is the second and will be held at Hanford October 28. At last year's celebration everybody ate pork, talked pork, and 17 carloads of fat porkers were sold which brought \$40,000. Kings County farm bureaus will compete. Premiums offered on farm bureau center carlots are \$350, \$280, \$210, \$140 and \$70.

One hundred dollars will be given to the best ten hogs and other cash prizes running down to \$20 for the fifth best pen of hogs. The best hog draws \$25, with four other prizes running down to \$5. There will be 25 cash prizes for pig club members. Hogs will be judged from the killing out standpoint entirely.

The intention of this effort is to stimulate the production of more and better swine in California, and if this undertaking meets with the measure of success intended it will be the purpose to extend the scope of this work so as to include the entire state in a big annual swine show.

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One Pump Will
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Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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JERSEYS

Venadera Herd

REGISTER OF MERIT JERSEYS

Offers two cows six years old that have yearly Register of Merit records. Also a few bull calves sired by Jap's Perfection Owl.

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Young Jersey Bulls
For Sale

One at the head of your herd will pay big dividends on his cost. Write to

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Jersey Bull

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A fine straight one, bred right, priced right.

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Most Popular Dairy Breed

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Just the cattle for your Dairy Farm. Own Holsteins and be prosperous. Decide now and be contented.

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50—Selected Berkshire Gilts—50

Of accepted type, popular breeding, and from prolific strains, will be bred for spring farrow, registered and delivered prepaid to your nearest express station in lots of one or more at \$75.00 to \$110.00 each. Ages range from October, 1919, to February, 1920. All good thrifty gilts raised under practical farm conditions. Every animal cholera immune.

10—Berkshire Boars—10

Ready for immediate service. Ranging in age from October 24, 1919, to March, 1920. Good, strong, vigorous individuals. Best of blood lines and of present day type. Priced below their value for quick sale. \$75.00 each. Registered, crated and delivered, express paid, to your nearest station.

100—Berkshire Weanling Pigs—100

Special—For the next thirty days we will offer weanling pigs in quantities to suit, for breeders, farmers, or pig clubs. Choice stock, popular breeding, and all in thrifty condition. Priced to sell. Write today for full information. Order from this advertisement. Satisfaction guaranteed.

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Save Money—Buy
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Farmers, Miners, Builders—people in every kind of business are saving money buying used or renewed pipe from us. We sell every kind of pipe. Send in a list of your requirements today and get our prices. We have saved hundreds of people 33 1-3 to 50% on their pipe bills. Here's a partial list of some of the miles of pipe we have in stock for immediate delivery:

8000 ft. 6-Inch Riveted 16 gauge
700 ft. 8-Inch Riveted 16 gauge
5000 ft. 12-Inch Riveted 12 gauge
1000 ft. 18-Inch Riveted 12 gauge
800 ft. 22-Inch Riveted 14 gauge
300 ft. 24-Inch Riveted 14 gauge
500 ft. 36-Inch Riveted 12 gauge
10,000 feet light wrought iron 8-Inch pipe with cast iron collars.

All above pipe thoroughly overhauled and inspected and ready for immediate use.

We also have large quantity standard pipe and screw casing, pressure tested and guaranteed.

Don't delay—write for our prices on your pipe requirements today.

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Better service is assured by the advertiser if when writing you mention the California Cultivator.

—REGISTERED—FEDERAL TESTED—

150 HOLSTEINS 150

At Public Auction

State Fair Grounds, Sacramento, Cal.

November 10-11, 1920

Toyon Farm Association, with a total of 350 registered Holsteins on their farms, have decided to consolidate their Holsteins into one herd on the Brentwood Farm, and to conform with present accommodations on this farm, a reduction is necessary. This sale will be the means of making the reduction, and some of the most promising cows and heifers in the entire holdings will sell. The offering will include approximately

100 COWS
of Milking Age30 HEIFERS
Bred and Open25 BULLS
Mostly Ready for Service

The female offering contains the largest number of yearly record cows and heifers, daughters of yearly record dams, and females now on yearly test, that have yet appeared in a western sale. The breeding of the offering throughout is most substantial and popular, and the type of the offering is especially satisfactory. A general summary of some of the individuals and groups includes:

14 DAUGHTERS OF SIR BESSIE FOBES TRITOMIA, who is by Fobes Tritomia Mutual De Kol, and out of Jessie Fobes Bessie Homestead, 34.96 lbs. butter in 7 days as a 4-year-old, 932.74 lbs. butter in one year at mature age, and she topped the Detroit National Sale at \$4,600.00. These are out of dams with records up to over 27 lbs. butter in 7 days, and several out of dams now making good yearly records or with yearly records already completed.

2 DAUGHTERS OF SIR ORMSBY BURKE SEGIS, both with good records and out of good record dams.

A DAUGHTER of Johanna Colantha Champion, with 568.58 lbs. butter to her credit in 296 days as a 3-year-old.

A 24-POUND DAUGHTER of Sir Korndyke Hengerveld De Kol 31st, with 644.30 lbs. butter in one year as a 4-year-old.

A 23-POUND DAUGHTER of Sir Korndyke Hengerveld De Kol 11th, out of a 26.08-lb. 2-year-old daughter of a 31-lb. cow.

A 23-POUND COW with 627.50 lbs. butter in one year, again on yearly test with 443.19 lbs. butter to her credit in 198 days.

A 21-POUND DAUGHTER of Sir Fayne Concordia, with 630.75 lbs. butter in one year as a 4-year-old, out of a daughter of King Segis Pontiac.

A 24-POUND GRANDDAUGHTER of Colantha, Johanna Lad, with 628.66 lbs. butter in one year.

A 23-POUND granddaughter of King Walker, bred to Sir Aaggie Mead.

A 21-POUND 3-YEAR-OLD, with 760.01 lbs. butter in one year.

A 19-POUND 3-YEAR-OLD daughter of Sir Korndyke Pietertje Hartog, with 760 lbs. butter from over 18,000 lbs. milk in one year.

A 4-YEAR-OLD with 403.47 lbs. butter to her credit in 232 days, her dam a 26-lb. cow.

A 19-POUND 4-YEAR-OLD with 358.74 lbs. butter to her credit in 184 days, her dam a 20-lb. 4-year-old granddaughter of Pontiac Korndyke.

A 19-POUND 3-YEAR-OLD with 318.26 lbs. butter to her credit in 137 days. By a son of Vickery Vale, 937.35 lbs. butter from 21,550.6 lbs. milk in one year.

A 23-POUND DAUGHTER of Colantha, Johanna Champion out of a 20-lb. dam.

A 21-POUND granddaughter of Homestead Girl De Kol Sarcastic Lad, out of a 23-lb. dam.

A DAUGHTER of Sir Cascade Blossom Fayne, calving at 19 months has to her credit 379.92 lbs. butter in 244 days. Her dam now on yearly test with over 600 lbs. butter to her credit as a 3-year-old.

A GRANDDAUGHTER of Sir Korndyke Hengerveld De Kol, out of a dam that made 799.20 lbs. butter in one year as a 3-year-old.

A DAUGHTER of Sir Johanna Ruth Fayne, with 320.50 lbs. butter to her credit in 126 days, and bred to Sir Pietertje Ormsby Mercedes 43d.

A 2-YEAR-OLD daughter of Sir Johanna Ruth Fayne, bred to Sir Aaggie Mead.

9 DAUGHTERS OF MUTUAL FOBES LONGFIELD DE KOL, the famous bull whose long list of tested daughters includes several above 30 lbs. butter in 7 days. One of these is out of a 28-lb. dam, two out of 27-lb. dams, and the balance out of dams with records up to over 26 lbs. butter in 7 days.

4 DAUGHTERS OF SEGIS PONTIAC ACME, whose dam is an 885-lb. 4-year-old yearly record daughter of the former world's record cow Riverside Sadie De Kol Burke. All of these either have records or are now on yearly test, and all are out of good record dams.

A 2-YEAR-OLD daughter of Chima-cum Spring Farm King Pontiac, bred to Sir Aaggie Mead.

A 21-POUND 4-YEAR-OLD daughter of Sir Korndyke Ormsby De Kol, with 520.33 lbs. butter to her credit in 278 days.

A GRANDDAUGHTER of Sir Korndyke Hengerveld De Kol, out of a dam that made 704 lbs. butter in one year.

A DAUGHTER of North Star Happy Bonheur, out of a dam that made 799.20 lbs. butter in one year as a 3-year-old.

A 2-YEAR-OLD daughter of Sir Skylark Ormsby Hengerveld, now doing well on yearly test, and bred to Sir Pietertje Ormsby Canary.

A 643-POUND YEARLY RECORD COW, bred to Sir Pietertje Ormsby Canary.

A 17-POUND 2-YEAR-OLD granddaughter of Friend Hengerveld De Kol Butter Boy, out of a 644-lb. 4-year-old yearly record dam, second dam a 24-lb. 3-year-old, third dam a 22-lb. cow with 971.56 lbs. butter in one year.

DOZENS OF OTHERS with records up to over 24 lbs. butter in 7 days, many with yearly records or now on yearly test.

Females of Breeding Age in Calf to These Bulls:

SIR PIETERTJE ORMSBY MERCEDES 43D, whose sire is the world famous Sir Pietertje Ormsby Mercedes, and whose dam, Aaggie Wayne Peep, holds the world's record for butter production for five years, 4,992.03 lbs. from 110,706.5 lbs. milk.

SIR PIETERTJE ORMSBY CANARY, also by Sir Pietertje Ormsby Mercedes, and out of an 862.88-lb. record 3-year-old whose dam made 1,009.87 lbs. butter in one year.

SIR AAGGIE MEAD, by Sir Aaggie De Kol Acme, son of the world's record Aaggie Acme of Riverside 2nd, and out of the 1,215-lb. strictly official record cow Aralia De Kol Mead, her dam the 1,142-lb. former world's record cow Aralia De Kol.

What Are These Things Worth to You as a Buyer?

This is the first entire offering of Federal tested cattle ever made in California.

No animal of breeding age, except fresh cows, will be offered unless believed to be safe in calf.

Note again the splendid breeding of the five bulls whose service these females carry. Their offspring

HAZELWOOD DE KOL HENGVERVELD, by a proven grandson of Hengerveld De Kol and out of the 33.79-lb. cow Bonnie Lass Pauline, dam of Bonnie Ormsby Lass, Grand Champion cow at Panama-Pacific International Exposition.

NORTH STAR HAPPY BONHEUR, who is by Johanna Bonheur Champion a son of the famous show and breeding cow Johanna Bonheur, 890.84 lbs. butter in one year, and by a son of the former world's record cow Colantha 4th's Johanna, 1,247.83 lbs. butter in one year. His dam is a 30-lb. cow with 657.19 lbs. butter in 349 days, and she is by a son of the 813.30-lb. yearly record cow Lady Ormsby. This bull will be sold in the sale.

will carry splendid value anywhere.

There will not be more than three females in the sale with blemished udders.

Every animal positively guaranteed to be a breeder; every animal with individual Federal tuberculin test certificates, and sold subject to retest.

25 Bulls of Substantial Merit

While some of the bulls in this offering would not be out of place at the head of registered herds, yet it is hoped to make the offering of especial attraction to dairymen. A very large percentage of these bulls are ready for service, many of them out of dams now making splendid yearly records.

Plan now to attend this sale, for it is an offering of breeding animals combining qualities of type, production, breeding, and good health such as has seldom if ever been made in a sale of like magnitude in the west.

Owners: TOYON FARM ASSOCIATION

Farms: Los Altos, Brentwood

Office: Mills Building, San Francisco

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Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them.
Priced at a figure any farmer can afford and that will show him a profit.

Alex. Wilson, Supt., Guasti, Cal.



The boar is 60 per cent of the herd. We showed the 1st prize aged boar at the state fair this year. We have some of his pigs, both sexes, for sale at reasonable prices.

Poland China Pigs

Fine little Fellows that will surely please you

THERON J. SEITS

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Vaughn's Jones

Is a boar that is siring a high class of POLAND CHINAS

good enough for the most discriminating buyer. Come and investigate; can show you.

A. J. Van Cleef, Riverdale, Cal.

Tanning Skins



THE Cultivator is repeatedly requested to give information regarding tanning and curing skins for leather or to retain fur. Here are a number of methods which have been given in former Cultivators, now gathered together and repeated in these columns.

Rawhide

The skin should be salted on the flesh side as soon as the hide is cooled after removal, using ten to 12 pounds to a full sized skin. After salting roll the hide tightly. When ready for tanning place the hide in "soak," simply water to remove blood and salt. After being left in this 24 hours the tail and feet may be cut off and the flesh adhering scraped off, after which the hide should be placed in lime water. To make the lime solution take a bucket of water to each quart of lime. When thoroughly slaked and mixed, immerse the skin and allow to lie for

three to four days. Thoroughly wash in cold water. Scour and pound in good soapsuds for half an hour, after which take white vitriol, alum, and salt, one tablespoon each to skin, and dissolve in sufficient water to cover skin. Let remain in this 24 hours. Wring out and dry. To soften, oil with neat's foot oil or currier's oil. It may again be washed out in soapsuds and hung until nearly dry, when it should be worked and softened. If it should remain hard and refuse to soften, repeat the soaking in suds.

Government Formula for Leather

To each gallon of water add one quart of salt and one-half ounce of sulphuric acid. This mixture should not be kept in a metal container. Thin skins are tanned by this liquor in one day; heavy skins must remain in it longer. They may remain in it indefinitely without harm.

When removed from this liquor, the skins are washed several times in soapy water, wrung as dry as possible and rubbed on the flesh side with a cake of hard soap. They are then folded in the middle, hung lengthwise over a line, hair side out, and left to dry. When both surfaces are barely dry and the interior is still moist, they are laid over a smooth, rounded board and scraped on the flesh side with the edge of a worn flat file, or a similar blunt edged tool. In this way an inner layer is removed and the skins become nearly white in color. They are then stretched, rubbed and twisted until quite dry. If parts of a skin are still hard and stiff, the soaping, drying and stretching process is repeated until the entire skin is soft. Fresh butter or other animal fat, worked into skins while they are warm and then worked out again by a hasty bath in gasoline, increase their softness.

Curing Fur

To prepare skins for making ladies' boas, muffs, capes, etc., take the skin off whole by cutting from hock joint across vent to hock joint on opposite side and draw the pelt off over the head and cut off at a point back of ears; or, if the ears are to be left intact, let the cutting be done on a line extending around the point of nose. Then place the pelt on a stretcher made of half-inch board six inches wide at the top and four inches wide at the bottom. Cut this in two parts, from end to end. Stretch the pelt over the two, place edges together and rub salt over the pelt while fresh, and then sprinkle with powdered alum and allow it to dry. When about dry remove from boards and rub with the hands until dry. The skin will then be as soft and pliable as buckskin. Place your pelts where there will be plenty of fresh air, yet not in the direct rays of the sun.

Another method is to tack the skin taut, the fur side under, on a board, and after scraping the bits of fat off, moisten all over and sprinkle with a mixture of seven parts salt and one part pulverized alum. Leave about two days to absorb the salt. Then wet it again and repeat the mixture. About the fifth day wet it again and sprinkle with a mixture of two parts alum and one part salt. When dry it is cured and can be taken off the board. The above is from the "Belgian Hare Guide."

Here is another method of retaining fur:

There are numerous ways to tan a deerskin so the hair won't come out. Many processes will cause the tanned skin to be hard and stiff. The following will leave the hair on, yet the skin will be soft and pliable:

Soak skin in water over night, then remove all flesh and fat. Be careful not to cut the skin. Put good hard salt one-quarter pound, and alum three pounds, in sufficient water to cover the skin. Set over fire and boil until salt and alum are dissolved. When it cools to lukewarm put in the skin and soak five days. Work it well with a blunt stick once or twice every day. Then take it out and dry in a warm place in the shade. When apparently dry heat the tan water again and soak four days, working it every day as before. Then wash in several waters, soaking an hour or two in each. This is to get all the salt

IDEAL GREEN FEED SILO

*Why Experts Selected
the Ideal*

Anyone can manufacture a silo with the same lasting qualities as the Ideal Green Feed Silo.

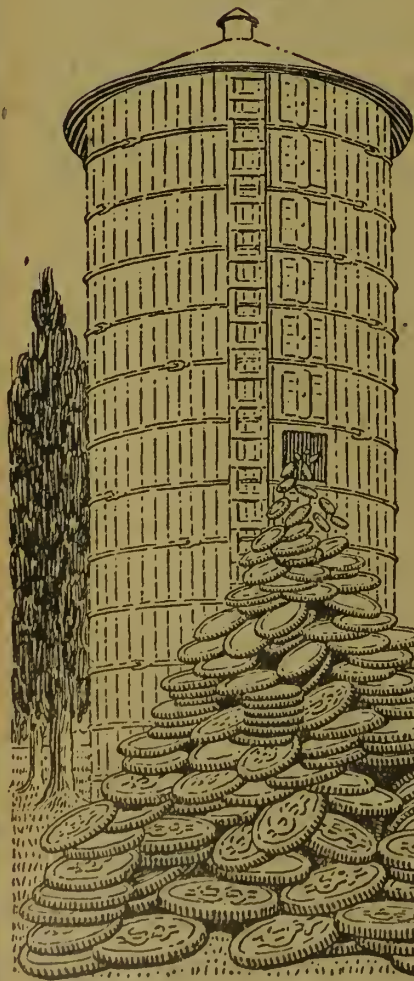
Anyone can build a Silo of long-lived California Redwood. Anyone can prevent leakage by using heavy refrigerator doors that provide a three-point contact on all four sides.

Anyone can employ the same methods of making the walls sturdy and air-tight.

But the fact remains, that in spite of the many silos being made, the University Farm at Davis selected IDEAL GREEN FEED SILOS.

The agricultural experts at Davis chose the Ideal because of its ability to yield returns long after it has paid for itself. Their judgment in selecting silos should be of advantage to you.

You will find it profitable to investigate the Ideal Green Feed Silo. The coupon will save writing a letter for complete information. Mail it right now.



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Please send me complete information regarding the Ideal Green Feed Silo.

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DISPERSAL SALE

67---REGISTERED
HOLSTEINS---67

Kounias Registered Stock Farms

On Waterford Road, 3 miles east of

MODESTO, CAL.

Thursday, October 28
at 10 A.M.

This is a complete dispersal of one of the largest and best herds in the San Joaquin Valley, including:

21 DAUGHTERS OF KING KORNDYKE HENGERVELD ORMSBY 7TH, who is by a son of Pieterje Mald Ormsby, and is by the same sire as Ormsby Korndyke Lad, the greatest living sire of 1,000 lbs. yearly record daughters.

9 DAUGHTERS OF KING KORNDYKE AAGGIE FAYNE, whose dam is a 33-lb. daughter of King Hengerveld Aaggie Fayne.

6 DAUGHTERS OF A 26-POUND COW that made 723.31 lbs. butter from 17764.3 lbs. milk in one year.

4 DAUGHTERS OF A 20-POUND COW that made 615.02 lbs. butter from 16764.4 lbs. milk in 327 days.

A 29.67 POUND 4-YEAR-OLD daughter of a 26-lb. cow that made 723.31 lbs. butter from 17764.3 lbs. milk in one year.

A LARGE NUMBER OF COWS AND HEIFERS WITH OFFICIAL RECORDS up to over 22 lbs. butter in 7 days.

A CONSIDERABLE NUMBER OF FRESH COWS AND HEAVY SPRINGERS.

ABOUT THIRTY COWS AND HEIFERS bred to King Korndyke Hengerveld Ormsby 7th, or to King Korndyke Aaggie Fayne.

Highly Bred Bulls

Practically every bull in the sale is out of a good record dam and bred in most popular blood lines, including:

KING KORNDYKE AAGGIE FAYNE, the herd sire, 3 years old, a good individual, almost white in color, out of a 33-lb. daughter of King Hengerveld Aaggie Fayne, and by a bull whose sire is a 30-lb. son of King Segis De Kol Korndyke.

A SON OF JUDGE SEGIS, the noted son of King Segis, heading the Hollywood herd in Washington, out of a 20-lb. 3-year-old daughter of a 31-lb. daughter of Sir Skylark Ormsby Hengerveld that made 1127.27 lbs. butter in one year.

A SON OF KING KORNDYKE HENGERVELD ORMSBY 7TH out of a 29.67 lb. 4-year-old whose 26-lb. dam made 723.31 lbs. butter from 17764.3 lbs. milk in one year.

A SON OF KING KORNDYKE HENGERVELD ORMSBY 7TH out of a dam that made 26.06 lbs. butter from 563.4 lbs. milk in 7 days.

A NUMBER OF YOUNG SONS of King Korndyke Hengerveld Ormsby 7th and King Korndyke Aaggie Fayne, out of dams up to over 22 lbs. butter in 7 days.

DAIRYMEN—Practically all of these bulls carry a combination of Ormsby breeding and the blood that produced De Kol of Valley Mead, foundation cow of one of the best Morris families. Both of these lines of breeding are famous not only for large production, but for good type as well.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL OVER SIX MONTHS OLD TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER, EXCEPT AS ANNOUNCED ON SALE DAY.

Catalog Free On Request

Management:

CALIFORNIA BREEDERS SALES AND PEDIGREE CO.

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Expert Livestock Auctioneer

Have now established permanent headquarters at new U. & I. Union Stockyards, midway between Modesto and Ontario. Can thus command a wider field of rich dairy and swine breeding interests. 25 yrs' experience buying and selling in the heart of the West. For real service write me at

539 E. Pasadena St., Pomona

Because of high prices for contract work Ventura County is doing much of its own road construction.

and alum out. As soon as the washing process is complete, beat with a wooden mallet until quite soft, then dry again in the shade. From time to time until it is thoroughly dry, rub and work the skin with the hands. This seems a good deal of work, but a soft pliable skin can only be obtained by work.—Rural New Yorker.

Still another: Remove all particles of flesh from the skin and give it a heavy dressing of equal parts of salt and powdered alum wet with a solution made from two parts of water to one part of liquid muriatic acid. Mix the salt and alum thoroughly dry. Mix the two parts of water to one of muriatic acid thoroughly, then use enough to wet the dry substance just enough to make it moist, but not really dripping. Having rubbed this into the flesh side of the skin, leaving a good dressing all over, fold the edges of skin in until they meet in the center all around. Do not let the dressing get on the fur side of the skin; when all folded right, roll up tight and place where it will be cool for 24 hours. At the end of this time examine the hide and, if dry, apply the dressing again and leave for 48 hours well rolled as before. At the expiration of the stated time unroll, stretch on a board and tack firmly in place. Melt up half a bar of soap and add to this as much cottonseed oil as it will absorb by shaking hard. Rub the skin soft as desired; apply this again and rub till about dry. This simple rule followed exactly should insure a smooth, soft, whitely tanned hide and one that should not be troubled with moths or insects. We have had a home tanned wolf skin rug in the house for many years and it has never had a moth in it and it is soft and pliable as need be. This is a simple and reliable rule and anybody need not fear to tan the skins he may get in hunting or trapping.

DISTRIBUTES EXCESS WOOL PROFITS

Distribution of excess profits made by dealers who handled the wool clip in 1918 under regulations of the war industries board is being made by the United States department of agriculture to some 100,000 wool growers, it was announced today. It is estimated by the bureau of markets, which has charge of making the refund from the dealers to the growers, that the total amount of such excess profits was more than \$1,000,000, of which approximately \$460,000 has been turned over to the bureau for distribution.

Some of the dealers who accumulated excess profits have failed or refused so far to refund the entire amount, and the bureau is at work auditing the books of some, interviewing others, and corresponding with still others, in order to bring about final settlements. The dealers who operated under permits signed agreements with the war industries board binding themselves to abide by the regulations of that board which specifically limited their profits.

BUTTERMAKERS SHORT COURSE

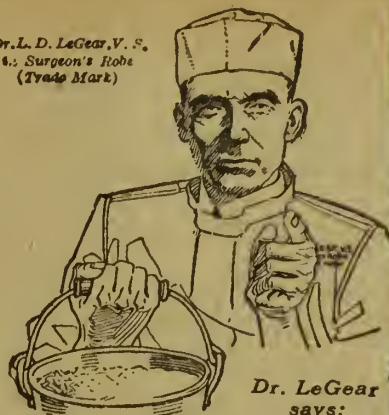
October 25 is the opening day for the experienced buttermakers' short course at Davis. Problems in butter-making and ice cream making will be studied the first week, while during the second week attention will be given to the newer tests for butter fat in butter, methylene blue reduction test for milk quality, instruction and practice in mechanical refrigeration, steam boilers, care of pasteurizers, ammonia, machines and the practical problems in dairy machines.

The course will be concluded with a meeting of the California Butter, Cheese and Ice Cream Makers Association and a two day survey of dairy manufacturing plants in the San Joaquin Valley.

Two weeks instruction in cheese making begins October 25, with attention given to the making of cheddar, California Granular, Jack, Neufchatel, cottage and other types of cheese meeting with favor in the California markets.

Muskrat hides, once worth about 36 cents, sold for \$7.50 at the St. Louis fur auction last spring, the United States department of agriculture reports in a recent circular. Fur buyers say the supply of muskrat skins is decreasing at the rate of 50 per cent a year.

Dr. L. D. LeGear, V. S.
S. Surgeon's Robe
(Trade Mark)



Dr. LeGear says:

"Turn more feed into pork"

"Hogs should produce one pound of pork for every five pounds of feed they eat that is equivalent to corn meal in fat, carbohydrates and albuminoid elements. If they do not, their digestive organs are not functioning properly and need regulating and help. And statistics prove that most hogs have ailments or worms in some degree."

Thousands of Hog raisers are making more money, raising bigger and fatter hogs by using Dr. LeGear's Hog Prescription. It helps to put and keep hogs in healthy, vigorous condition, sharpens the appetite, purifies the blood, tones up the system and aids in expelling worms. This is what Hugh Cox, Clifton Springs, N. Y., says:

"I bought a hog that was nothing but a shadow—weighed 90 lbs. After feeding Dr. LeGear's Hog Prescription for six weeks it

weighed 275 lbs. Have used a great many of Dr. LeGear's Remedies and have always found them highly satisfactory."

Dr. LeGear's Hog Prescription

Get a pail or package from your dealer today.
Dr. L. D. LeGear Medicine Co., St. Louis.



Husky, healthy Growing Pigs— the Result of



The high development of LACTIC ACID found in LACTEIN Condensed BUTTERMILK supplies the growing pigs with the nourishment and tonic which keeps the organs thoroughly cleansed and at the same time furnishes a most nutritive food for the rapid and strong development of the pig. LACTEIN Condensed BUTTERMILK is a proven producer in the feeding of pigs—and the demand shows how extensively it is used by the hog raisers.

Ask your dealer for
LACTEIN Condensed
BUTTERMILK TODAY
—You'll notice the benefit
and the results will
spell added profit.

LACTEIN CO.

Main Office and Factory
Modesto California



King Korndyke Pontiac Mead

Average of his Dam and Sire's Dam (Both Former World Record Holders)

At Average Age of 4 yrs. 2 mo. 10 dys.
Semi-Official, 365 Days

{ 1062.64 lb. Butter
21173.75 lb. Milk

Official Test, 7 Days

{ 31.91 lb. Butter
615.60 lb. Milk

His Sire—King Korndyke Pontiac 20th

His Dam—De Kol of Valley Mead 2d

Four of his seven nearest Dams have held World's Records

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3 miles south of Downey on Downey-Long Beach Boulevard

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POULTRY

Baby Chicks. We are now filling our hatcheries in preparation for the fall season which will soon be in full swing, and we can make deliveries in small or large quantities of the following kinds of chicks: R. I. Reds, Barred Rocks, White Leghorns, Brown Leghorns, Anconas, White Minorcas, Blue Andalusians and Mammoth Bronze baby turkeys. Send for our prices and place your order as early as possible so as to be sure of getting your chicks at the time you want them. Pioneer Incubators, Brooders, supplies, etc., always on hand. **PIONEER HATCHERY**, 320 So. Spring Street, Los Angeles, California.

S. C. White Leghorn Baby Chicks from heaviest laying (Hoganized) stock. Now booking orders for this fall and next spring delivery. Prices and terms gladly sent on request. Hatchers and shippers of Baby Chicks since 1898. **MUST HATCH INCUBATOR COMPANY**, 438 Seventh Street, Petaluma, California.

POULTRYMEN — POULTRYMEN Both the novice and the experienced poultrymen should have a copy of "Poultry for Profit" in order to prevent mistakes commonly made in the poultry business. This cloth bound book of 225 pages and 18 illustrations is written by Jean Koethen a practical authority on all branches of the poultry business in California. Price \$1.00 postpaid. Cultivator Publishing Co., 115½ N. Broadway, Los Angeles.

Raise Fall Chicks. They are profitable. Write for circular. See why they pay. Chicks every week. R. I. Red, Barred Rock, White Leghorn. Also booking for spring delivery. Order now and get a desirable date. Safe arrival guaranteed. **Stubbe Poultry Ranch and Hatchery**, P. O. Box 67, Palo Alto.

Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. **L. W. Clark**, 615 Main Street, Petaluma, California.

ATASCADERO POULTRY FARMS

ATASCADERO, CALIF.
S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write **Henry Miller, Supt.**

White Leghorn Baby Chix from heavy laying **HOGANIZED STOCK**. Safe arrival of full countable, strong chix guaranteed. Price list and interesting literature on application. The **Pioneer Hatchery**, 409 Sixth Street, Petaluma, California.

White Leghorn Baby Chicks from Extra heavy layers, all Hoganized. Booking orders NOW for fall and spring of 1921. Safe delivery guaranteed. **HICKS ELECTRIC HATCHERY**, R. 2, Box 22, Petaluma, California.

In order to prevent mistakes and disaster in the poultry business every poultry raiser should familiarize themselves with the rules and teachings of "Poultry for Profit." It contains 225 pages and 18 illustrations bound in cloth and sent postpaid for \$1.00. Cultivator Publishing Co., 115½ N. Broadway, Los Angeles.

Barred Plymouth Rocks—"Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. **Charles H. Vadden**, Los Gatos, California.

White Leghorns—Chicks and hatching eggs from the home of heavy layers. Spring orders being booked. Send for price list. **Curtis White Leghorn Ranch**, R. 1, Box 29, Gardena, California.

For Sale—Pullets \$2.00; Cockerels \$5.00 each and upward—White Leghorn, Brown Leghorn, White Rock. **Mahajo Farm**, P. O. Box 597, Sacramento, California.

Pure Bred White Plymouth Rock cockerels U. R. Fishel strain, splendid birds. Prices \$5 to \$15. **Mrs. B. M. Jesch**, Fallon, Nevada.

Eastman's Bred-to-Lay Hoganized and Transmuted Barred Rocks. **FALL CHICKS.** Fairmead Poultry Farm, Fairmead, California.

For Sale—125 of the best Blue Andalusians in America. Will sell all or part. **J. R. Huddleston**, 342 Edgeware Road, Los Angeles, California.

Day Old Chix—Barred Rocks, R. I. Reds, Buff Orpingtons, Black Minorcas, Anconas, Buff, White and Brown Leghorns. **Enoch Crews**, Seabright, California.

Thoroughbred Barred Plymouth Rocks. **Mrs. M. A. Warren**, 36 Little Delmas Ave., San Jose, California.

Baby Chicks from selected egg type S. C. White Leghorn hens. **Tupman Poultry Farm**, Box 7-C, Ceres, California.

Guineas, mated pigeons, canaries. Good stock. **E. A. McKinley**, Ukiah, California. **R. D.**, Box 91.

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Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. **The Kruckeberg Press**, 237-241 Court St., Los Angeles.

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Bourbon Red Turkeys, Buff Orpingtons. **The Ferris Ranch**, S. Reservoir, Pomona, California.

CATTLE

Auction Sale—At the W. C. Gallaher ranch, 7 miles southeast of Hanford, October 26, at 10 a. m. As we are dissolving partnership we will sell our entire dairy and farm equipment; 52 head young well-marked, large Holstein cows; heavy milkers and paying more per head than any other dairy in Kings County. 18 Holstein heifers, 9 months to 2½ years; 2 year old Holstein bull; 8 head work horses. If you wish to improve your herd, this is a rare opportunity to secure some of the best cows ever offered at auction in this county. **TERMS: CASH. Free Lunch at noon.** **W. C. Gallaher**, V. W. Spafford and Son, owners. **H. M. Bernstein**, Auctioneer, J. J. Hight, Clerk.

For Sale—Pure-bred Jersey Bull, 16 months old. Prize winner at two fairs this fall. \$250.00 if taken now. **W. H. ALFRED**, Loleta, Humboldt County, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. **T. T. Miller**, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. **A. W. Morris & Sons**, Woodland, California.

For Sale—Young Registered Jersey Bull. Great Grandson of Sophie 19th of Hood Farm. **J. W. RETALLACK**, ½ mile east of Keyes—on Keyes-Denair Highway.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. **John Lynch Ranch**, Box 321, Petaluma.

Registered Holstein Bulls, various ages at **Nuevo Stock Farm**, Wineville, California. **E. R. Stalder**, owner.

Registered Holstein Bulls of various ages for sale. **Millbrae Dairy**, Millbrae, California.

Reg. Shorthorns—Fair Oaks Ranch, Willets, California.

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Nursery Stock—We are offering commercial lots in Bartlett pear trees, at prices which will save you planters big money. Have apple, pears, prunes, cherry, strawberry, berries, etc. **NO AGENTS.** Try our Mail Order System. Send for Planters List. 30 years in business. **CARLTON NURSERY COMPANY**, CARLTON, OREGON.

50,000 Florida Sour Stock; 100,000 California Sweet Seedling orange seed-bed stock, 15 months old, suitable for fall planting. It will pay you to plant this fall. **SOUTHLAND NURSERIES**, 1941 East Colorado Street, Pasadena, California. Phone Colorado 6352.

For Sale—Placencia Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. **Ketscher's Nursery**, 1101 E. 4th St., Santa Ana, California. Phone 572WK.

Kadota and San Pedro Figs—Two promising early money makers for Southern California and other parts of the state. Write for particulars. **W. T. Kirkman, Sr.**, 1075 Topeka Street, Pasadena, California.

For Sale—A few thousand Peach and Plum trees. Write for prices, grade and varieties. **Imperial Valley Nursery and Seed House**, El Centro, California.

TREES—TREES—ALFALFA SEED Etc. Full stock—best varieties, now. Write **J. L. LAWSON**, San Jose, California.

Northern Black Walnut Trees for sale—from 18 inches to three feet. In any quantities. **F. A. Cody**, Anderson, Shasta County, California.

For Sale—Wonderful Pomegranate, French Prune Trees, Rooted Grape Vines. **W. M. Burton Nursery**, Box 43, Porterville.

Citrus Nurseries, **Murphy Oil Company**, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—Three thousand Mission and Manzanilla olive trees. **York Nurseries**, Highland, California.

For Sale—All kinds of fruit trees, grape vines, etc. **Burke's Nursery**, Lodi, California.

Grape Vines, citrus seed bed stock. Navel orange trees. **L. A. Tuttle**, R. 2, Pasadena.

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Shorthorn Cattle, **Shropshire Sheep**, **Berkshire Hogs**, **Shetland Ponies**, **Bronze Turkeys**, **White Plymouth Rocks**. Stock for sale at all times. **W. P. Dwyer** and **W. S. Guilford**, Box C, Butte City, Glenn County, California.

Duroc Hogs and **Shropshire Sheep**. Pure bred stock for sale at all times. **J. J. Prendergast**, Redlands.

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One ply \$1.50, 2 ply \$2.00, 3 ply \$2.50 complete with fixtures. Rubber roof paint 50¢ per gallon in 5 gal. lots.

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Pedigreed Flemish Giants—Also Utility stock. No fancy prices. **MAUD BEECHING**, 157½ W. 45th Street, Los Angeles, California.

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For Lease—Model poultry ranch forty miles from San Diego—Five laying houses—colony houses for 4,000 chickens. Jubilee incubators installed with capacity for 5,000 eggs—Kresky brooders complete equipment. Two five room cottages, with water and electricity. Twenty acres for greens or privilege of renting additional farm land. **C. V. Hall**, 2131 Ocean View Ave., Los Angeles.

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Orland, California.

BRED GILTS FOR SALE.

The Only Herd of English Berkshires in the west. Bigger, better, stronger litters. More pounds of meat for less feed. Weanling pig \$35. Satisfaction guaranteed or money refunded at once.

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703 Market St., San Francisco
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Grape Wild Farm—Berkshires, Guernseys. Big Type Berkshire Boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion. **A. B. Humphrey**, Prop., Escalon, California.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. **Calac Orchards**, Martinez, California.

Real Good Berkshires, cholera immune. **Frank B. Anderson**, Box 724, Sacramento, California.

DUROC-JERSEYS

Durocs—March, April and May farrow, the large and smooth kind. Boars and gilts by Orion's Johnson Defender. You'll do and Gano families. Write for prices and description, or write just what you want. If I haven't it will tell you. Every pig sold must be right or no sale. **Mayflower Thoroughbred Stock Farm**, E. Bakersfield, California. **John Kincaid**, Prop.

Lamb's Durocs—Seven good sows with litters, twenty open gilts ready to breed, weaned pigs, two good boars. All of best blood lines. Priced right to close out the herd. Satisfaction guaranteed. **Elmer Lamb**, Ceres, California.

The Home of the Durocs—The blood of Giant Wonder, Big Model, Orion King Gano, Top Sensation 1st, and Great Model. At head of herd is Col. Great Wonder I Am. Maxwell & Penfield, Lankershim, California.

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. **Harvey M. Berglund**, Dixon, California.

Big Type Durocs at **Keystone Ranch** by Top Sensation 1st, May Rose King, Winsor's Giant Orion, Choice March boars and gilts for sale. **E. F. Myers**, Lankershim.

Bred Sows and Gilts and young stock. Pathfinder and Great Wonder I Am breeding. Monthly payments if you wish. **Derryfield Farm**, Capital National Bank Building, Sacramento.

Duroc Boars for Sale—Two March boars sired by Top Orion, Dam, June, Grand-sire, Great Wonder I Am, C. Irish, Norwalk, California.

Boyanna Big Type Durocs—Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. **J. Boyd Harrold**, Dixon, California.

Durocs—Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. **J. L. Stevenson**, Van Nuys, California.

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. **Hollow Hill Farm**. **B. W. Shaper**, Manager, Colton.

Winsor Ranch Durocs—Boars and bred gilts of our own and eastern breeding. Write us your needs. **Morris C. Allen**, Manager, Bonita, California.

High Class Durocs—Two fine early litters, 10 each. Dam 2nd in strong class. **Owensmouth**. See **A. V. Austin**, Van Nuys, California.

For the Best in Durocs write **June Acres Stock Farm**, Davis, California.

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I Would Sell My topnotcher boar by **Kings Big Bone Leader**; two bred sows by **Long Smooth Jumbo**; also spring pigs—everything big type stuff. **H. Christanson**, Arlington. Write me.

We Won 10 Ribbons in the Los Angeles Livestock Show; the ribbons are fine, but the pigs are finer. **Viola L. Renwick**, Santa Barbara, California.

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. **J. A. Crawshaw**, Hanford, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. **Ferguson & McKalg**, Orland, California.

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Wanted—Walnut Meats and Cull Walnuts. We have been in this business 15 years, solicit culls for cracking only, paying cash. **Fred L. Mitchell & Son**, 214 French Street, Santa Ana, California. Phone 551-M.

Wanted—Reliable man to take charge of herd of registered Hampshire hogs. Give experience, references and wages desired. Good future for right man. **Box H. O. Cultivator**, Los Angeles.

Wanted—Avocado seed. **G. P. Sherwood**, 216 S. Bunkerhill, Los Angeles. Phone 19776, evenings.

Wanted—Pairs of guinea chickens. Write **Mrs. H. Gantz**, R. F. D., Santa Barbara, California.

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300,000,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book **THE HOMESSEEKER** which tells you where this land is and how to acquire it, or send \$2.00 for book direct. **The Homeseeker**, Dept. M, 336 S. Broadway, Los Angeles, California.

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For Sale—Farming and Stock Ranch land \$1.50 to \$12.50 an acre. Large and small tracts. Buy now—prices are sure to advance. **Watson**, 508 Van Nuys Bldg., Los Angeles, Calif.

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Ocean View Farm
Last Year's Income \$10,000
On high terrace, overlooking Pacific and beautiful mountain range; incanadam road Los Angeles passes door; short drive big city; 5 acres, wonderful crops cantaloupes, grapes, figs, vegetables, grain; ideal for poultry; water piped all over; apples, pears, plums, oranges, peaches, grapes; beautiful 2-story 10-room house, bath, concrete cellar, piped water; new garage, cattle shed, poultry house, brooder house; owner unable care for it, makes low price \$11,000, part cash, balance easy terms. Details this and other farms, groves, ranches, California and many states, page 91 Strout's Big New Illustrated Catalog Farm Bargains. Just out. Copy free. Call or write for free copy. **STROUT FARM AGENCY**, 503EJ Wright-Caller Bldg., Los Angeles, Calif.

For Sale—55 acres—45 acres in alfalfa, 10 acres in 3 year old prunes, 5 miles north of Chico 2 pumping plants, small barn, and small house and also 60 tons of hay. Water supply unlimited. This place can be bought for \$5000 cash payment and \$2000 a year with 7% interest. Address owner—**A. C. Musselman**, 937 Orient St., Chico, California.

FOR SALE AND EXCHANGE
10-20-40-60 and 80-acre ranches, rich level, plenty water; proven grape (Thompson seedless), fig and alfalfa land. Price right, easy terms.

FOR SALE
Some of the finest dairies in the state. **Chas. McNeely**, Alhambra, California.

For Sale—By owner. 160 acres deep peat soil, buildings, orchard, riparian water rights. With or without stock and equipment. **W. D. Nichols**, Box 62, Bishop, California.

For Sale—40 acres well improved with stock and tools. **Owens Valley**. Write me for price and further particulars. Owner: **J. H. Owens**, Laws, California.

For Sale—Ranches, Homes, Acres, free list. **Wilson Bros.**, Santa Cruz, California.

Bishop Land Co. can furnish from 5 to 1200 acres of the best land in the Valley. Address **Bishop**, California.

Irrigated Farms—Five acres and up. **Alex. Murdock**, Brentwood, California.

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For Sale—One first-class stationary feed and barley crusher. Easily converted into portable mill. Shafting, pulleys, elevators complete, also some belting. **J. L. Curtis**, Salida, Stanislaus County, California. Phone 38F11.

For Sale—Trundair tractor and 4-bottom 14-inch mould Board P & O plow. Tractor has been used about four months. For further information address **Lambert Ranch**, R. F. D. No. 1, Box 166, Pasadena, California.

One Double Unit Universal Milking Machine complete with pipe and electric motor used five months, sold cows reason for sale. \$275 if taken soon. **Richard Olson**, Box 8, Patterson, California.

For Sale—Used ranch material, windmills, pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for our "Special Bargain" price list. **Demmitt Co.**, Unstairs, 120 N. Main, Los Angeles.

Tractor Bargains—Cletrac rebuilt and fully guaranteed \$1,200—Fordson \$700—Bean \$400—Yuba like new \$1,800. Many others. **Leonard Fletcher**, San Fernando.

For Sale or Exchange—Big Sandusky tractor, has never been run. Have no use for same. Will sacrifice. **Box 333**, Placencia, California.

For Sale—Almost new Junior cider mill complete—West 4906—3007 South Hobart Blvd, Los Angeles.

For Sale—One heavy duty subsoiler. **N. E. Heacock**, Simons, California.

60 H. P. Holt Caterpillar Tractor \$2,000. See it at 922 W. 6th St., L. A. Calif.

MISCELLANEOUS

Powerene is Equal to Gasoline at 5¢ a gallon. Salesmen and agents wanted. Exclusive territory granted. Powerene is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed, power. An amount equal to 20 gallons of gasoline sent to any address in the United States, charges prepaid, for \$1.00. **W. Porter Barnes**, Box 424A32, Santa Rosa, California.

Dairy Barn—60x100 ft. with 66 iron stanchions; contains 17,000 feet good lumber in A1 condition; 7,000 sq. ft. 26 gauge corrugated galvanized iron; 23 windows with sash weights, price \$1,600. **HOG HOUSE** 30 x 60 plank floor, corrugated galvanized roofing. Price \$150. Located on Chas. McGary place, San Jacinto, California. Address owner: **Ray B. Mathews**, Buena Park, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the **Engineering Service Company**, 1316 Washington Building, Los Angeles, California.

Have Cash Buyers for salable farms. Will deal with owners only. Give description and cash price. **Morris M. Perkins**, Columbia, Mo.

Avoid Law Suits by having your property lines properly surveyed and established by the **Engineering Service Company**, 1316 Washington Building, Los Angeles, California.

Either one, land, hog, cattle in exchange for 1 Holt Caterpillar and 3 plows, cost \$6,600. Valued at \$5,000. **P. Miller**, Gustine, California.

For Sale or Exchange—Lot on High Street, Oakland, California. For particulars address: **Box 876**, San Jose, California.

For Sale—Two pair 5 months old peafowls at \$25.00 per pair. First orders with cash takes them. **H. A. MILLER**, Kerman, California.

If You Want to sell or exchange your property write me. **John J. Black**, Iowa Street, Chippewa Falls, Wisconsin.

SALESMEN WANTED

Men with Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write **J. H. Yetter**, 115½ North Broadway, Los Angeles.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, October 4, 1920.

Report for the week ending October 1:

The coveted goal of every owner of every pen in every laying contest is to have his hens average 200 eggs

SEEDS AND PLANTS

Strawberries—Carolina and Superb, two of the leading everbearing varieties, and heavy producers, particularly the Carolina. Berries large, firm and of good flavor, \$3.00 per 100 and \$25.00 per 1000. Also, Brandywine and Klondike, \$2.50 and \$20.00. All stock offered strictly first-class, prices F. O. B. **HARRIS SEED COMPANY, San Diego.**

Strawberries—1,000,000 plants leading varieties; 200,000 Cuthbert raspberry; 100,000 Black Cap tips; 100,000 Loganberry tips. Order now low prices. Also 100,000 choice peach seedlings—will graft in plums or prunes on contract for fall delivery 1921. **Lafayette Nursery Company, Lafayette, Oregon.**

Berries—We can furnish you with first class plants of all leading varieties. Now is the time to order, because plants will be scarce later. Send for price list. **M. J. MONIZ, Berry Specialist, Sebastopol, California.**

For Sale—Strong Mountain Grown Brandywine, Carolina and Klondike strawberry plants at two dollars per hundred, postpaid. **B. BRYAN, Camp Baldy, California.**

Reliable Cabbage Seeds—I grow them. You want them. Let's get together. Write me for special trial offer on just what you will need. **Isaac F. Tillingshast, 40 Fodel Street, Santa Rosa, California.**

Cabbage Plants For Sale—Winningstadt and Cannon Ball varieties. Apply daytime **Victor Duran, 200 S. 3rd St., Alhambra, California. Phone 1056.**

For Sale—Strawberry, Rhubarb plants. Will make special rates in quantity lots. **J. A. Schoonover, 105 N. Alhambra Street, Alhambra. Phone 76 Alhambra.**

Early Winningstadt Cabbage plants—Strong and healthy stock, \$2.50 per 1000. **M. Pazos, 1639 E. 53rd Street, Los Angeles, California.**

Brandywine and Banner Strawberry Plants, prices reasonable. **Lon King, 1158 West Fourth, Riverside, California.**

Pumpkin Seed—Mixed Pumpkin Seed, good germination, 25c per lb. **Aurora Seed Mill, Stockton, California.**

Strawberries—Plant 'em now. **Cash Nurseries, Sebastopol.**

during the hen's fiscal year, which runs from November 1 of each year to the last of the next October. In the laying contest at Storrs two pens of Plymouth Rocks from New York state and one pen of Rhode Island Reds from Massachusetts have already passed this high mark and there are still four weeks to go. That is to say, these three pens with a total of only 30 hens in all have laid more than 6,000 eggs.

The egg production of hens of all breeds and varieties all over the country is declining at this season of the year, more rapidly, of course, in some cases than in others. Three months ago the management of the contest at Storrs expected at least 50 hens to make perfect weekly scores. Last week, however, White Rock No. 130, from Greenville, Rhode Island; White Wyandotte No. 225, from Plymouth, Connecticut, and White Leghorn No. 997, from Mount Carroll, Illinois, were the only three hens out of the entire 1,000 that were able to make a perfect score for the week. There were 54 individual hens, including Barred, White and Columbian Rocks, White and Buff Wyandottes, White Leghorns, Orecons and Russian Orloffs that made 86 per cent. Contrasted with these was one entire pen of ten birds whose batting average was zero.

The total yield for all pens was 2,554 eggs, or a yield of nearly 37 per cent. Hollywood Farm's White Leghorns, from Hollywood, Washington, led all the pens with a score of an even half hundred eggs. A Connecticut pen of White Wyandottes entered by Harry D. Emmons, from Plymouth, was second best for the week with a yield of 48 eggs.

The three leading pens in each of the principal varieties are as follows:

Plymouth Rocks

Jules F. Francois (Barred), 2,116; Oneck Farm (Barred), 2,041; Chickatawbut Farms (White), 1,891.

White Wyandottes

Harry D. Emmons, 1,774; Merrythought Farm, 1,702; Mrs. R. W. Stevens, 1,698.

Rhode Island Reds

Pinecrest Orchards, 2,015; Deer Brook Poultry Farm, 1,827; Jacob E. Jansen, 1,768.

White Leghorns

E. A. Ballard, 1,967; Hollywood Farm, 1,958; W. Edgar Baker Jr., 1,889.

Miscellaneous

A. E. Hampton (Black Leghorns), 1,841; A. L. Anderson (R. I. Whites), 1,745; Oregon agricultural college, (Oregon), 1,679.

NATIONAL FUR PRODUCERS

Rabbit fanciers the country over have united in forming a national fancy rabbit club. With furs in favor as at present there is no reason why the raising of rabbits for their beautiful fur should not prove a most profitable business. In fact, California has many fanciers who are raising some of the finest of these fur producers.

The Tulare County farm bureau ranks second in the state as to number of members and third as to number of farm bureaus represented.

The Associated Raisin Company is having serious difficulty in securing cars to handle its output.



Help your Moulters Moults

Moulting time is the time that a hen needs assistance. It is the off-season in the life of the hen.

Think of the amount of a hen's energy, vitality and red blood that's required to reproduce a thousand feathers! (which is only an average plumage).

A moulting hen needs good health, good appetite and digestion. That's just what Poultry Pan-a-ce-a does for a moulting hen—gives her appetite and good digestion, so that she'll eat more and digest more.

Dr. Hess Poultry PAN-A-CE-A

Helps your poultry through the moult. And starts your pullets and moulted hens to laying.

It contains Tonics that produce appetite and good digestion—Tonics that tone up the dormant egg organs—Iron that gives a moulting hen rich, red blood and a red comb. It contains Internal Antiseptics that destroy disease germs that may be lurking in the system.

No disease where Pan-a-ce-a is fed

Pan-a-ce-a helps your poultry to stay at par during the moult. They don't become run-down, pale and thin. That's why a Pan-a-ce-a hen gets back on the egg job quickly instead of sitting around all fall and winter as a bill of expense while regaining her normal vitality.

Always buy Pan-a-ce-a according to the size of your flock. Tell your dealer how many fowls you have. He has a package to suit. Good results guaranteed.

30c, 60c, and \$1.25 packages. 25 lb. pail, \$3.50. 100 lb. drum, \$12.00. Except in Canada.

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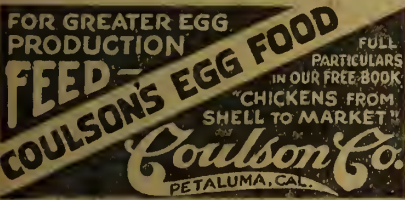
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Hatching eggs, chicks and stock from pedigree birds. Now booking orders for 1921. If placed now we can fill your order for chicks or eggs in any quantity up to 2000. For information and prices write

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RIGHT now—today—when your hens are building up after the molt—when your pullets are maturing and developing their laying organs—give them **Pratts Poultry Regulator**. It costs but a trifle—only about one cent a hen per month—but, as life-long users say, "it does make hens lay."

Pratts Poultry Regulator

for nearly fifty years has been America's most popular poultry tonic and conditioner. It is a medicinal preparation, not a food—a natural tonic and health builder. Used daily at the rate of a rounded tablespoonful for each ten fowls, it strengthens the weakened molters—hastens the growth of the pullets—starts them laying early—helps keep them at it all winter. The extra eggs are clear profit!

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Makers of Pratts Animal Regulator, Pratts Cow Remedy, Pratts Hog Tonic, Pratts Dip and Disinfectant, Pratts Poultry and Stock Remedies

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P24

YOU certainly want to save money, and you would like to have better bakings. Then use Calumet. It's the biggest thing you can do to improve the quality of your bakings—and lower baking costs.

Calumet is made in the largest, most sanitary Baking Powder Factories in the World. No Baking Powder is made under better conditions—none can be better in quality.

It contains only such ingredients as have been officially endorsed by the U. S. Pure Food Authorities. An absolute guarantee that it is pure.

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OF ALL BAKINGS**

**CALUMET
BAKING POWDER**



"BEST BY TEST"

It received highest Awards, World's Pure Food Exposition, Chicago — Paris Exposition, Paris, France—positive proof of its superior merit.

It is used by more housewives, domestic scientists and chefs than any other brand. That would not be the case, if it were possible to secure a higher quality leavener.

It is sold at a moderate price. All you have to do is to compare costs to determine how much you can save by buying Calumet.

Pound can of Calumet contains full 16 oz. Some baking powders come in 12 oz. instead of 16 oz. cans. Be sure you get a pound when you want it.

**Calumet Cream
Cake
Recipe**

—3 cups pastry flour, 3 level teaspoons Calumet Baking Powder, ½ cup butter, 1¼ cups granulated sugar, Yolks of 3 eggs, ½ cup cold water, Whites of 3 eggs, 1 teaspoon orange extract. Then mix in the regular way.



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STANDARD OIL COMPANY
(California)

Household Department

A TROUBLESOME DOLL

Dolly's lost her arms and legs—
Careless thing to do!
Dolly's gone and lost her head,
Lost her body, too.

Nothing but her wig is left
On the nursery shelf,
Oh, I've told her lots of times
Not to lose herself!

Dolly never, never, does
Anything she's told;
Have to scold her—when I find
Anything to scold!—Doris Webb.

**ALL ABOARD FOR THE FURNI-
TURE ISLANDS**

By Clara Peterson

(Continued from last week.)

"No one except Pussycat Mew and her mother," answered the sea lion. "But for some reason people are always traveling over there to take a look at them. Stupid, I call it."

"Pussycat Mew!" exclaimed Jennie. "Is she really there? O, will you take us over?"

Then she blushed, for the animal had said that the fare was twenty "dots."

"Of course we haven't any dots," spoke up Janie, who was thinking of the same thing.

"No dots!" barked the sea lion loudly, blinking his eyes. "I should think you had thousands of them—millions I might say."

He was looking straight at Janie's right arm, where five bead bracelets swung gracefully. The twins had been so excited over the nursery that they had forgotten to take off the chains Janie had strung. They were very glad of it now, for dots were nothing but beads—yellow and green and pink.

Jennie broke her longest necklace, which was of very fine orange beads, and counted forty into the little bag hanging from the sea lion's harness. Then the twins pulled up the legs of their pink and blue pajamas and stepped into the two seats.

With a great splash the animal (Mr. Bote was his name, he said) slid into the water, but he swam so close to the top that not even the little girls' toes got wet, and they looked around in great delight.

Suddenly Jennie, who was trailing her fingers in the water, felt something cold in the palm of her hand. She jerked it back into her lap, and both the little girls bent over and gazed down.

Three baby sea lions came up and stared curiously at the twins, especially at Janie's necklace, which was dangling delightfully.

Mr. Bote turned his head and stopped swimming.

"Now, see here, Angelina and Ruby and Rex! Didn't you promise to stay home when I gave you the goldfish to play with?"

"But—" squeaked Ruby.

"But—" squeaked Angelina. "Rex ate every one and broke the globe." Rex, who was the smallest and blackest, started to paddle away.

"The bowl was cracked," the twins heard him say. "And I wish I hadn't ate the fish—they wasn't half as good as minnies."

Mr. Bote sighed so that the twins shook in their seats.

"Their mother is attending a convention and I'm just about wild. Now, Ruby and Angelina, you go on the sand and play with shells until I get back. Rex is going to bed without his supper—if I can make him."

The little girl sea lions looked so lonely as they started away that Janie took off her necklace and tossed it to Ruby, who was looking back. She caught it in her mouth and nodded her head a great many times as though saying thank you.

"Divide them," called Janie, and then she and her sister forgot all about the sea lion children, for before them was Westchair Island.

Westchair Island was covered with soft, thick green grass and there was not a thing to be seen but a great clump of pussywillows in about the middle of the island. Mr. Bote waddled up on the grass and Janie and Jennie jumped out of their chairs.

"Pussycat Mew's house is behind those willows," said the lion, plopping into the water again. "Goodbye. Got to get to the fish market before Mrs. Whale closes up."

"Goodbye!" called the children, and waved their hands.

In five minutes they had reached the pussywillows.

Behind the willows was such a fascinating little house that the twin squealed with delight. It was built of gray wood and had two little peaks one on each side of the sloping roof. They looked just like cat's ears. There were two high oval windows which did, for eyes, another for a nose and a broad curved door which was exactly like a pussycat mouth.

"That is a real cat house," said Jennie.

But the house wasn't the best part of it, for there to one side sat the fairy on her little stool, painting busily. Cammie stood beside her yawning, and, posing in the bright sunlight was Pussycat Mew. She looked too good to be true. Her dress was of bright red silk with a long train which curled around her white tail. On her little front paws were snowy gloves and her pretty face was washed until it was as clean as a baby's. She jumped a little when she saw the twins, but Paintetta scowled at her and she picked up her train and smiled again.

Paintetta turned around. "Oh, it's you! Sit down. I'm very busy."

The twins sat down on the grass. Now and then Pussycat Mew blinked her green eyes at them, but no one said a word for quite a while.

"You see," began Paintetta finally "she has to keep very still or her picture won't be right. Since Mother Goose put her rhyme book on the market all the children have been teasing and teasing for pictures. All sorts of artists have been here to paint Pussycat Mew, for the children seem to like her, though goodness knows why. (The kitten looked quite sad at this. However, I'm the only one who can do it decently. A fellow who was here the other day gave her whiskers in the picture, though she never lets one grow out. There goes another brush."

She shook out the hairs which had come undone from the brush in her hand, and Cammie stamped his front feet and said angrily:

"When I made the contract with you, Paintetta, I did not think you would need a new brush every five minutes. And what sort of board and lodging do you give me? My price was entirely too cheap!"

While he was talking Paintetta pulled some fine hairs from his skin and with a thread from her purse tied them to the brush handle.

"Do you come here often?" asked Janie, who thought the subject ought to be changed.

"As often as the publisher wants new pictures," answered Paintetta, sitting down again. "What do you think of this?"

The twins went over and looked at the painting.

"It looks even better than—" said Jennie. She was going to say that it looked even better than the kitten herself did, but she happened to think that that wouldn't be very polite, so she changed it quickly to "It looks even better than I expected."

Pussycat Mew unwound her train from her tail and walked over to them bolding out her paw. Just then there was a loud crash inside of the house and an old black cat ran out. She had on a blue calico dress and wore spectacles.

"Oh, dear," said she. "Paintetta, just dropped the bowl that held your nectar."

"Never mind," said the fairy. "I can eat at Bureau Island and Cammie can wait, too."

"Yes, wait—wait—wait," growled the camel. "I'd like to be something besides a waiter and a paint brush."

Mrs. Cat was staring at the twins. "No more artists, I hope."

"I can't even draw a circle with a compass," said Janie quickly. "And neither can my sister." It was the first time she had ever been proud of the fact.

"Well," said Mrs. Cat, "you may come in and have dinner with us if you care for fish and milk."

Pussycat Mew was inside the door pulling off her gloves and Mrs. Cat led the twins into the house.



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Boston Garter's success is just a matter of
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For Women, Misses and Children

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sterilizers, etc. Absolutely safe, odorless, very
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\$1000 eleven months from planting. For further
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1850 East Villa St., Pasadena, Cal.

The California Cultivator
Costs Only \$1 Yearly

"I am so glad—" began the kitten,
but her mother shook her head.

"Now hush, Mewlinda, you are en-
tirely too forward, having your pic-
ture painted so often. Be quiet while
I show these visitors the house."

There were two little beds of pussy-
willow velvet and a great fireplace
of brown stone where a long fish was
cooking on a rack. There were many
rugs of mouse skins, which Mrs. Cat
pointed out proudly.

Then she went to the cupboard for
the fish platter and Mewlinda and the
twins sat down before the fire. The
kitten smiled so sweetly that the twins
forgot that she was only a cat, and
when Mrs. Cat called "Dinner" very
loudly they really expected to see a
big round table covered by a linen
cloth and set with rosebud chinaware
and silver.

Instead, Mewlinda led them to a
bench. There were two stools on each
side of it. There were four tin plates
and four tin cups. The cups were
filled with milk and the fish lay cross
the platter in the center of the table.
There was nothing else to eat.

Mrs. Cat was very friendly and told
the twins a great deal about her hus-
band, who had worked for the Marquis
of Carabas, but Janie and Jennie were
so hungry that they could hardly lis-
ten. Each one had a piece of fish, of
course, but it seemed so queer not to
have mother there to take out the
bones that for the first time they felt
rather lonely. Mrs. Cat watched them
drink their milk and then she got up
and untied her apron.

"Mewlinda, take the rack off the
fire. It will melt away."

(Continued next week.)

HOUSEHOLD QUERIES

Fig and Walnut Jam

In Cultivator of August 31 some one
asked for recipe for fig and walnut
jam. As I have not seen it answered,
I will give recipe which we think de-
licious. 1 gallon of fresh figs peeled
and cooked down into jam. Crack nuts
and chop meats, adding to jam about
five minutes before taking from stove.
This is too late for this season, but
be sure to try it next year, the nuts
give it such a delicate flavor.—Mrs.
D. Douglass, Fallbrook.

Grape Syrup

In answer to your call for a satis-
factory way of making syrup in the
Cultivator for September 25, I am
sending in the following recipe which
I have used for years and which makes
the finest syrup:

Syrup from Muscat grapes: Crush
grapes and press to extract juice. Put
juice on stove and heat until hot but
not boiling. To every gallon of juice
use one tablespoon of common baking
soda, putting the soda in a little at
a time so that the juice will not foam
over. Remove any scum formed and
keep on removing until the juice is
clear. Now add more fire and boil
slowly until reduced to three-fourths
of original bulk. Now put juice in
shallow pans and leave on back of
stove for a few days until it is thick-
ened to right consistency by slow heat-
ing. When in the shallow pans be
sure it does not boil, as boiling will
burn it, also darken. When it spins
a thread it is done and may be
strained through cloth while still
warm and will keep indefinitely.—Mrs.
A. B. Tayian, Fresno.

THREE GOOD COOKY RECIPES

By Mrs. J. E. Wilbur

Ginger Cookies

Put the following in a pint basin
as given: Dessertspoon ginger and
two teaspoons soda, on which put 10
tablespoons hot water, 10 tablespoons
shortening, ½ cup sugar and fill up
with New Orleans molasses. Add salt
to flour and mix soft.

Molasses Drop Cakes

1 cup molasses, 1 cup sugar, 1 cup
shortening, 1 cup hot water, 1 table-
spoon ginger, 1 tablespoon soda
(small), 1 teaspoon cinnamon, 1 egg
not beaten, 5 cups flour.

Sugar Cookies

2 cups sugar, 1 cup butter, 2 eggs,
¾ cup milk, ½ teaspoon soda. Sea-
son to suit taste. Mix soft and bake.

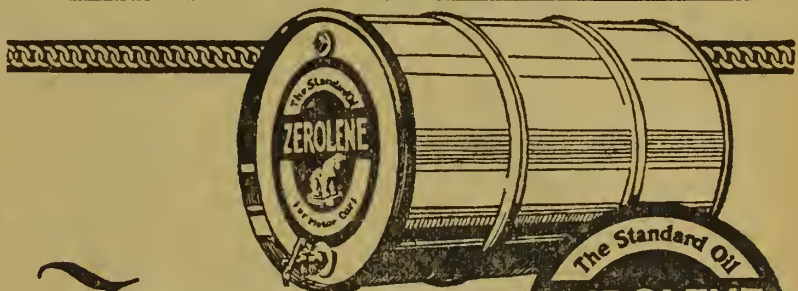


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Back in 1831 Cyrus Hall McCormick began the progressive work of building farm implements that measured a step in advance of anything else designed to serve a similar purpose.

This step in advance, resulting from the invention and development of the McCormick reaper, was maintained by Mr. McCormick throughout his busy farm machine manufacturing and selling career. The same progressive policy has been promoted and lived up to continuously by the Harvester Company, following in Mr. McCormick's pioneer footsteps.

International Tillage Implements

which include an implement of the right style and size for every tillage operation, are representative of this "step in advance" policy on the part of the Harvester Company. They are designed and built to put your seedbed in the best possible condition to receive your good seed.

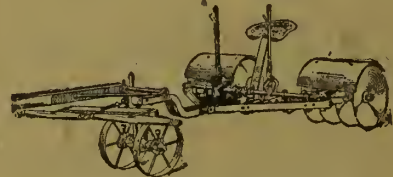
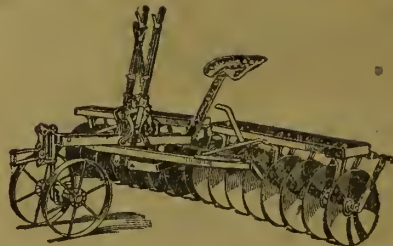
At the store of your nearby International full-line dealer you will find an International tillage implement of a size and type suited to your particular requirements, vouched for by International Harvester reputation which is as broad as world agriculture.

INTERNATIONAL HARVESTER COMPANY

CHICAGO OF AMERICA U.S.A.

Branch Houses:

San Francisco Los Angeles
and at 90 Other Cities in the United States



Los Angeles Markets

Los Angeles, October 20, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 63 cents.

CHEESE

Brokers' prices:

California flats, 28-30

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, October 19, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market steady; Stocktons: Burbanks, best, 2.50 @ 2.75 sacked; poorer low as 2.00. Sweet mostly 1.00 @ 1.15 per lug.

Onions: Supplies heavy, market dull. Stocktons: Whites 1.75 @ 2.25; Browns mostly 1.35 @ 1.50 per 100 lbs. sacked; Yellows: 1.25 @ 1.35 cwt. Garlic, lb., 12 @ 14.

VEGETABLES

These are the actual prices obtained October 19 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 9 @ 11; Limas, 6 @ 8.

Beets: Doz., 50 @ 60; sk., 1.75 @ 2.00.

Cabbage: Supplies moderate, market steady, movement slow, wide range in quality. Best mostly 2 1/2 @ 3 per lb.; per field crate, best, 2.25 @ 2.75.

Carrots: Doz., 30 @ 40; sack, 1.20 @ 1.50.

Cauliflower: Supply liberal, field cr., 1.50 @ 2.00.

Celery: Doz. bunches, 85 @ 1.00; cr., 3.00 @ 3.50.

Cucumbers: Market steady; local, best, lug, 85 @ 1.00.

Egg Plant: Lb., 3 @ 5.

Lettuce: Field crs., 1.50 @ 1.85.

Peppers: Belts and Chilis, lb., 3 @ 5.

Squash: Local summer, lugs, 75 @ 1.10.

Hubbard, lb., 1 1/4 @ 2.

Tomatoes: Local lugs, best, mostly 40 @ 70.

Turnips: Per doz., 35 @ 50; sk., 2.25 @ 2.50.

DECIDUOUS FRUITS

These are the actual prices obtained October 19 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies heavy, market steady.

Bushel boxes: Bellefleurs, 4 tier, 1.50 @ 1.75; 4 1/2 tier, 1.35 @ 1.45; Jonathans, fancy, 2.75 @ 3.25; Delicious, fancy, 3.25 @ 3.75.

Idaho & Utah loose Jonathans, 4 @ 6 1/2 per lb.

Bananas: lb., 10 @ 11 1/2.

Cantaloupes and Melons: Cantaloupes

—Market steady, supplies moderate. Local

Tip-top and Paul Rose, pink meats, standard crates, mostly 1.00 @ 1.40; few high as 1.75. Watermelons, lb., 1/4 @ 1.

Figs: Box, 75 @ 1.00.

Grapes: Supplies liberal, market strong on Tokays, and steady on others.; Muscats 7 @ 9; others 8 @ 10; few, high as 11 per lb.; Tokays, 8 @ 10 per lb.

Peaches: Local, mostly 2.00 @ 2.50 lug; few high as 2.75.

Pears: Bartletts, best, lb., local, mostly 6 @ 8; Northern mostly, 8 @ 10.

CITRUS FRUITS

Grapefruit: California, per box, market

pack, 2.75 @ 3.00; special packed brands, 3.50 @ 4.00. New crop, best, 4.00 @ 4.50.

Lemons: Market dull, wide range in prices. Local stock: Packed, bx., 2.75 @ 3.25; loose, 1.00 @ 1.50; lug, mostly 50 @ 60.

Oranges: Supplies liberal, market firm. Valencias: Packed special brands, 126's, 150's and 176's, 7.25 @ 7.75. Local packed, second grade, 4.00; packing house culls, 75 @ 1.50.

NUTS

California Walnut Growers' Association

announces prices on 1920 walnuts: No. 1, soft shells, 2 1/2; No. 2, 16 1/2; Budder, 25 1/2; standard budded, 22 1/2 per lb.

HAY

Alfalfa Growers of California, Oct. 20:

Fancy dairy 37.00

No. 1 dairy alfalfa 29.00

Standard Dairy 25.00

Stock Alfalfa 22.00

San Francisco Markets

San Francisco, Oct. 19, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less. Butter: Extras 60

CHEESE

Dairy Exchange quotations:

Jack, full cream 22 @ 26

Jack, half skimmed 17 @ 20

Cal. Y. A. 39 1/2

Cal. Flats 29

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras 83

Extra Pullets 67

Undersized 58 1/2

POTATOES AND ONIONS

Wholesale prices:

Potatoes, per cental: Street prices.

River, 2.40 @ 2.60 for No. 1, 1.50 @ 2.00 for No. 2; do, Oregon Burbanks, 3.00; Salinas, 3.50 @ 4.25; Idaho Gems, 3.00. Sweet potatoes, 3 @ 3 1/2 lb.

Onions: Yellow, 90 @ 1.00 per cental; Australian brown, 1.00 @ 1.25; do, white 1.50 @ 2.00.

Garlic: New, 6 @ 8.

VEGETABLES

Wholesale selling price:

Beans: Lb., 5 @ 9; garden, 8 @ 10; Italian, 8 @ 10; Lima, 10 @ 11.

Beets: Sk., 1.50 @ 2.00.

Carrots: 1.50 @ 2.00 sk.

Cauliflower: Doz., 1.00.

Pull the Stumps

Clear land slick, clean and fast at low cost. Big money clearing land for others. The Hercules big Free Book contains boiled down experience of 25 years of land clearing. Turn low cost stump land into high priced crop land.

Hercules Portable

Solid steel bed plate, broad steel wheels. The marvel of the age. Get our special low introductory offer. 80 days' free trial—3 year guarantee. Write today for book of photographs and letters from owners.

Hercules Mfg. Company
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Get Hercules Big Book FREE

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

Hyde's "BANNER" STRAWBERRY Plants

Our original strain, holding the world's record for production

35,000 lbs. per Acre, 1919

Also offer select strains of

NICK OHMER, NEW OREGON, MARSHALL, KLONDIKE, MAGOON

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FRESNO CALIFORNIA

PLANT FIG and PEAR TREES For PROFIT

Order Fruit Trees NOW—Stock Scarce
Write For Price List—Full Line—Good Stock

CITRUS, TROPICAL and Full Line of ORNAMENTAL PLANTS
PIONEER NURSERY OF MONROVIA

Cucumbers: Lug, 1.00@1.50.
Cabbage: Lb., 35@40.
Celery: Cr., 4.00@5.00; bunch, 30@40.
Corn: Sk., 2.00@2.50; fy., 3.00@3.50.
Egg Plant: Stockton, lug, 50@75; Liv-
ingston, 1.00@1.35.
Lettuce: Doz., 35@40.
Onions: Green, per bx., 1.75@2.00.
Peas: Lb., 13@15.
Peppers: Lug bx., Stockton Bells, 75@
90; Bay, 1.00@1.25; Chili, 75@90.
Spinach: Lb., 6.
Squash, Summer: Lug, 75@1.25; Cream,
75@1.00; Hubbard, 1.25@1.50, sk.; Mar-
rowfat, sk., 1.00@1.25.
Tomatoes: Bx., 50@85; fy., 1.50@1.75.
Turnips: Sk., 1.50@2.00.

FRESH FRUITS

Apples: King David, 1.75@2.50; Bell
flowers, 1.50@1.60; choice, 1.25@1.40; grade
C, 1.15@1.25; Rhode Island Greenings,
1.50@2.00; Jonathans, lug, 2.00@2.75; New-
tons, 2.15@2.40; Spitzenburg, 2.00@2.50.
Avocado: Doz., 3.50@4.00; Blacks, doz.,
small, 1.00.
Bananas: Lb., 10@11.
Berries: Strawberries, 85@1.35 per
drawer; raspberries, 75@1.00 per drawer;
blackberries, chest, 8.00@12.00; Huckle-
berries, lb., 22@25.
Cantaloupes and Melons: Turlock can

taloupes, standard, 1.25@1.50 lug; Pony
85@1.00; flats, 50@65; Sacramento, 1.00@
1.50 per lug; casabas, 1.00@1.25 per crate,
watermelons, 1 1/4 @ 1 1/2 lb.; Honey Dew,
1.00@1.25 per crate; Perslans, 1.50@2.25
per crate.
Cranberries: Per bbl., 13.50@14.00; 7.25
@7.50 per half bbl.; Oregon, 4.50@5.00 box
figs: Double, 1.25@1.50; single, 75@
1.00; White, 75@1.00.
Grapes: Malaga, 2.00@2.50; Tokay, 1.75
@2.25; Muscat, 2.25@2.50; Cornichon, 2.00
@2.25 per lug.
Olives: Lb., 10@12 1/2.
Peaches: Per small box, 1.50@2.00; L.
A. lugs, 2.00@2.25; Alameda, 2.50@3.25.
Pears: Bartlett, 3.50@4.50 for wrapped,
per box, 2.50@3.00 for No. 2; lugs, 3.00@
3.50 for fancy, and 2.00@3.00 for choice;
Winter Nellis, 3.00@3.25.
Persimmons: Bx., 2.00@2.50.
Pineapples: Dozen, 4.00@5.00.
Plums and Prunes: 2.00@2.25 per crate
or box; do, fancy varieties, 2.25@2.50;
small lugs, 2.75@3.00.
Pomegranates: 1.50@2.25 per peach
box; 3.00@3.50 per half orange box.
Quinces: Bx., 1.00@1.50.

GRAIN

Wheat: 3.50@3.75 cwt.; mill run, 2.75
@2.85.

Oats: Red feed, new crop, 2.40@2.65.
Barley: New feed, 2.10@2.15; shipping,
2.15@2.25.
Shorts: 60@63.
Middlings: 72@75.

HAY

Alfalfa Growers of California under
date of October 12:
There were 1,565 tons received in San
Francisco, the week ending October 9.
No. 1 Dairy Alfalfa.....21.00
Standard Dairy.....23.00
Stock Hay.....22.00

Under date of October 16, A. W. Scott
Co. says:
We quote today wholesale prices in car-
load lots as appear from dealers' trans-
fers upon the hay market in San Fran-
cisco (for prices to consumers charges
of cartage, commission and handling ex-
penses must be added according to con-
ditions).

	Per Ton
Wheat Hay, fancy.....	26.00@28.00
Wheat Hay (light 5-wire bales)	23.00@25.00
Tame Oat Hay	23.00@25.00
Wild Oat Hay	17.00@19.00
Barley Hay	17.00@20.00
Alfalfa Hay	21.00@24.00
Straw Oat or Barley	14.00@15.00

Citrus Markets

Prices firm, market satisfactory.
The lemon market in best condition for
the month.

Shipments

Shipment of oranges to date since No-
vember 1, 1919, from Southern California,
29,740 lemons, 8,276; total, 38,016. To
same date last season: Oranges, 34,293;
lemons, 9,508; total, 43,801. From Central
California to date this season: Oranges,
5,375; lemons, 288; total, 5,663. To same
date last season: Oranges, 3,714; lem-
ons, 251; total, 3,965. Northern California
this season: Oranges, 261; lemons, 23;
total, 284. To same date last season:
Oranges, 244; lemons, 2; total, 246.

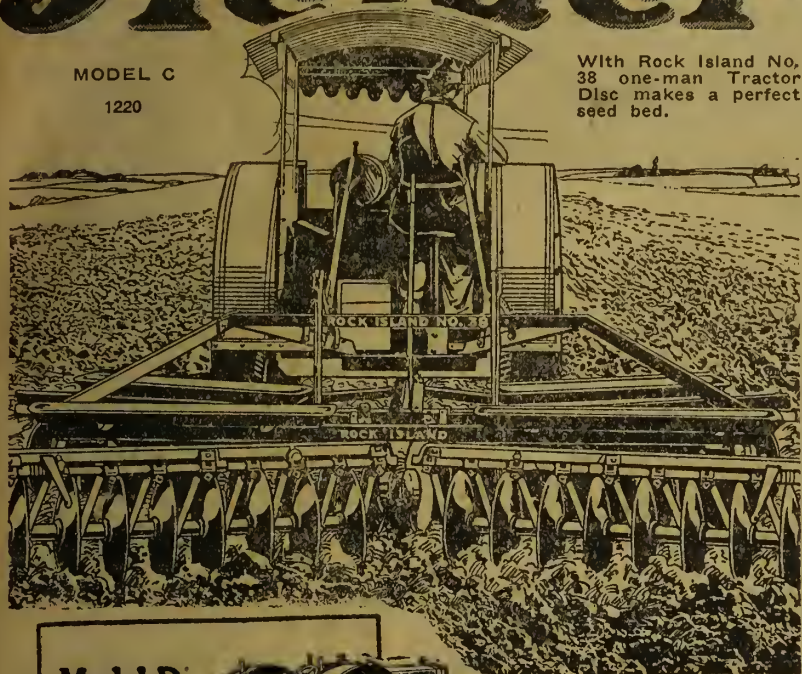
AT THE AUCTIONS

October 18
New York: 13 or., 1 lem. Val. 3.15-
9.55, lem. 6.85-7.45.
Boston: 5 or., 2 lem. Val. 3.50-8.80,
lem. 6.90-7.10.
St. Louis: 1 or., 1 lem. Val. 5.25, lem.
3.05-4.70.
Baltimore: 2 val. 3.75-6.80.
October 19
New York: 7 Val. 4.85-10.50.

Heider

MODEL C
1220

With Rock Island No.
38 one-man Tractor
Disc makes a perfect
seed bed.



Model D
9-16

Rock Island
One-Man Outfits

Heider Model D 9-16 with No. 9
Rock Island CTX two-bottom
Power Lift Plow directly attached.
To the right, Heider Model C 12-20
with Rock Island No. 19 CTX two-
three bottom Power Lift Plow.
Foot-lever control. Automatic
power lift.

Rock Island
No. 38 One-
Man Tractor
Disc

Close-up
levers. One man
easily operates both tractor and
disc. Extra high clearance. Two
sizes, 8 and 10 feet cut. Solid or
cut out discs.

Rock Island No. 12
Tractor Plow

Successful behind any tractor.
Front furrow wheel lift equipped
with 2, 3 or 4 Rock Island CTX
bottoms that turn the furrow slice
clear over, pulverizing soil and
preventing air spaces.

Quick Detachable Shares

For 12 Years

Heider Tractors have plowed and har-
rowed every kind of soil, and have
performed on every kind of farm belt
work.

The Heider's reputation for power,
fuel economy, and low up-keep is
built on the experience of users over
this long period.

Heider Saves

15 to 20% of parts, by its patented
Friction Drive. No clutch, no trans-
mission gears, no bevel gears. No
gear stripping.

Saves upkeep—fewer parts to wear.
Saves fuel loss. Less power required
to run the machine—more power for
the pull.

Two sizes 12-20 and 9-16—described in
catalog—also Rock Island tractor
tools. Ask for booklet, "The Verdict
Direct from Heider Owners," with
catalog.

E. P. Bosbyshell Co.

125 No. Los Angeles St.

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Distributor for

ROCK ISLAND

PLOW COMPANY, Established 1855, ROCK ISLAND, ILL.



Now's The Time To Fertilize Your Trees

And the best way to do it is with the help of Hercules
Farm Dynamite.

Heavy ground should be aerated by blasting around the
trees (just outside the foliage line) when the ground is
hard and dry in the Fall. Dig out the loosened earth
and fill the holes with organic matter, manure, leaves or
twigs.

Try it this Fall—your trees will tell you by the way they
bear next year that they like to be cultivated with

HERCULES FARM DYNAMITE

Send for a copy of the Hercules Powder Co.'s 68 page
book "Progressive Cultivation". Every rancher or
orchardist should have this book for it tells him how to
plant trees, cultivate bearing orchards, subsoil, clear land,
blast ditches and do many other things with the help of
Hercules Farm Dynamite.



Hercules Farm Dynamite is for sale at
leading Hardware and Implement dealers.



HERCULES POWDER CO. 1033 Chronicle Building, San Francisco, Cal.

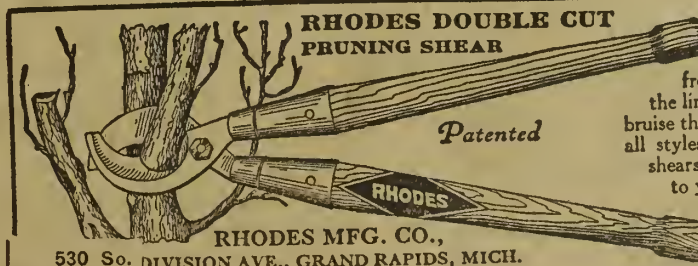


Gentlemen: Please send me a copy of "Progressive Cultivation."

I am interested in dynamite for _____

Name _____

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Patented

RHODES MFG. CO.,

530 So. DIVISION AVE., GRAND RAPIDS, MICH.

THE only
pruner
made that cuts
from both sides of
the limb and does not
bruise the bark. Made in
all styles and sizes. All
shears delivered free
to your door.
Write for
circular and
prices.

To keep thoroughly posted subscribers should read every advertisement
in the California Cultivator columns.

My K Hand Stump Puller

Gives Your Hand 96,000

Pounds of Power

Big stumps! stumps and trees with deep tap roots! any stump that can be pulled with the best inch steel cable!—you *alone* can pull with my "K" Hand Power Stump Puller—*without digging and without the expense of teams and powder*. I guarantee it. I refer you to U. S. Gov. officials. I give highest banking references. If you have stump land, the cheapest way of clearing it is with the

Frank Hance, a one-armed farmer of Bowie, Md., pulling a double silver maple 3 ft. 8 in. in diameter at the ground, with deep tap roots. This is an easy pull for the "K," as the cable can be hitched high and the leverage is consequently greater.

K

HAND POWER Stump Puller

How the "K" Pulls Biggest Stumps

The "K" works on the leverage principle of the ordinary lifting jack, except that the power is applied on a cog-wheel instead of a standard. 100 lbs. push on the lever develops a 48-ton pull on the stump—all an inch steel cable will hold. One man operates it alone—no teams to pay for—no walking.

A Mechanical Wonder

Made of finest steel—guaranteed against breakage. Weighs only 171 lbs.—easily carried or hauled about on its own truck wheels. Has two speeds—60 feet per minute for hauling in cable or for small stumps—slow speed for heavy pulls. *Works equally well on hillsides and marshes where horses can not work*

Owners Praise It

H. Sinclair of the Dept. of the Interior, a U. S. Gov. official, writes: "The stump puller is a wonder."

Ernest Thompson Seton, author and naturalist, declares the "K" "a great success."

Hundreds of owners write in, telling of pulling six- and seven-foot stumps, of pulling faster and pulling bigger stumps than by any other machine.

Special Offer We are making a special offer to get a "K" Stump Puller introduced in every neighborhood. Write us today for full information and for free book on Land Clearing and about our Wonderful Drag Saw.

The Fitzpatrick Products Corp.

Box 17 99 John Street, New York
Box 17 182 Fifth St., San Francisco.

Tear Out and Mail Today
The Fitzpatrick Products Corp.
Box 17 99 John St., New York
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Send me full particulars on your special offer and your free booklet on Land Clearing.

Name _____

Address _____

H.G. Hunzicker of Foster, Wash., pulling a 24-inch fir stump with deep tap roots out of hard ground, without using powder or cutting any roots.

CALIFORNIA CULTIVATOR

and **LIVESTOCK** and **DAIRY JOURNAL**

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

October 30, 1920

No. 18

Capitalization of Food Production

WHEN the time comes—if it ever does—that the producer is certain of a price which assures a reasonable profit; and when the market is so regulated that the middleman does not exact the pound of flesh from the consumer, thereby preventing quick disposal of the products of the farms, that time will chronicle a rush of “back-to-the-farm” which will silence predictions, often heard these days, of a possible world famine.

The farmer will always be compelled to take his chances with nature. Frost, drouth, heat, cold must all be reckoned with. The farmer is willing to take those chances and to produce largely, but when, in addition, he is compelled to take chances with the market which is largely under the influence of manipulators, the gamble is too great, and banking, merchandizing, or other venture proves more attractive. This is simply the natural course of common sense business and no number of preachments on the necessity of “back-to-the land” avails.

These preachments are very popular on the part of professional people, merchandizers and others, and indeed they may have usefulness if handled from the right angle. The American Farm Bureau Federation is endeavoring to approach the problem from the farmer's standpoint. It is endeavoring to find some method for the farmer to follow by which he may continue to buy all of his supplies at retail and sell at wholesale and not come up against inevitable failure. No other business on earth can stand the handicaps which confront the farmer. For the past five years the appeal to patriotism has been so strong that production has been continued notwithstanding labor shortage and, for farming purposes, capital shortage, and now, as one Riverside fruit grower expressed it recently, credit shortage. This shortage he characterized as so serious that it amounts to a credit panic, and this we believe will result in a great shortage of food production in 1921 unless it is overcome.

The cotton grower, the grain grower, the livestock producer and the producer of some kinds of fruits is today unable to extend his credit or to secure cash on his past seasons productions without serious sacrifice. If this sacrifice is forced upon him there is but one alternative and that is reduction of output.

A recent statement by the federation reviews the present situation:

“We are in an era of uncertainty. We are no longer stimulated by our wartime fervor. Many expedients have been attempted to remedy existing conditions but as a people we have overlooked the basic economic principles upon which the lives of the individual and the nation depend. We need to be aroused to a more thorough study of the important factors which are contributing to the present unrest and uncertainty. We are repeatedly reminded that the world has been impoverished and yet there seems a tendency on the part of everyone to dodge the inevitable.

“We have tried to rehabilitate our country by every method except through the sweat of the brow. Many industries have been stimulated to the point where they have become top-heavy. Liberal credit has had the effect of inflating values. It was recently pointed out by the National City Bank that the granting of unlimited credit to manufacturing industries will not solve our problems. Since the war there has been a highly competitive demand for labor and material. Abnormal credit extension, granted to the manufacturers of luxuries and non-essentials, has been largely expended in driving up wages and in buying material. This has resulted in a higher level of prices which the consumer has had to bear and we seem to be farther than ever from the solution of our problems.

“We are over-industrialized. The superstructure of luxury manufacturing enterprises overbalances the more basic industries. The foundation of business has been neglected—(Continued on Page 571.)

Consistency and its Result

More than twelve years ago Willard built his first automobile starting, lighting and ignition battery—several years before electric starting came into general use.

For more than twelve years the one object on which Willard effort has concentrated has been automobile batteries—batteries that would serve the car owner longer, more efficiently and more reliably.

This consistency, this concentration on one big problem, has resulted in Willard leadership in the automotive battery field, and is responsible for—among many and varied contributions to the industry—the perfection of Threaded Rubber Insulation, the greatest battery improvement in years.

There are today 152 passenger car and truck manufacturers using the Still Better Willard Battery—the only battery with Threaded Rubber Insulation.

Willard Service

This trade-mark is branded in red on one side of the Still Better Willard Storage Battery—the only storage battery with Threaded Rubber Insulation.



Consistent devotion to one aim, the building of a better automotive battery, has resulted in the adoption of the Still Better Willard by the 152 manufacturers below.

Acason	G M C	Oneida
Acme	Giant	Oshkosh
All American	Glide	
Allis-Chalmers	Great Western	*Paige
*American		Parker
Beauty	Hahn	Peerless
American	Hatfield	Peugeot
LaFrance	H C S	Phianna
Apex	Hawkeye	Pierce-Arrow
*Apperson	Haynes	Premier
Armleder	Henney	Preston
Atco	Highway	
Atterbury	Holmes	Rainier
*Auburn	Holt	Renault
Austin	Hupmobile	*Reo
	Hurlburt	Republic
Bacon		Revere
Bell	Independent	Riddle
Belmont	Indiana	Robinson
Bessemer	International	Rock Falls
Betz	(I. H. C.)	R & V
Biddle		Knight
*Bour-Davis	*Jordan	Rowe
Brockway		Sandow
Buffalo	*Kissel	Sayers
*Buick	Koehler	Seagrave
		Service
Cannonball	Lancia	Shelby
Capitol	Landa	Signal
*Case	Lewis-Hall	Singer
*Chevrolet	Lexington	Southern
Clydesdale	*L. M. C.	Standard 8
Cole	Luverne	Standard
Collier		Stanley
Colonial	Madison	Studebaker
Comet	Marmon	Stutz
Commerce	Master	Sunbeam
Commodore	Menges	
Corliss	Menominee	Tarkington
Cunningham	Mercer	Thomart
	Mercury	Titan
Daniels	Meteor	Tow Motor
Dart	(Phila.)	Transport
Denby	M H C	Traylor
Dependable	*Mitchell	
Diamond T	Murray	Ultimate
Dixie Flyer	McFarlan	
Dodge	*McLaughlin	Velie
Dorris		Vulcan
	*Elgin	Ward
Fargo	Napoleon	LaFrance
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Fergus	Nelson &	White
Ferris	Le Moon	Wilson
F W D	Noble	Winther
Franklin	Northway	Winton
Fulton	Ogren	Wolverine
	Old Hickory	
Garford	*Olds	*For Export

Willard STORAGE BATTERY

California Cultivator

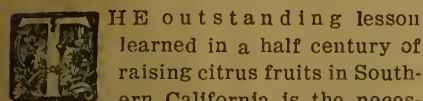
Vol. LV, No. 18

Los Angeles, October 30, 1920

One Dollar Yearly

Wanted---Organic Matter by Southern California Citrus Growers

By Robert W. Hodgson



THE outstanding lesson learned in a half century of raising citrus fruits in Southern California is the necessity for recouping soil fertility through the regular and liberal use of fertilizers. And that citrus growers have learned this lesson well is attested by the fact that annual expenditure for fertilizing materials in Southern California has long since passed the million dollar mark. Sufficient information was long ago accumulated to prove conclusively that of transcendent importance in the maintenance of citrus orchard soils in good fertility is organic matter. In fact, elaborate fertilizer experiments conducted over a period of years, coupled with the experience of hundreds of growers extending back over two decades, have apparently indicated that of all the fertilizer elements which have been used in the past only two have given definite and measurable results, namely, organic matter and nitrogen. Not the least interesting feature in this connection is the fact that these two are practically always most intimately associated, which makes it possible to say without fear of contradiction that the future of the whole citrus industry is absolutely dependent upon the securing of an adequate supply of organic matter. Where is this organic matter to be secured?

The Cover Crop

Cheapest is the cover crop. Beginning about 15 years ago the growing of cover crops for organic matter is today practiced on thousands of acres. A large number of cover crop plants have been given exhaustive trial, finally narrowing down to two in number, a native annual clover, *Melilotus indica*, and vetch. A large and valuable mass of information relative to the best methods for growing and handling winter cover crops has been accumulated, so that at the present time the citrus grower who desires can be reasonably certain of obtaining good results with a green manure crop. But still the search for better winter growing crops goes on. Perhaps the best possibilities in sight are purple vetch, the seed industry of which is now well under way, and the new annual sweet clover recently developed at the Iowa agricultural experiment station.

Of more recent development is the summer cover crop. Unquestionably, there is more room for development along this line than with the winter crop. To date the most satisfactory crop developed is the cow pea, particularly the Whippoorwill, although it may well be that varieties of soy beans and velvet beans will be developed or introduced which will prove even better.

Using two cover crops a year, or double cover cropping as it is called, is the most recent development of all and it has many points in its favor. Perhaps the next development will be a closer study of fertilizing cover crops, indirect feeding of the trees by stimulating the growth of the green manure crop.

But the cover crop has its limitations. Its success is very intimately bound up with available supplies of

irrigation water, particularly with summer growing crops. Moreover, for success the cover crop demands considerable direct sunlight, an impossibility in old orchards where the ground is largely shaded. And on certain soils and in certain districts entirely satisfactory cover crops have not yet been found. Orchard cover crops will not solve the organic matter problem, though they will do much to furnish this much needed substance.

Animal Manures

Animal manures furnish an almost ideal source of available organic matter. The big subsidiary purchasing organization of the Exchange last year handled a half million dollars worth of animal manures. Today Southern California citrus growers are purchasing manures in Imperial Valley, Arizona, Nevada and Utah, and are even considering bringing it from Idaho and Montana. But supplies from these sources cannot last forever. Already the end is in sight. Moreover, a decided movement is evident for farmers of these outlying districts to retain their manures at home.

With manure prices sky high—so high, in fact, that many growers are wondering how they can afford to longer purchase them even though available in sufficient quantity—has

come a pronounced tendency toward greater conservation and economy in their use. The old wasteful methods of application are being done away with. Surface spreading is giving way to underground application and better methods of storage and handling are being developed all the while. Purchasing by analysis has come to be the rule rather than the exception as it was five or six years ago.

The use of manure substitutes in the form of inert organic material, so devoid of bacteria that its decay stopped ages ago, is rapidly increasing in extent. Peat and muck are now being mined in large quantities and shipped to citrus growers for use as fertilizer.

Other Sources

In the search for other sources of suitable forms of organic matter, citrus growers of recent years have become large consumers of bean straw, spoiled alfalfa hay and other materials of a bulky nature and analyzing from one to two per cent nitrogen, such as cotton balls and the like. Hundreds of tons of bean straw are yearly used as manure substitutes, and with excellent results, this material having been found about twice as valuable in fertilizing elements as the usual run of stable manure. Alfalfa hay has about the same or even a little higher

fertilizing value and is rapidly coming into greater use. But the supply of those materials varies enormously from year to year, as does the price. Three years ago more than three times as much bean straw was produced as is available this present season. And three years ago alfalfa hay could be purchased at half the price at which it can be had today. And the higher the price the more valuable do these materials become to the livestock man who can utilize their feeding value and then recover from 50 to 70 per cent of their fertilizer value in the form of manure.

Biennial sweet clover, *Melilotus alba*, produces a heavy tonnage of green stuff and is now being grown on low lying lands where water is cheap, the forage cut and used for fertilizer on orchards. Here seems to be a promising means of solving the problem, utilizing cheaper waste lands for the growing of organic matter to be used on citrus orchards. All the promising plants furnishing large quantities of organic matter should be given a trial along this line, including certain of our vigorous growing lupines, sesbania, and other crops.

Greater Diversification in Farming

Perhaps the ultimate solution—certainly one of the most fundamental and desirable—is greater diversification in farming. Southern California agriculture, and particularly the citrus industry, is today the victim of too intense specialization. The raising of livestock—dairying, swine raising, and feeding beef cattle—has until recently been a very minor part of the agriculture of Southern California.

Here and there may be found growers who have gone into livestock raising in order to meet the fertilizer requirements of their trees. At least a half dozen dairies are operated in connection with citrus orchards, purely for organic matter. The dairy cow makes a good partner for the citrus tree. Swine raising has been adopted by a few and with excellent results. Hogs and oranges, if properly handled, make a successful combination.

Of recent years has come the slogan, "A hen to the tree." Poultry manure is generally regarded as perhaps the best for citrus trees, and many growers are now linking up the hen and the orange or lemon to good advantage.

The most recent suggestion along lines of greater diversification is the establishing of stock feeding yards in various parts of the citrus districts where feeder stock could be finished off for market and the fertilizer used on neighboring orchards. Many growers feel that the value of the manure thus secured would greatly exceed the cost of shipping the feed in, and certainly the best place for manure to be made is near the point of use.

Other means for solving the organic matter problem will no doubt be devised in the future, but the writer feels that the last one mentioned, namely, greater diversification, is perhaps the most promising. A greater utilization of all possible methods will no doubt effect its solution, and solved it must be if the citrus industry is to endure.

Bagging Grapes

Mr. Howard's answer to a query as to bagging grapes, given in the issue of October 16 on page 516 of the Cultivator, induces C. W. Dayton, in the hills near Owensmouth, Los Angeles County, to send in a suggestion as to his practice with some of the late grapes. Dr. Dayton writes:

When I lived in the valley I had no trouble with birds removing the paper bags, but here in the mountains I found there were birds that would remove the paper bags about as fast as I could put them on.

Also, there were mice, rats, coons, rabbits, squirrels, coyotes, badgers and about six kinds of birds, besides linnets and hornets. Some birds begin to suck the juice while the grapes are green and rabbits eat them green.

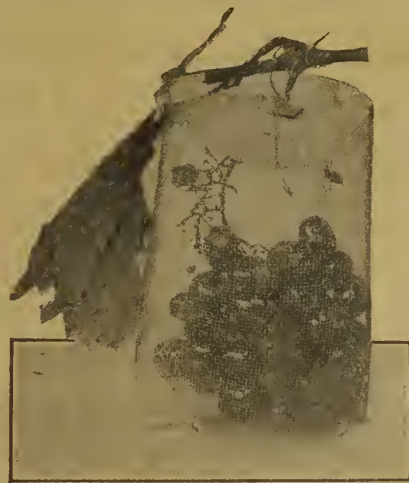
The mountain grapes stay good without rotting all winter until April or May, sometimes, so that we have them fresh off the vines every day. Often we sell some for 12 to 15 cents per pound in the winter.

I think these screens cost about two cents per pound for the grapes, but I have had these same screens for from ten to 15 years and they are yet as good as new. I made one or two thousand and use them every season and would not think of doing without them.

I make the wire long enough to go through and wind around the limb of the vine to prevent wind from blowing them back and forth and cutting off the stem. I use about four sizes of these screens up to six inches in diameter and 12 inches long.

In the mountains the bunches of grapes are more compact and smaller than in the low country, but better in flavor. We put the screens on while the grapes are about the size of peas. I have ten or 12 varieties of grapes up here. Thompson and

Sultanas do not do well in the mountains. Moore's Early, Concord, Niagara, Catawba do well, but the ones we have the most of are Mission, Rose of Peru, Tokay, Grenache, Sweetwater, Hamburg, Red Emperor, Malvoise, etc. Hornets do not go inside these screens, nor honey bees.



Cylinder of Wire Screen for Protecting Grapes

Cylinder is made from regular wire screen such as that used on doors and windows, cut about six inches wide and 10 or 12 inches long. This is rounded into a cylinder and touched with solder in four places where the ends lap about a quarter of an inch. Then a circular (or eight-square piece) about three inches in diameter has been cut for the lower end of the "bag" where it is held in place at four points by a touch of solder. The upper end was left open. The cylinder is placed over the bunch of grapes, when nearly full size but still green, and closed at the upper end with a zinc disk clamped so that a single wire run across after the cylinder is placed over the grapes effectively locks the container and prevents birds, bees and rodents from reaching the fruit.

Agricultural News Notes of the Pacific Coast

Northern California

Oroville will hold its orange and olive exposition November 15-20.

Butte County is looking for an assistant county farm adviser.

California has 117,690 farms, according to the figures of the census bureau.

Oroville, Butte County, will hold an orange and olive show from November 15 to 20.

California Fruit Distributors report much improvement in the refrigerator car situation.

The Hayward chamber of commerce is considering establishing a poultry demonstration plant.

Farm bureau meetings will be held in Placer County at Mount Vernon, October 23; Roseville, 25; Colfax, 27.

The first auction sale of the 1920 crop of rice was held in Sacramento, October 18, about 50,000 bags being sold.

The Agricultural Legislative Committee met in San Francisco last week to discuss the anti-Japanese amendment.

The enlarged rice mill at Woodland, Yolo County, began operations on October 18 with a capacity sufficient for local needs.

Sheep from many points in the north are being moved to the vicinity of Stockton to feed on the refuse in beet and bean fields.

Olive growers of Butte County have sent a delegation headed by B. B. Meek of Oroville to ask congress for a tariff on olives.

The second annual farm bureau fair held at Anderson, Shasta County, attracted 10,000 visitors. The hog show was a big feature.

Colma, San Mateo County, has a violet field of eight acres, the largest in the state. 150 dozen bunches of flowers are picked daily.

The Livermore Valley, in Alameda County, had received to October 16 a rainfall of 1.75 inches, considerably above the average precipitation.

The embargo on sheep movements in the Cloverdale-Geyserville-Hopland district will soon be removed, as the local infestation of seabies is now under control.

D. F. Hollenbeak of Whitmore, Shasta County, is making maple sugar from native trees and the state forester states the quality is as good as the Eastern product.

Director Hecke reports that the asparagus beetle, which infests several hundred acres in Northern California, is very easily controlled by spraying, if done at the proper time.

Representatives of many farm organizations met with the board of regents of the state university at Berkeley on October 13 to discuss needs of the agricultural industries before shaping up the annual budget.

Report comes from Washington that Japanese have no further hope of defeating the anti-alien law to be voted on by California this fall but will appeal to the courts to nullify it on the ground that it is a violation of the federal constitution.

The Poultry Producers of Central California is urging a tariff on Australian eggs "at least equal to the 12 cents a dozen protection which Australia has against our eggs and which prevents us from exporting eggs thither in our flush season."

Central California

Manager Niswander of the Peach Growers says that half the peach crop has already gone East.

Members of the Peach Growers Association expect to receive around 16 cents for their dried fruit.

The Stanislaus Sweet Potato Growers Association has 400 members, representing an acreage of 5,000.

Stanislaus County is harvesting sweet potatoes. At least 1,000 earloads will be sent out this season.

The Tulare Cooperative Poultry Association did a business amounting to \$20,000 for the month of September.

The boys of the Kern County High School Agricultural Club will hold a hog sale of their own at Bakersfield, October 30.

Olive growers of Lindsay, Exeter and Porterville districts of Tulare County have formed a pool for marketing their crops.

Many applications for farm units were made at the Delhi Settlement. Work is being rushed on building of houses for new settlers.

The cotton gin building at Shafter, Kern County, has been completed and the machinery is being installed. It will be a ten stand roller gin.

The Merced-Stanislaus Sweet Potato Association announces the present crop as less than last year's but quality and prices good and market firm.

A short course in tractor management will be given at Stockton the third week in November. It will be conducted by L. T. Fletcher of the university farm.

During the 12 months ending October 1 seven counties comprising the California Farm Bureau Marketing Association sold fat hogs to a total of a million and a half dollars.

It is estimated that the olive crop of the San Joaquin Valley between Reedley and Porterville is between 5,000 and 6,000 tons, only 1,500 tons of which have been contracted to date.

The California Cooperative Canneries have announced that new machinery has been installed in their Visalia plant to make into oil all the surplus olive crop of the valley, no canning to be done on account of adverse market conditions.

The California Associated Raisin Company will control 150,000 tons, or six-sevenths, of the entire state raisin output. Although the crop is short as compared with former years, the growers will receive more money. Last year's prices were on the basis of 10 cents per pound. This year's prices will be on the basis of 15 cents.

The raisin crop for the state for 1920 will not be more than 175,000 tons, according to estimates made by California Associated Raisin Company officials. Last year the state crop was approximately 195,000 tons. The shortage is largely due, according to Wylie M. Giffen, to frost in the early spring and extreme hot weather during the month of June.

Prices for cotton picking in the San Joaquin Valley have been named by the board of directors of the Valley Fruit Growers Association. The price for picking short staple and Durango cotton was set at 2½ cents per pound, long staple at four cents per pound. It is estimated that at least 10,000 pickers will be required to care for the crop in the San Joaquin Valley. Work is now in full swing.

Southern California

Bean cleaning has begun at Wintersburg and Smeltzer, Orange County.

Two carloads of walnuts were shipped from Santa Ana October 5.

The Santa Ana Register is urging necessity of agricultural training in the high school.

The cotton growers of the Palo Verde Valley are paying two cents a pound for pickers.

Wideawake farm center is the newest in Imperial County.

Growers of seed beans in the Carpinteria Valley report beans testing way above the standard.

The first shipments of nuts from the Santa Ana Walnut Association packing house went to Boston.

Indio date growers are still hot on the trail of thieves who are taking their valuable fruit.

During the first three days of the Southern California fair at Riverside there were 25,051 paid admissions.

The Oxnard beet sugar factory will close for the season November 1. No beets were received after October 25.

The plant of the Imperial Ice and Development Company at Brawley was burned last week, together with 13 freight cars.

The Santa Ana Walnut Growers Association employs 200 women in its cracking plant and expects to be able to use 100 more.

A new oil refinery with a capacity of 1,000 barrels a day and to cost \$180,000 will soon be erected at Yorba Linda, Orange County.

The Puente Valley Walnut Growers Association has forwarded its first shipments to the East. They were sent by water to New York.

Engineer H. C. Gault will make a report to Congress, December 6, on the feasibility of an "All American" canal for Imperial Valley.

A plant to manufacture potash from kelp has just been completed on the Taylor ranch north of Ventura, a concrete structure 60x150 feet.

The packing house of the Carpinteria Walnut Growers Association opened for work October 11. The dropping of nuts has been slow.

Cotton picking in the Perris Valley, Riverside County, started October 18 with an estimated crop of 600 bales. The new cotton gin is also operating.

Bean threshing in the Carpinteria Valley of Santa Barbara County has come to a close. Good crop on low ground; on the uplands rather short.

Horticultural Commissioner Sharp of Riverside County has been visiting the Palo Verde Valley explaining the new quarantine regulations on cotton.

The Anaheim Manufacturing Company has incorporated in Orange County with a declared capital of \$150,000, to make fruit drinks and similar products.

The cracking plant of the Santa Ana Walnut Growers Association opened October 18 and within a month the present force of women will be increased to 200.

Riverside County supervisors are framing an ordinance requiring all beekeepers of the county, whether commercial or not, to register their stands. This will enable the bee inspector to keep track of isolated colonies which often harbor disease.

The Coast and General

Montana caught its first killing frost September 29.

Colorado potato shippers report a very slow market.

Texas pecan growers are talking of a 25 cent price on their nuts.

The Affiliated Fruit Jobbers Conference convened in Kansas City last week.

Wyoming complains of dry weather that will not allow of seeding of wheat and rye.

At the sheep sale held at the Washington state fair 424 head were disposed of.

Prune drying in the Willamette Valley of Oregon has been held up by rainy weather.

Hop growers of the Yakima Valley, Washington, find lighter yields than they had estimated.

Josephine County, Oregon, farmers have united in forming a cooperative marketing organization.

Snow storms in northwestern Colorado have leveled grain and frozen many of the truck crops.

Cider and vinegar makers at Spokane, Washington, are paying \$9 to \$12 a ton for evil apples.

Sweet potatoes have proven a profitable crop on the cut-over piney woodlands of central Louisiana.

Two thousand acres, formerly dry land, will be put under water at Leavenworth, Chelan County, Washington.

The Oregon Poultry and Pet Stock Association will hold its winter show at Portland, December 3-13.

California is the second state in the Union as a producer of onions, being a close second to New York.

The grain of Walla Walla Valley, Washington, is a 95 per cent thresh. The season is later than usual because of rains and damp weather.

The federal horticultural board is considering necessity of quarantining Alabama because of the presence there of the Mexican bean beetle.

The upper Columbia Valley reports the finest crop of apples ever harvested in that section, the fruit being practically free from codling worm.

Two hundred and sixty Indians were taken to Yakima Valley, Washington, to work in the hop fields. The season is now closed with a 20,000 bale crop.

The newly organized Holstein Association of Washington will hold a meeting at the Pacific International Livestock Show in Portland, Oregon, November 19.

A diversion dam has been completed across the Rogue River at the site of Savage Rapids dam. It will divert water for use in the Grants Pass irrigation district.

Cooperative dairymen in Oregon have taken into court the matter of contract enforcement between themselves and certain milk distributors. Decision is not yet rendered.

Holstein breeders of Washington met recently at Yakima and formed a state association. F. S. Stimson of Seattle was chosen president and R. L. Rutter of Ellensburg, secretary.

Linn County fair grounds at Albany, Oregon, have been greatly beautified and made more efficient for fair purposes by the erection of a large number of barns and new buildings.

Avocado Advocates Address

By One of Them

IN the convention hall of the Hotel Green, Pasadena, on October 9, three speakers addressed the audience on "avocadan" subjects, freely interspersed with stories. In the following synopsis we have eliminated the latter, though all of them were good and several of fine application. The first speaker was Ernest Branton on

* * *

A Third Century With Tropical Fruits

In looking back over the past 33 years residence here it seems strange that the avocado and other tropical fruits did not earlier gain favorable recognition, for they have been here for nearly a century, and some of them possessed a flavor second to none we have today. As I have had a hand in growing and distributing this class of trees since 1887, I early took note of all that were growing in this vicinity. There were many parts of Los Angeles and the San Gabriel Valley where tropical fruits, especially avocados, cherimoyas and sapotes were grown, but of these the avocados were of the Mexican type and generally small and sparse of flesh, though excellent in flavor. Little selection and growing from seeds was practiced, for there was no local market and several years were required to bring the trees to fruition.

The best local fruit sampled by me a score of years back grew on a street corner in Tustin, Orange County. I well remember that on September 17, 1901, now more than 19 years ago, standing beneath this fruiting tree with Sam Tustin and the late Dr. A. J. Cook, discussing the merits of the crop above our heads. They were nearly round, very black and, as near as I can remember, about three inches in diameter. The tree was of good size and had fruited for several years. It must have been planted about 1880. It still is bearing fruits, although surrounded by oiled streets and concrete walk and curb.

About 1890 J. C. Harvey began the distribution of seeds received from Mexico and Mr. Murietta has told you somewhat of the history and progress since that time. In those days I was often at the Harvey, Murietta, Budington and other places watching the development of these trees. So too, about that time (1894) the plant firm I was with, Lyon & Cobbe, received an order from Lewis Bradbury for all the seedlings we could procure and I have wondered if the lot I collected did not contain the original Spinks tree.

In closing I wish to make a plea for an amendment to the present fruit standardization law that shall include avocados, that we may know at least when they are legally ripe. For even the grower does not always know when to pick. Some of the purple-black varieties are not ripe when fully colored and others must be picked before they are. The latter is true of one of Mr. Knight's most excellent introductions. This calls to mind that the last named variety I ate was a Knight, presented by Mr. Knight, and do not hesitate to state that I never ate a better avocado; so will close by saying "good Knight."

D. W. Coolidge followed with:

* * *

Seven Truths About the Avocado

Truth 1. The avocado is one of the most beautiful evergreen trees that

grows. Its spreading branches afford shade and comfort to man, mocking-bird and mealybug. Why plant pepper, acacia and other trees where you can grow the avocado?

Truth 2. The avocado tree can be, and is, successfully grown in California, particularly in the southern part. I haven't the exact figures, but I am assured that there are today more than 500 acres of avocado trees planted in orchard form, and perhaps as many more are grown in the gardens surrounding our homes.

Truth 3. The avocado tree will grow and bear fruit as regularly as any other fruit tree when the proper varieties are planted in proper localities in Southern California, and contrary to the belief of many the avocado is not over particular about the kind of soil it is grown in. I have seen very fine fruits grown in adobe, light sandy loam and decomposed granite soils. Although the tree is indigenous only to the tropics, we have varieties fully as hardy as any of the citrus, and the scope of this industry is wider than is generally believed. In beginning the industry we have all planted many inferior varieties, but each year we are gaining knowledge, and in planting nowadays we eliminate some of the varieties that a few years ago seemed desirable.

Truth 4. The fruit of the avocado is about the most tasteful and nourishing food that grows out of the ground. I repeat what I said at the dinner at the Maryland two years ago. I would persist in eating avocados if I knew they were a little less poisonous than arsenic, I like the taste so well; and if they were as bitter as quinine and in every way disagreeable to the palate I would continue to eat them, knowing their beneficial effects as a food and medicine. I maintain that the most delicate stomach can take the avocado when animal fat would upset it. I have heard that if one about to embark on a sea voyage would eat no other food than the avocado for the preceding 24 hours seasickness would be unknown.

Truth 5. Growing avocados has proved the most profitable of any horticultural experiment yet conducted in California. You all know for what this fruit is selling. From \$1 to \$2 each for fruits weighing a pound or more. One of our largest growers assured me that he had received as high as \$14 per dozen wholesale for his fruits and that a great part of the crop was marketed at from \$7 to \$9 per dozen.

Now it doesn't seem to me that any such prices will be obtained when we have thousands of acres of avocados where we now have a few thousand trees, but I maintain that there can never be any serious overproduction because there are only two small areas, Southern California and Southern Florida, where the avocado can be grown, and when it is considered that perhaps only about 1,000 growers living in the two favored sections have to grow this valuable food product for 100,000,000 people, I ask the question, How is it possible to overdo the avocado business? Another point, when we consider the proportions that the citrus product, merely a confection, has reached, what should we expect from the avocado, an all around food that

people will continue to buy because they like its taste and because of its nourishing food value. The government experts figure that a pound of avocado has as many food units as a pound of meat or eggs, and should it ultimately sell on this basis, there is 25 to 30 cents each for fruits weighing a pound. I really believe when the time comes that I can have avocados for 366 days in the year, I will cut meat entirely out of my diet.

Truth 6. One hundred years from now history will record that the highest civilization will cluster around the sections where the avocado is grown. The strongest people physically and mentally, the happiest and most beautiful children will be those who make the avocado, instead of meat, their daily diet. I have often marveled how babies and very young children take to the avocado at once. If I have a greater love for anything than the avocado, it is for ruddy, happy children.

I am one who has always believed in the human race, who has always believed that man is constantly rising, and while I am not a strict vegetarian, I have almost reached the point that I do not wish to be a participant in the slaughter of beautiful animals simply for food. I am sure I could never content myself on a diet of turnips or starchy vegetables alone—we must have fats; but the avocado comes in to fill this need. I say, speed up avocado growing, hasten the day when we can have a sufficient quantity of this fruit so that it may be sold at a price that all can afford.

Truth Seven is a definition of a lost opportunity. Everyone living in Southern California has the opportunity to possess for himself and family this most delectable of all foods. Every day that he fails to plant from one to 100 trees is surely a lost opportunity.

R. W. Hodgson finished with

* * *

Avocado Culture Now a Commercial Industry

Having followed the development of interest and the growth of knowledge regarding the culture of the avocado in Southern California for a period of years, I am forced to the conclusion that the raising of avocados in Southern California has now reached the stage of a commercial industry. The avocado as an addition to the list of fruits raised commercially has "arrived" and it probably would have reached this stage before this time were it not for the long remembered freeze of 1912 and '13, the famous heat wave of 1917, and the unusual shedding of fruits occurring the following season. These setbacks to the industry, however, were in themselves of very great value in that they demonstrated the entire unsuitability of certain districts for avocado culture and the weakness of a large number of varieties under test, materially reducing this number and thereby greatly aiding the industry in establishing it upon a commercial basis.

In the first place, sufficient experience has been accumulated to quite accurately outline the area in which avocados succeed in Southern California, and this area is sufficiently large to make the potential avocado industry of considerable magnitude. Secondly, at the present time it ap-

pears that there are in the neighborhood of a thousand acres planted to avocados in orchards from an acreage which must be considered as of commercial size. Then, too, there exists an ever increasing body of knowledge regarding cultural methods adapted to the raising of this fruit. Again, and of the greatest importance, the list of standard approved varieties has been reduced from more than 200 to five which are generally agreed upon as having qualities adapted to the commercial production of this fruit. Fifth, there exists a substantial and growing market demand for the product. And, lastly, the industry is now receiving recognition throughout the rest of the world as having reached the commercial stage in Southern California. Applying all of these tests to avocado culture clearly indicates that it has passed well into the commercial era.

I have been certain that the avocado would eventually reach the commercial stage ever since I became interested in this industry and for a number of outstanding reasons. American consumers are today showing a much greater interest in new and strange fruits than ever before. The publicity given to tropical and subtropical fruits by the federal department of agriculture and the various colleges of agriculture is no doubt largely responsible for this condition, but the fact remains that today it is much easier to introduce a new fruit to the markets of this country than ever before, a fortunate condition indeed for the growing avocado industry. The marked excellence of the product is another outstanding reason why the avocado was destined to become a commercial fruit. There is no other fruit like it. It possesses neither the acid nor the sugar of the usual fruits to which the American public is accustomed. Its rich nutty flavor makes an instant and almost universal appeal once the consumer becomes acquainted with it. On the basis of nutritional value, the avocado has no competitor. The ripe olive, which most closely approaches it both in flavor and analysis, during the past 20 years has grown into a great industry in California. The avocado is all ready to serve when ripe and does not need any process of curing or preserving to render it edible. On the basis of nutritive value it can be placed on the market at a price at which it need not fear competition with any other food product. Then, too, varieties exist so that a constant supply of fruit may be placed on the market all the year around, a factor of no little importance in establishing a new fruit in the markets of this country.

REMEDY FOR SLUGS

Slugs are becoming of increasing importance as pests in gardens and on ornamentals in California. The Oregon agricultural experiment station has recently issued a bulletin on the control of these pests, from which the following valuable suggestions are taken:

Many of the poisons in common use as insecticides are of questionable value in controlling slugs. Bordeaux mixture, either liquid or dry, is an excellent repellent. Calcium arsenate prepared as a bait is readily devoured and is highly toxic to slugs. A combination of repellent and a poison bait constitutes the most effective control procedure.

In our tests Bordeaux mixture 4-4-50 sprayed on the plants combined with the use of a poison bait of calcium arsenate, 1 part to 16 parts chopped lettuce scattered in small heaps over the affected area gave a high degree of efficiency in plant protection and slug control.

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Saturday October 30, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

EDITORIALETTES

It is stated that recent reductions in farm products prices mean a loss to farmers of from one and three-quarters to two billions of dollars. We haven't noticed any particular suffering on the part of shoe dealers and others because of this reduction. There seems to be ability to hold up prices until a sufficient number of months has elapsed after the farmer has sold (or given away) his hides for a nominal sum, until prices shall return to normal. We did, however, but a few days ago see a window filled with shoes. One pair was marked "\$4.00 Off the Price of This Shoe"; another, "\$5.00 Off This Shoe," and so on. Inquiry developed the fact, however, that the "\$5.00 Off" shoe had originally been marked at the nominal price of \$26, still leaving \$21 as its retail price. A most commendable sacrifice! The farmer, however, gets his reductions at first hand and two billions of his wealth is taken off with the first sag in the market.

Prof. Reed of the University of California suggests "Prune orange trees for fruit; not for firewood." "An orange tree left to itself becomes so dense that many branches suffer from overshadowing and fruit wood dies." Perhaps this is advisable as to oranges, but as to lemons we are not so certain that the firewood production might not be preferred. For in-

stance, we recently saw one cord of wood delivered in the city of Los Angeles for which the dealer was paid \$32. That surely beats growing lemons. However, next Tuesday is election.

"There is only one better man than the man who gets behind and pushes, and that is the man who gets ahead and pulls." The trouble is we often want to wait until we "get the pull" rather than pitch in and develop one.

The United States has about one-sixteenth of the earth's population, yet produces one-fourth of its wheat and three-fourths of its corn and cotton.

Nursery agents of the East are working a cute one. As an inducement to buy their wares they contract

VOTE "YES" ON "9—HIGHWAY BONDS"

We believe our state papers have as a rule given more energy and space to discussion of compulsory vaccination, chiropractic, poison act and a few other of the measures that will appear on our ballot next Tuesday than they have to the one most important—to the farmer at least—"9—Highway Bonds."

This initiative measure does not call for increasing the bond issue. Read on your ballot: "Directs cancellation of unsold forty thousand bonds, etc." In other words these bonds which were almost unanimously authorized at a former election are to be cancelled and a reissue made at a rate of interest which will make possible their sale. While the dollar of today has half the purchasing value of that of five years ago, its value from an interest standpoint has increased by approximately 50 per cent. In other words, it takes more money to buy money. But the demand for cheaper production and cheaper transportation is so insistent that we are compelled to look for a greater extension and improvement of our road system. The bonds formerly voted commanded four per cent. It is necessary to pay around six even with such magnificent security as that of California. And as the fundamental law of this state demands that all bonds shall be disposed of at par the only possible way of securing the money for the state's advancement is through the proper rate of interest.

Vote "Yes" on "9—Highway Bonds."

to prune and to spray the trees, once they are planted in orchard form, for a period of five years. The contract is not signed by a responsible nurseryman but simply by the agent. A limited imagination only is necessary to determine how carefully such a "contract" will be fulfilled.

Corn grown in the Argentine is now being sold in New York at 40 cents per bushel under American grown corn.

We recently saw the claim that "the crime of this age is the waste of leisure time." It seems rather an overstatement, but when we look at all the cost of this waste of our leisure, the loss of opportunity and all, perhaps it approaches crime. Look at the entrance to any of our movies, football and other games, and it seems that the world is demanding that its amusement be handed to it without effort—never mind the quality. Swimming, tennis, golf, baseball—not from bleachers but on the diamond—and other real life giving sports and recreation do not seem to command such a following as do the more passive amusements which neither exercise, improve nor inspire. Perhaps of all who would seek pleasure the farmer is most justified in asking for passive amusement, for his day ordinarily is filled with "re-creative exercise." But even he may well be content with less slush and jazz. If holding the baby by the fireplace or playing a few educational games with the kiddies, listening to one of the world's greatest artists in vocal or instrumental music which is made possible by a well selected library of phonograph records, does not afford sufficient entertainment and uplift for one evening, there are still a number of good books made and in the making. But possibly we have forgotten how to read.

Poultry people have an eye on initiative "No. 7—Prohibiting Vivisection," and will vote unanimously with a big X opposite "NO." At a recent meeting called by the state board of health in San Francisco, S. S. Knight of Petaluma said: "Last year the poultry products of California brought into existence over \$40,000,000. This proposed initiative measure No. 7, if enacted, will do one of two things. You people who live in the cities are either going to see the price of eggs doubled or you will have to get your eggs from outside the state. That is, the poultrymen will either have to go out of business because they will lose money, or they will have to raise their prices." * * * About 25 years ago we had our first serious setback, when an epidemic of chicken-pox broke out among 21,000 hens on one ranch. Four

or five of the largest poultrymen were put completely out of business by this outbreak. Immediately investigation was begun, which investigation continued over a period of years, and every bit of this investigation would have been proscribed had this initiative Number 7 been in force at that time. As a result of these investigations we know the thing we have to do is to vaccinate against this disease." All producers vote "No" on 7.

The poisoned olive scare has largely passed. The federal department of agriculture, the state department and the state university have united in finding the cause of the trouble and recommending procedure in the future. The case is exactly along the same line as other poisoning cases in former years with sausages, with canned fruits and vegetables and even with cheese. The consuming public now understands these cases and the precautions which are being taken by processors and shippers give reasonable assurance that another case of poisoning will never occur, or if it does it will be so rare that, like the canned vegetable scare, it will have no effect on the amount of this healthful fruit to be consumed.

MASKEW RETIRES

Frederick Maskew, California's chief quarantine officer, retires after nearly a third of a century in public service, mostly inspection or quarantine work. Regarding Mr. Maskew's service, State Director Hecke says: "The great value of the horticultural quarantine work under Mr. Maskew's supervision at once becomes apparent and I feel that I am voicing the sentiment of all when I say that under his supervision was developed the foremost plant quarantine service in the world."

SINGLE TAX

Referring to a short editorial note in the issue of October 16 in which we spoke of land equalization as possible through means other than the single tax an Eldorado County subscriber writes:

"Personal property is created by individuals. It is private property. When we take part of a house or crop or livestock, we violate the right of private property and in the name of the state commit robbery. But when we tax ground values we take from individuals what does not belong to them but belongs to the community. The value of the land has no reference to production or the cost of production, as has the value of houses, horses or other things; for land is not produced by man, it was created by God. It was not made for certain people but for the human race as a whole, to make a living from. The value of land does not come from the exertion of labor on land, for the value thus produced is a value of improvement. That value attached to any piece of land means that that piece of land is more desirable than the land which other citizens may obtain and that they are more willing to pay a premium for permission to use it. Justice therefore requires that this premium of value shall be taken for the benefit of all in order to secure to all their equal rights."

As to the Creator we grant the claim of our subscriber, but we also recall that the Sweet Singer of Israel at one time remarked regarding the man who fears the Lord: "His seed shall inherit the earth." Inheritance has been passed on from father to son ever since that song was sung and to begin today to declare that inheritance invalid, to destroy our love of our own homes because of a claim that all the earth should be possessed in common appeals to us as not only unwise but unpatriotic. We believe the strongest incentive to love of our country comes from the fact that our country stands for the protection, the very preservation of our home life. The present tendency in this state is toward creating a greater number of small home farms. The truest American citizenship is developed in such homes.

The farming lands already have a great enough burden to bear without taking the entire burden of taxation. The census has shown the drift to the cities (where most of the personal property is possessed), to be increasing every decade. Why drive all people into the same effort to secure more stocks or bonds or personal property wealth?

Take a look at California's richest valleys, especially those around the largest population centers. It is possible to drive by—literally—miles of small shacks where richest lands have been taken by thrifty Japanese who are the only ones who can farm with sufficient intensiveness to make the high rental required. The white American user of the soil desires equal opportunities with the white creator of personal property. He wishes to give to his children high school education, opportunities to learn music, the best literature and to have an American homelike home. If he cannot have these advantages he leaves the soil, and the Oriental who is willing to forego those advantages, to deny himself and to pay the high land tax is the one who occupies the land, and it is an axiom that the possessor of the land of today becomes the ruler of the country tomorrow.

We cannot see where higher citizenship will be exercised on next Tuesday than by voting "Yes" on "1—Alien Land Law" and "No" on "20—Land Values Taxation."

Remember, an X opposite "Yes" on the first and an X opposite "No" on the last of the initiative measures which appear on the ballot

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A PERSONAL MESSAGE TO THE READERS OF CALIFORNIA CULTIVATOR

"Labor is relatively the highest priced necessity the employer must pay for—yet its cost is cheap if the employee be efficient. A Man's earning ability is not measured solely by hours, but rather by his skill, his training and the fundamental knowledge he commands. I believe that every reader of the California Cultivator will agree with me that sound, practical training of the farm boy and employee will do most in solving the labor problem. With the exorbitant cost of farm power machinery and the high price of labor, it behooves every farmer to see that those who operate his machines and power-driven implements are properly trained and can be relied upon."

J. A. ROSENKRANZ,
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Your tuition fee pays for perpetual scholarship. You can return any time for additional training. We give diplomas to graduates, which certify their proficiency.

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We have just issued a profusely illustrated Book of Facts, which tells about all the opportunities for trained men in Southern California and gives detailed information about the six separate courses offered for one tuition fee at this school.

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What does an hour saved each morning mean to you during the busy season?

Grease cups have been almost eliminated in the Best Tracklayer. Lubrication has been simplified by running wearing parts in baths of oil and by using anti-friction bearings. Truck rollers and drive sprockets are oiled by special pipes running direct from the black-oil tank. Instead of spending an hour each morning filling and turning down grease cups, you are off for the field in 10 minutes.

This feature of the Best Tracklayer is just one of the many developments resulting from long years of tractor-building experience. The Best is not a new tractor. Every piece of its mechanism has been an evolution. Design, choice of materials and workmanship of the Best Tracklayer have been time-tried, and this tractor is famous for its power, endurance, reliability and economy of operation.

Tracks are made of manganese steel. Powerful heavy-duty engine is simple in design, with all parts enclosed. 36 Timken and Hyatt bearings used throughout. Working parts entirely housed. Three-point suspension relieves engine, transmission and frame of injurious jolts and twists. Independently operated tracks enable tractor to turn in its own length. Non-friction, greaseless rocker joints for track links double life of track. No belts or chains. Every working part instantly accessible.

Write for our complete catalog. It tells an interesting tractor story.

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**BEST
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60 H. P. at Pulley
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Shipping Point Inspection Service



ARLOT shippers of fruits and vegetables in California have long felt the need of government inspection at shipping point, similar to that which is available to receivers at destination. The United States bureau of markets has repeatedly been asked to establish such a service in California. Owing to the fact that the funds available for inspection are restricted to terminal markets, it has been impossible for the bureau to establish such work even in a small way at California shipping points.

Several months ago G. H. Hecke, director of the state department of agriculture, recognizing the real need for such a service, took steps to establish a system which would give to the shippers of California products a dependable and thoroughly reliable inspection of their cars whenever they desired. Mr. Hecke's first move, which won the approval of all interests, was the appointment of F. W. Read, one of the bureau of markets most valued men, to take charge of the project. Mr. Read's last year with the federal government had been spent in California, where he had charge of the bureau of markets office in Los Angeles and became well and favorably known to the trade as a hustler and thoroughly experienced in the produce business.

Mr. Read had been familiar with the efforts of several other states to establish such a service and with the somewhat unsatisfactory results which were secured because of the inexperience of the inspectors. He resolved at the outset to profit by others' experience and to employ only men whose work had been in the produce business and who knew from practical training the problems confronting shippers.

Accordingly the trade was agreeably surprised to learn of the appointment of L. J. Weishaar to assist in the organization and administration work. Mr. Weishaar had ten years' experience with the large house on South Water Street in Chicago and for the past three years has been a food products inspector for the bureau of markets in Memphis, Kansas City and Chicago. Both Mr. Read and Mr. Weishaar continue on a working agreement with the bureau of markets.

H. H. Warner, who has been associated with several of the large shipping organizations in California for the past seven years, and who also was an employee of the bureau of markets for two years during the war, has been given supervision of the shipping point inspection in the southern part of the state. Mr. Warner originally opened and remained in charge for a year of the Los Angeles office of the bureau of markets and is well known, particularly in the south, where his work will be.

This service by duly authorized inspectors who are salaried state employees is available upon request on any one or any number of carloads of fruits or vegetables originating within the state. With each inspection the applicant is given a certificate which is practically the same in form as that used by the federal inspectors at terminal markets. The statements as to the quality and condition of the products inspected are acceptable as prima facie evidence in any court in the state and will, no doubt, carry more than ordinary weight in litigation even in other states.

In general the same methods of describing the products will be used by the inspectors in California as are in use by federal inspectors at destination, so that in case the same car were inspected both at loading and receiving points, a direct comparison could easily be made and the approximate extent of damage in transit determined. Special attention is paid to the manner of loading and to the condition of car equipment.

A fee of \$5 is charged for the inspection of straight cars and \$10 for cars containing more than five varieties or commodities. This charge is designed to meet the expenses of the work, so that eventually the service will be self supporting. Inspections will be made upon the request of shippers, buying broker, Eastern purchaser, railroads or any interested parties.

The inspection service has been in

effect in certain sections of the central and northern part of the state for about two months. Experienced men have been inspecting practically all the apples from the Sebastopol and Watsonville districts at the request of the shippers. Nearly all of the grapes from Lodi and a large number of cars moving from Fresno are also being inspected. The results so far on about 1,500 cars have proven the plan to be entirely practicable and the work satisfactory.

With the opening of the southern branch office in Room 217, Wholesale Terminal Building, the same impartial and thorough service is available to shippers of vegetables and fruits south of Tehachapi. The office expects to be kept busy through the fall and winter months on tomatoes, cauliflower, lettuce, celery, cabbage, etc. During the winter and spring it is planned to have inspectors available in the Imperial and Coachella Valleys. Several shippers of citrus fruits are also anxious to secure certificates of inspection, particularly on Tulare County Navels.

The extent to which the work will grow will depend upon the demand for the service. The project must be made self supporting and the force will be enlarged, and various deals covered just as rapidly as the number of requests for inspection warrant.

OLIVES AT A HUNDRED AND SIXTY

By F. A. Chatters



POOLING of this season's crop of unsold Mission and Manzanillo olives and placing them in the hands of a committee of local growers has been voted at a meeting of representative orchardists at Lindsay.

Growers representing the entire unsold acreage in Tulare County are being organized with the object of assigning their crops to a committee to fix a price and handle the sales.

Olives that cannot be disposed of at a fair price will be barreled in a salt solution, it is proposed, and held until the market improves, or sold next spring for oil. It is also proposed to send a salesman direct to the Eastern markets, especially New York and Chicago, to dispose of the local pool.

At a meeting last Wednesday W. B. Kiggins was elected permanent chairman and R. M. Carr permanent secretary of a Tulare County olive growers association. The committee chosen to handle the pooling of this season's crop is composed of C. W. Braswell, Lindsay; B. J. Morey, Porterville and Strathmore; T. F. Bovee, Exeter; L. J. Williams, Orosi, and A. E. Imbler, Delano.

It was pointed out at the meeting that with most of this year's crop in Tulare County, the growers should hold out for a fair price. Sales as high as \$160 have been made in the Lindsay district. It was also suggested that if a surplus develops the fruit be canned and sent to the East free as samples to augment the advertising campaign now under way.

Latest accurate figure on the California olive crop this year is 9,000 tons, as compared with 13,000 tons in 1918 and 14,000 tons in 1919. The Tulare County district is practically the only district in the state approaching anything like a normal crop and it is here that buyers must come for this year's business.

BENEFICIAL INSECTS RECEIVED FROM CAPE TOWN

The first installment of beneficial parasite material from E. W. Rust, field entomologist, Cape Town, South Africa, has been received by Entomologist Harry S. Smith at the California insectary. The material, consisting largely of parasites of the black scale (*Saissetia oleae*), so destructive to citrus trees, will be reared at the Sacramento insectary for future distribution in the citrus groves of California. Mr. Rust, a field entomologist and explorer of the California department of agriculture, has received valuable assistance from the authorities at Cape Town, and the progress of his investigations points to the ultimate success of the California department's work in controlling the black scale in this state.

GYPSY MOTH

The most serious problem which has ever confronted Eastern horticulturists has been brought about by the introduction of gypsy moth. It swept through the orchards and forests of a great portion of New England. Millions have been spent in the effort to control it and one or two sections where the infestation was very limited have claimed complete eradication. However, now and then a new outbreak occurs and warning has been sent to horticultural inspectors the United States over by the department of agriculture.

"Early in July a very serious infestation of gypsy moth was found on the Duke Estate at Somerville, New Jersey. For several years prior to this time this insect has not been found outside of New England, except a few colonies that have been exterminated. Enough work has been done in this infestation and the surrounding territory to determine that approximately 100 square miles is infested. This area may be increased after thorough scouting is done during the winter, when the foliage has fallen from the trees. It seems probable that the original infestation was brought to the Duke estate on a shipment of foreign stock, probably on blue spruce, which was imported in 1909.

"The situation is complicated and made far more dangerous owing to the fact that since 1913 many shipments of trees have been sent out from this state. Some have gone to private parties for planting, but a considerable number have been sold to nursery firms and landscape architects and rehandled. An effort is being made to trace all of these shipments, but it is practically impossible to determine the ultimate destination of some of the trees handled by nursery firms. Infestations are found in nurseries in New Jersey and New York that received stock from this source. An attempt is being made to stamp out these infestations and special inspections of all stock going from these nurseries are being made by this bureau in cooperation with the states concerned. As soon as the deciduous foliage is down this fall, intensive scouting will be taken up to determine the extent of the infestation. After this information is at hand doubtless these areas will be covered by federal quarantine.

"It may not be out of place to state that the funds of the bureau of entomology that are at present available for gypsy moth field work are very limited, owing to severe reduction in the appropriation and increased cost of operation, and that unless emergency funds are made available by congress and the states concerned it will be impossible to handle the situation effectively.

VELVET BEANS

By Roy R. Mathews

Having read much about the soil building qualities of these beans and the wonderful growth of vine, I planted four rows between each pair of six year old orange tree rows, May 15, thinking I would have quite a carpet of green to keep the ground shaded and cool during the excessive June heat spells.

These were planted (in Buena Park section of Orange County) where others were planting Limas and Blackeyes, but did not come up for nearly ten days, the weather turning cool after a three-fourths inch rain May 21. I secured less than half a stand and what did come up stood still until our hot growing weather came in July, when they made a very satisfactory growth and continued growing rapidly until about the middle of August, when our nights turned cool and foggy. Now they are a mass of vines 30 to 36 inches high on light sandy loam and 18 inches high on the lightest of sand.

I raised Blackeyes on this same soil in 1915, '16, '17 and '18, but in 1919 the orchard was cultivated clean. In

the winter of 1917, '18 and '19 I had a winter cover crop of bur clover and Melilotus Indica. In 1917 the orange trees received about four cubic feet of poultry manure and in 1919 about five cubic feet of dairy manure. I now have an excellent set of fruit; trees all are a rich dark green and am propping some trees now.

I planted 58 pounds of Spotted Velvet bean seed in 60 rows 630 feet long. The foliage is heavier than Blackeyes or Limas on same soil. Better stand would be secured by waiting until July 1 to plant, as I am satisfied these beans require warm nights as well as warm days to secure a normal germination and growth. My water bills are about 50 per cent more on account of raising this cover crop over clean cultivation of citrus trees. They have a heavy root system but do not have the number of nodules that Blackeye beans do on the same soil. They are a failure for a green June mulch here.

THE APPLE LAW WITH REFERENCE TO LADY APPLES

"The California apple standardization law states that California Fancy Lady and Winesap apples shall be not less than two inches when measured through the widest portion of cross section," says F. W. Read, in charge of the standardization service. In many ways this section of the law

is impracticable. Lady and Winesap apples are two widely different varieties and it is not wholly proper to group them together. Moreover, up to a certain point, the smaller the Lady apple the better the trade likes it, as they are used largely for ornamental purposes.

We can see no particular reason for insisting that in order to be classified as "California Fancy" a Lady apple must be not less than two inches in diameter. This variety is usually packed "face and fill," or "jumbled," and there will be no objection on the part of this office if Lady apples are shipped in this manner if the containers are so marked.

If the containers are marked "California Fancy," "B," or "C" grade, they should meet all the requirements of the respective grades, with the exception of size.

AN UNDETERMINED VINEYARD PEST

R. L. Nougaret, in charge of the viticulture service of the California department of agriculture, writes that insect pests and plant diseases of the vine will be fully discussed at the coming fifty-third convention of fruit growers and farmers, to be held at Fresno in November.

Especial attention will be given to the matter of an undetermined disease that has been more prevalent this year

in vineyards in the state than ever before. At this time no information is available as to its origin, cause or prevention, but from the data collected this year it is evident that systematic and concerted measures must be adopted at once which will make possible the repression of this new vineyard pest.

THE TANGELO

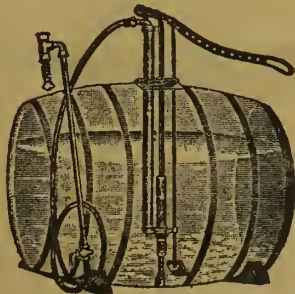
The tangelo is only now coming into popular favor, yet it is not new to citrus sections. In its issue of July 7, 1905, the Cultivator published the following note:

"Another group of desirable fruits has been secured by the crossing of the Dancy tangerine with the pomelo, which gives a fruit neither pomelo nor tangerine, not so sour nor so bitter as the pomelo, yet with more tartness and more appetizing as a breakfast fruit than the tangerine. It is eaten from the hand, more as a tangerine is, by separating sections and dipping in sugar, rather than by scooping out the pulp, as is ordinarily done in eating the pomelo. It is thought that this fruit will be a favorite with those who have found the pomelo too bitter or too sour for their taste."

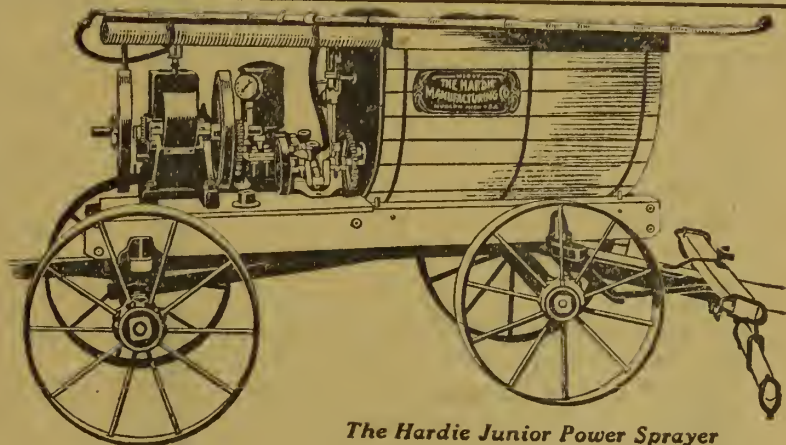
For growers who need greater capacity and pressure, there is the famous Hardie Triplex Sprayer and other models.



The Hardie all-brass bucket pump, the only bucket pump on the market with mechanical agitator, 200 pounds pressure with 35 strokes per minute.



Hardie barrel sprayer—mounted on the side for low height and freedom from upsetting. Pumps out all the liquid. Equipped with agitator.



The Hardie Junior Power Sprayer

Hardie Spraying Equipment for the Small Grower

There is a Hardie Sprayer for every spraying need.

The Hardie Junior is the very best power sprayer for the small grower. Its price is low, its quality is high. It is guaranteed to supply two lines of hose and maintain a pressure of 200 pounds. The tank has a capacity of 150 gallons. For growers whose spraying is unusually light, there are Hardie bucket and barrel pumps of just the size you need. Mechanical agitators are a part of every Hardie outfit.

Hardie hand sprayers are the easiest to operate and the lightest two features of unquestionable value.

We gladly offer you our twenty years experience in helping you select the right sprayer—we carry a complete line of sprayers and sprayer accessories.

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Senator Phelan has no need for idle promises or platform patter. His fighting record for California's rights speaks for itself.

Keep California White

You "scratch" the SOIL to grow good crops!

Make your BALLOT count for California.

Powerful interests threaten the agricultural associations of California. Your fight against this persecution demands the return to Congress of Senator Phelan. His voice and vote have consistently challenged all such attacks.

Senator Phelan advocates a protective tariff on California rice and beans. He voted for an increased tariff on lemons. He fought an increase of freight rates on cantaloupes and vegetables. To save the California fruit crop in 1919, he secured priority orders for tin plate shipments to California canneries in the face of country-wide competition. California cotton was saved by his action in securing an appropriation to fight the boll weevil in Imperial Valley. He secured for California a big share in the benefits of the Farm Loan Law.

Always a progressive in thought and action, Senator Phelan, himself a member of the Rice Growers' Association and the California Prune and Apricot Growers, Inc., has worked and voted for farmers cooperative associations. He fought for the California Associated Raisin Company. Its president, Wylie M. Giffen, commended him thus: "The raisin growers of California are immensely pleased with your action."

Above all, Senator Phelan knows how best to meet the menace of the "silent invasion." His fight to save California from the Jap is your fight.

Re-elect
JAMES D.
PHELAN
U.S. Senator

CAPITALIZATION OF PRODUCERS

(Continued from Cover Page.)

in favor of the frills and non-essentials. We cannot build a sound national economic structure unless the foundation is properly laid."

After discussing three fundamentals of successful agriculture, efficient transportation, finance and labor, the statement concludes.

"As cities increase in population, the farmer assumes greater relative importance. Food will be the biggest factor in world economics for many years to come. We cannot rehabilitate the devastated fields of Europe in two nor in five years. Even so energetic a people as we Americans could not get the Southern states back to normal production until ten years following the Civil War.

"We are facing the dawn of a new era in agriculture—farming has evolved into a profession requiring the best of brains and skill. The farmer will no longer be looked upon in a different light from the city man. The barriers between city and farm life will be wiped out—the doors will be swung wide open. The future security of American agriculture lies in the direction of making farm life more attractive from the social standpoint, and while the development of a more satisfying rural society must depend largely on the activity of the country people themselves, nevertheless the cities may render a distinct service in the work of improving the social conditions of the country.

"In order for the interests of the farmer to be properly and permanently protected, a common understand-

ing must be secured between agriculture and other interests of the nation."

THE CITRUS BLACK FLY

Edwin T. Meredith, secretary of agriculture, has called a public hearing to consider the advisability of quarantining Cuba, the Bahamas, Jamaica, Canal Zone, Costa Rica, India, Philippine Islands, Ceylon and Java on account of the citrus black fly, an insect pest which attacks many plants in the regions named, and which is not known to occur in the United States. There is danger of bringing this insect into this country in connection with shipments of fruits and vegetables in the raw or unmanufactured state, of plants or portions of plants used as packing material or otherwise, and in litter and rubbish in railway cars from Cuba, as well as in or on the cars themselves. The hearing will be held in Washington, December 20, 1920. All persons interested in the proposed quarantine may attend and be heard either in person or by attorney.

The restrictions which may be placed on the movement of the products named on account of the citrus black fly will not necessarily be an embargo, as provision will probably be made for the entry of fruits and vegetables at certain designated ports after inspection and, if necessary, cleaning or disinfection under the supervision of an inspector of the department. Disinfection may also be required of all railway cars and other vehicles from Cuba, as well as the thorough cleaning of railway cars of all litter and rubbish before embarkation.

SULPHUR



It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILD-DEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand and Fleur de Soufre, packed in double sacks, are the fluffiest

and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100% pure, in double sacks, for Dry Dusting and making Paste Sulphurs.

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men \$5 per day for making the solution and applying same.

To create additional available plant food and prevent smut in grain, drill into the soil 110 pounds per acre of TORO BRAND SPECIALLY PREPARED AGRICULTURAL SULPHUR—or our DIAMOND "S" BRAND REFINED POWDERED SULPHUR. This soil treatment has increased various crops up to 500%. Send for Circulars No. 6, 7 and 8.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dusting Sulphur, Mixtures, etc.

Carried in stock and mixed to order.

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We are equipped to make immediate shipments. Send for Price-List and Samples.

Ask us for prices for Carbon Bisulphide, the surest remedy for destroying ground squirrels.



GRAPE MEALYBUG TO BE DISCUSSED

County Horticultural Commissioner Rutherford has advised Director Hecke that on November 6 a meeting of Stanislaus grape growers will be held at Modesto to consider ways and means of combating the grape mealybug, which has appeared in certain localities in his county.

Especial attention also will be given to the matter of an undetermined disease that has been more prevalent this year in vineyards in the state than ever before. At this time no information is available as to its origin, cause or prevention, but from the data collected this year it is evident that systematic and concerted measures must be adopted at once, which will make possible the repression of this new vineyard pest.

R. L. Nougaret, in charge of the viticulture service, will represent the state department of agriculture at this meeting, and the results of this conference should be of great interest and value to grape growers all over the state.

FERTILIZER CONFERENCE

A conference of the licensed fertilizer manufacturers and dealers of California was held in the office of the director of agriculture at Sacramento on October 11. The conference was called for a discussion of matters of general interest to the fertilizer industry and an exchange of ideas on how the state fertilizer law may most effectively serve the interests of both seller and buyer.

SACRAMENTO VALLEY PEAR CROP

"The cleanest, most wonderful crop in the history of pear growing," says T. D. Urbahns, field entomologist of the California department of agriculture, surveying the 1920 pear season. Entomologist Urbahns estimates that by timely well ordered spraying individual orchards can produce a crop 95 per cent free of codling moth.

ARSENATE OF LEAD PATENTS

The California Spray Chemical Company writes regarding the ending of a lawsuit begun many years ago against an Eastern spray company. To protect the validity of patents on arsenate of lead Messrs. E. E. Luther and W. H. Volck have persisted in maintaining their fight. The hearing took place last June before the circuit court of appeals and the final decision was only handed down a few days ago sustaining the validity of the patents of the California Spray Chemical Company.

FAGEOL
WALKING
TRACTOR

Four years of successful operation has proven conclusively the exceptional qualities of this tractor; its dependability in every class of farm work under all conditions of soil is most unusual.

Because of its superiority, demand is far in excess of factory capacity, notwithstanding frequent enlargements.

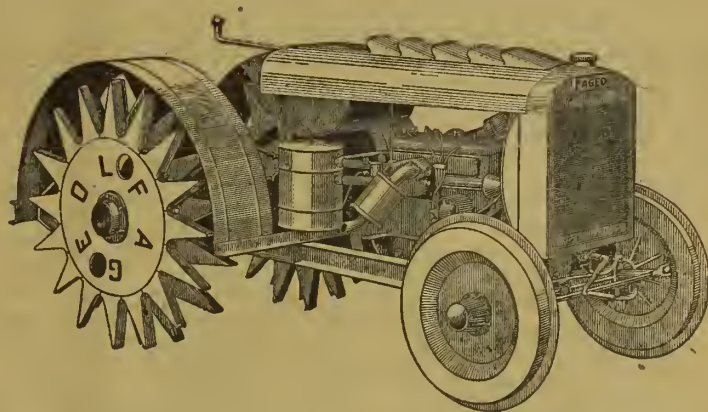
Exclusive Fageol Features
Increase their operating range
Reduce their operating cost

See your local dealer immediately. He has a new plan that will make delivery when you want it certain

Butler-Veitch

INCORPORATED

Sales Organization—Fageol Products

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TEAGUE TREES

Are the product of Thirty Years' experience in growing Quality Nursery stock.

CITRUS TREES

Grown from Selected Buds. We are now booking orders for 1921 delivery. Place your order early and be sure of getting the best.

AVOCADOS

We handle all of the recommended varieties budded on hardy Mexican seedlings.

FEIJOAS

Excellent for jellies and preserves. Perfectly hardy and quite prolific. We can supply grafted plants from the large fruiting varieties.

Send for our new descriptive Price List.

The R. M. Teague Nurseries

Box A

San Dimas, California

Founded in 1889 by R. M. Teague



PLANT FIG and PEAR TREES For PROFIT

Order Fruit Trees NOW—Stock Scarce

Write For Price List—Full Line—Good Stock

CITRUS, TROPICAL and Full Line of ORNAMENTAL PLANTS
PIONEER NURSERY OF MONROVIA

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

ALFALFA SEED

A Letter to California Farmers and Seedsmen

During the past sixty days we have selected for our trade approximately 1,000 bags of the finest and purest alfalfa seed grown in the Yuma Valley, and until further notice will fill all orders at the following prices:

Hairy Peruvian 35c. Smooth Peruvian 29c.

American (Common) 24c.

DELIVERED BY EXPRESS. WE PAY THE CHARGES

The Hairy Peruvian and Smooth Peruvian comprising our stock come from fields with absolutely PERFECT PEDIGREES. Every bag is CERTIFIED, LABELED AND SEALED under direction of the State Agricultural Department. All three varieties show a fine, golden color, and were carefully selected for high purity and germination.

For 11 years our seed has won first prize at the Arizona State Fair in competition with other growers and dealers of the State.

At the Fourteenth International Soil-Products Exposition held in Kansas City last year, in competition with the entire United States, our seed won BOTH FIRST AND SECOND PRIZES.

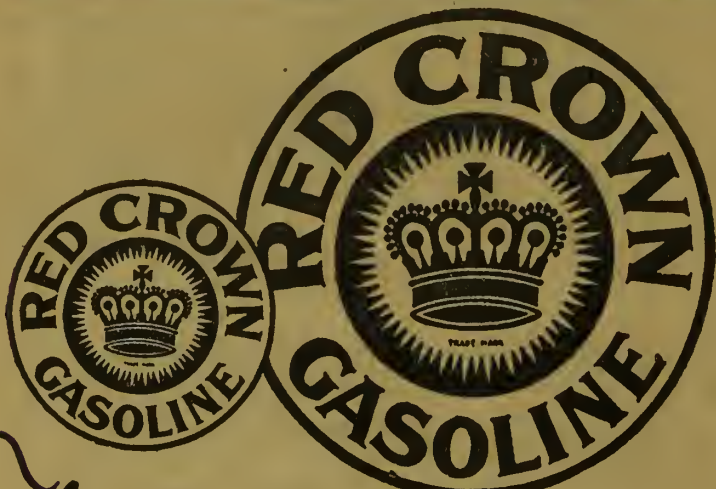
We are proud of this record. We have a reputation to maintain. We guarantee every bag of seed we sell to be exactly as represented.

Place your orders now and take advantage of the low prices ruling at the beginning of the season.

Alfalfa Seed Company, Inc.

Yuma, Arizona

Growers—Recleaners—Wholesale Dealers



The Gasoline of Quality

The "Red Crown" sign stands for the gasoline with a continuous chain of boiling points.

STANDARD OIL COMPANY
(California)

KROGH PUMP AND MACHINERY COMPANY

147-159 Beale St., San Francisco, Cal.

Krogh Pumps are Absolutely Water Balanced

No End Thrust Possible

No Set Collars Used

The No Trouble Pump



Krogh Direct Motor Driven Pump

Fitted With Ring
Oiling Bearings

Renewable Bab-
bitted Bushings

Ring Oiling Gland

We also build deep well turbines, deep well plungers, horizontal and vertical pumps for mining, irrigation, drainage.



Farm Profits Survey

FIGURES on farm profits, covering seven years in two areas and five years in a third, have been made public by the United States department of agriculture. These figures show that comparatively few of the farmers in the groups studied have been making large profits during the recent years of comparatively high prices; that their average return on investments increased from about four per cent in 1918 to seven per cent in 1918; that most of them are making less than \$500 cash per year over and above the things the farm furnishes toward the family living, which, however, constitute a very important factor.

Representatives of the department visited these farms year after year, taking records covering the farm business under the following heads: Distribution of farm area; crop yields; amount of work stock and of other livestock; amount of labor used; amount and distribution of farm capital; amount and distribution of receipts and expenses; value of the family living obtained from the farm; amounts of the more important products sold, and prices received. From the figures thus obtained the farm income (receipts less expenses), and the labor income (farm income less five per cent on investment) have been computed for each farm and for each group of farms.

The average farm income of the 25 farmers visited in Washington County, Ohio, for the seven years 1912-18, was \$610; the labor income, \$276; the return on investment, 4.6 per cent. In addition to the farm income the farmers had food, fuel and house rent, estimated to be worth, on the average, \$359 per year. For 1912 the farm income of these farms averaged \$456, and for 1918 the average was \$719. These farms are in a hilly section, where the soil is not especially fertile.

The 100 farmers in Clinton County, Indiana, being on better land than the Ohio farmers, made a correspondingly better showing. Their farm incomes averaged \$1,856 for the seven years, 1910 and 1913-18, and their labor incomes, \$558. Return on capital was 5.7, and food, fuel and house rent furnished by the farm, \$425. The average farm income of these farms increased from \$1,282 in 1910 to \$2,978 in 1918.

The farm income of the 60 Wisconsin farms averaged \$1,293 for the five years, 1913-18, the labor income \$408, and return on investment—determined by deducting from the farm income the value of the farmer's labor—4.7 per cent. The average farm income ranged from \$1,079 in 1913 to \$1,990 in 1918. On most of these farms the principal source of income is dairying.

Of the 185 farmers in the three areas, none made a labor income of \$1,000 for every year of the study, but 18 in the Indiana area and seven in the Wisconsin area made labor incomes averaging over \$1,000 per year for the period. Four farmers (two per cent of the entire number) made over \$500 labor income every year. Averaging labor income and loss over the whole time, 15 per cent of the farmers failed to make any labor income at all. Ten per cent failed even to make five per cent interest on investment in any year of the study.

Department specialists point out that though farm incomes in most cases showed a marked increase during the years 1916-18, as compared with incomes for 1912-15, these increases are more apparent than real, in view of the decrease in the purchasing power of the dollar. The turnover for the recent years was larger than for the earlier years, but the returns were relatively little larger, if measured in terms of the things it would buy rather than in terms of dollars and cents.

Farmers Marketing Committee

THE Committee of Seventeen, hereafter to be known as the Farmers Marketing Committee of Seventeen, appointed by recent conference of the National Board of Farm Organizations, held its first meeting Monday and Tuesday, October 4 and 5, at Chicago and effected a permanent organization.

All members were present with the exception of Henry J. Waters. Dr. Livingston, director of markets for South Dakota, was appointed to fill the vacancy. C. H. Gustafson of Lincoln, Nebraska, was named chairman. Wm. G. Eckhardt of Chicago was elected treasurer and O. M. Kile of Washington, D. C., and C. E. Gunnels of Chicago, secretary and assistant secretary.

The outstanding feature of the meeting was the unanimity with which all agreed that each must sink his own individual, pet ideas as to what marketing plan is to be adopted, and search for the basic facts upon which a sound and comprehensive cooperative marketing system may be built. All appreciated that the committee has a tremendous job on hand, the biggest job any farmers committee ever before confronted, yet the feeling was unanimous that a safe, sane, sound and satisfactory solution would be found and put into operation.

It was decided to break up the work of the committee into subdivisions. The following working plan with subcommittees to handle each division was adopted:

Cooperative marketing methods: Historical; consideration of proposed plans.

Cost of marketing: Distribution, country elevator terminal and export; functions and efficiency of grain exchanges; relations of future trading to marketing; market quotations and crop reports, foreign and domestic; present marketing practices, mixing, blending, etc.

Storage and transportation: Data on available storage capacity, ownership, location; efficiency of storage; insurance; relationship of transporta-

tion companies to grain; marketing companies.

Consumption and export: Consumption on farm; manufacturing, local and centralized, flour, other grain products; disposition of by-products; methods of distribution; exports and foreign competition.

Finance: Relation to marketing and distribution.

In addition the work of the first subdivision is to be divided up among four smaller groups, each group to study and report at the next meeting the cooperative methods followed in special sections of the United States or in connection with particular commodities. These groups are:

Group 1: California Fruit Growers Exchange; Prune and Apricot Growers of San Jose; Pacific Northwest Grain Pooling Plan. Committee, Eckhardt, Taber, Bingham, Gregory.

Group 2: Equity Cooperative Exchange; Wisconsin Cheese Producers Association; state ownership plan; Michigan State Farm Bureau Elevator Exchange. Committee: Middleton, Meisch, Thorne, Hirth.

Group 3: Farmers Union of Nebraska; Missouri Farmers Clubs, National Wheat Growers Association; American Cotton Growers Association; Kansas Farmers Union Plan. Committees: Hyde, Boles, Donnell, Snyder.

Group 4: National Farmers Grain Dealers Association; Canadian Grain Growers, Ltd.; Cooperation Abroad. Committee: Gustafson, Anderson, Ladd, Livingston.

The committee decided to hold a second meeting in Chicago, November 4-6, at which time men of national reputation and prominent in marketing affairs will be brought before the committee to discuss both general and specific features of the entire marketing problem and to answer such questions as the committee may ask.

Among those to be invited are Secretary of Agriculture Meredith, Victor Murdock, Julius Barnes, Herbert Hoover, Barney M. Barnah, L. F. Gates, Harold G. Powell, members of the farm bureau committee who visited the California cooperators, National

Millers Federation, representatives of the Canadian Council of Agriculture.

It was decided to employ competent economists to investigate and report on certain features of the marketing problem. Much data must be collected in addition to reports to be made on the methods and plans of the different cooperative marketing organizations to be investigated. Progress reports are to be made at the November meeting.

SUGAR BEET TOPPER AND HARVESTER

We heard a sugar beet grower express himself the other day in effect that it would not be many years before the sugar production of the world would be left to the tropics. The cost of labor and of land is so great and the treatment accorded by the sugar factories, in holding all the profits in good years and in holding down prices to growers in all years, is such that ultimately growing of beets for sugar production must cease. The labor of thinning, weeding, topping and harvesting is so great that every effort is made through labor saving machinery to still be able to produce a crop.

Thinning and weeding can hardly be accomplished without much hand labor, but we recently saw a tiny model of a beet harvester and topper which may become a factor in reducing costs and in enabling further production. It is a combination beet plow or lifter, topper and harvester. It consists of a large revolving wheel or mechanism which grasps the beet after the plow has passed under it and loosened it. It carries the beet up to the topper, where the top is removed and the beet deposited on one dump while the top is put on the other. These dumps may be operated from the seat of the driver and can be so constructed as to carry quite a material portion of a trailer load. When the topped beets are dumped they are left in the piles over the field until the truck or trailer calls and carries them away.

The test of this little model was made with small radishes and with them the operation seemed to be nearly perfect, still, we could not help but question as to the possibility of practical operation of the full sized working model because of the vast number of parts necessary in such a complicated machine. It seems to us that it would be necessary for the beets to be grown of a fairly even size and height or some would be topped too low while others might fail to have sufficient of the top removed. The invention is the work of George E. Faucher, who has shown wonderful ingenuity in arranging the parts so as to be under the control of the driver. If successful, it will be a wonderful labor saver.

PRODUCTION OF CORN OIL ASSURED

Corn oil appears to have established itself as a satisfactory product for which there will be a steady demand, according to department Bulletin 904, recently issued by the United States department of agriculture. That the oil can always be produced seems assured by the fact that it is a by-product of the manufacture of certain staple corn products, and it is only in case of an overproduction of fats and oils that it might be discontinued and the germs disposed of as feed. Such a situation seems improbable, however, and at the most would doubtless be only temporary.

As to the utilization of corn oil, it is believed that within a few years the oil will be used almost entirely for edible purposes, except only what is of such poor quality as to make its refining unprofitable. The sale of the oil in retail packages will very likely be further developed, and its use by bakers is also likely to increase.

The amount of corn oil used for edible purposes in the future will be determined by the quantity available rather than by any question as to its utility. At present some bakers, while admitting that it is suitable for their products, use cottonseed oil because the supply of corn oil fluctuates so that it is not always obtainable in sufficient quantities.

Returns from the recent Tulare County fair show a net profit of more than \$2,000, an unusual record for a county fair.

TRACTOR SHORT COURSE

Do you wish to learn more about the repair and operation of tractors?

A gas tractor short course will be offered at the Lodi Union High School from November 15 to 20. This course will be under the direction of the agricultural engineering division of the college of agriculture, University of California. Five instructors from the university farm at Davis, with representatives from the various tractor companies, will conduct the course.

The work given will be the same as the tractor courses offered at Davis and Riverside for the past four years. The course will include a large amount of practice work, such as ignition trouble finding, magneto timing, carburetor adjustment, bearing scraping, valve grinding, etc. There will be 11 hours of general lecture demonstrations, 18 hours of repair work, 12 hours spent on the various tractors, and during the evenings there will be tractor motion pictures and lectures on general agricultural subjects.

The enrollment for this course is limited to 100 students who must be over 18 years of age and owners, operators, or others directly interested in tractors. The enrollment fee is \$3.

Write to H. W. Shepherd, Lodi Union High School, for further information.

GETTING RID OF THE ARGENTINE ANT

From Texas to the Atlantic, in scattered localities, the Argentine ant, in dark brown hordes, attacks gardens, ruins orchard and truck crops, and even swarms into the houses, making conditions in some cases so unbearable that their inhabitants leave.

The pest is carried by rail in food-stuffs, and since its original introduction, presumably from Brazil, it has been distributed about the country until infestations occur throughout the South, with a separate group of infestations in California. It may also be carried by floods such as occur in the Mississippi Valley, the ants forming themselves into a compact ball that floats to safety.

The nurseryman, the trucker and the orange grower are greatly molested by this pest, owing to the fondness of the ant for the honeydew excreted by aphids and scale insects. The worker ants take the best possible care of these honeydew yielding species, and protect them from their natural enemies. They frequently build shelters over them, and as the host plants grow, carry the young scales and aphids and place them on the young tender growth, where they may more easily sap the juices of the plants.

In corn, cotton and sugar cane fields the Argentine ant when present is con-

stantly attending the aphids and mealybugs, increasing the number of these species to an alarming degree, much to the detriment of plants.

Farmers Bulletin No. 1101, The Argentine Ant as a Household Pest, issued by the United States department of agriculture, gives methods of control which entomologists in the department have found effective. For keeping ants from the trees the following remedy is suggested:

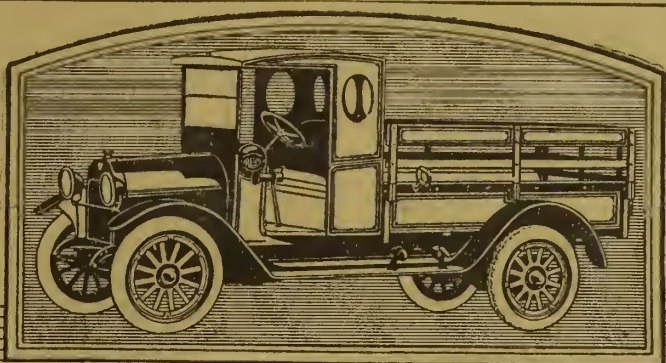
Mix together thoroughly with a wooden paddle the following ingredients until of a uniform color and consistency:

Finely powdered flowers of sulphur, 1 part by weight; commercial tree-banding sticky mixture, 6 parts by weight.

The tree trunk should first be coated with melted paraffin, which will harden almost immediately. The mixture just referred to should be applied then over the paraffin in a band about five inches wide and about one-quarter inch thick.

Before the band is applied the tree should be pruned, so that the lowest branch is fully a foot above the ground and all rubbish should be removed from beneath the tree and the soil cultivated to destroy all grass and weeds.

Agricultural students at the university are to feature a fruit exhibit in the third week of November.



REO

This Reo Speed Wagon Belongs to—Our Day

(Trade Mark)

You can remember, doubtless, when the women hoed the corn and sages argued that the new fangled, one-horse, wheeled cultivator would never do the work. "Corn must be hilled up," they said.

Well, that idea was no more fallacious than the idea some farmers still hold that all farm hauling can still be done by horses.

This Reo Speed Wagon is as much faster, as much more efficient—and as much more economical—than horse hauling, as is the present riding cultivator over a bent-backed human with a hoe!

Horses are too slow and therefore too expensive in these days of high costs and scarcity of farm help.

Times have changed—time is money now on the farm as well as in the city.

Slow, time-wasting methods won't do any more.

You know you simply couldn't do without your automobile today—that car you considered a luxury when you bought it.

You can't bear to sit behind that slow old horse all the way to town and back.

Nor can you get the most out of your land—the "top o' the market" for your produce, or the best in the market for your own table—if you continue to depend on horses for road work.

Remember, too, that most of your hauling is not from, but to, the farm—smaller loads of course but more of them.

One day in the field is worth two on the road. Keep the farm work going—then you'll have more work for your Reo Speed Wagon delivering what the farm produces.

The Reo Distributor for California is:



Write for particulars to the nearest office, or to

REO MOTOR CAR COMPANY, LANSING, MICHIGAN



Copyright Reo Motor Car Co.

Three Standard Automatic Subsoiler

(Catalog No. 37)

KILLEFER
EFFICIENCY

To Get the Full Benefit From the Winter Rain You Should Subsoil and Chisel Now While the Ground Is Hard

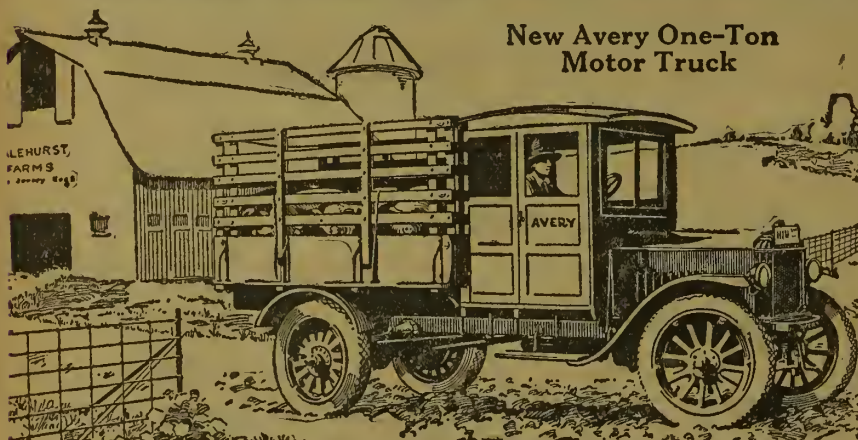
Increased land values and increased agricultural education have combined to prove the necessity of deep tillage. Increase in land values has made it essential to secure maximum returns from each acre; increase in agricultural education has shown the advisability of deep subsoiling and chiseling for bigger and better crops. You can break the hard pan or plow

sole with a subsoiler where a plow will not enter, destroying this hard stratum without turning it over, permitting the moisture and plant roots to penetrate deep and providing ideal conditions for moisture preservation and plant germination. We make automatic subsoilers with one, three and five standards, suitable for all size tractors from 8 to 75 horse power.

Write for catalog and prices, also our booklet on Deep Tillage

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave. Box 156, Arcade Station P.O., Los Angeles, Cal.

New Avery One-Ton
Motor Truck

Now You Can Avery-ize Your Hauling Too

Here is the latest addition to the Avery Line of Motor Farming Machinery—the new Avery one-ton motor truck. And, as you might expect, it is a real Avery quality outfit from radiator to tail light. It has the Avery Six-cylinder motor—the same motor that has proven so successful in the Avery Six-Cylinder Tractors and Motor Cultivators. This means plenty of power. It is equipped with Internal Gear-Driven Axles, Vanadium Steel Springs, Stromberg Carburetor, Westinghouse Electric Lights and Starter, Willard Truck Battery, Alemite Lubricating System, Goodyear Demountable Rims, Pneumatic Cord Tires

all around and other equipment which means dependable and economical service.

Every farmer needs a motor truck. It is one of the biggest time and work savers he can own. Here is a truck built especially for his needs by a company whose motor farming machines are now giving satisfactory service in every state in the Union and 68 foreign countries.

Write for special circular. Also ask for the Avery catalog showing the complete line of Avery Tractors and line of Avery Tractor-Drawn and Tractor-Driven Machinery.

"Avery-ize Your Farm—A Good Machine and a Square Deal."

AVERY

Motor Farming, Threshing
and Road Building Machinery

EVERY CO.
3913 Iowa Street
Peoria, Ill.
Branch Houses: San
Francisco, 67 Beale
St. and Los Angeles
California

Legal Queries

Louis B. Stanton, attorney 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Net Time for Labor

I engaged a party for day labor at \$4.50 a day of eight hours each. During a portion of the time they resided upon the place and gave full time. For two months after that they resided on their own place and consumed an hour and one-half to two hours in travel of my eight hours. Can they collect such wages?—Subscriber, Scotia.

If contract was for \$4.50 per day of eight hours work, they are required to perform their full contract, and if they do not furnish their full eight hours they are not entitled to collect therefor.

Joint Checking Account

Husband and wife put money in the bank on a joint checking account. A year later the husband desires to discontinue the wife's account, and tells the bank he wants account changed to his own name.—Subscriber, Van Nuys.

As the husband and wife both put money in a joint account, this account could only be changed by their joint consent. There is, of course, nothing to prevent the husband's starting a new account in his own name.

Claiming Heirship

My great grandmother died, leaving a farm in New York, which her husband, together with all children except my grandmother, sold. I am the only heir of my grandmother remaining. Would this convey clear title and within what time may a person make a claim for such heirship of property?—Subscriber, Azusa.

A case such as the foregoing, in order to give a definite opinion, would require more investigation than the facts stated in the question would show. It is probably the case, however, that the interest of the subscriber's parent has never been quieted and the subscriber retains that interest in the real property, but in order to give an opinion it would be necessary to know whence the great grandmother acquired the property, when she died, the age of the children, and several other matters.

Fencing Against Stock

I have a homestead joined on three sides by government land and on the fourth side by a neighbor whose animals trespass. If I enclose between myself and the government land, can I take up stock, or will it be necessary for me to fence one-half between his and my land?—Subscriber, Redwood Valley.

The statute with respect to estrays provides that such animals shall not trespass upon the land which is planted to growing crops, vines, fruit trees, or vegetables and is at the time entirely enclosed by a substantial fence or other enclosure. Two requirements are, therefore, necessary to entitle one to invoke this statute; that is, that the land must be planted to growing crops and entirely enclosed.

(We believe, however, that the state supreme court has recently rendered decision in effect that injury caused by trespassing stock makes the owner of the stock liable, regardless of whether the injured crop is surrounded by "substantial fence." In any case, neither stockman nor crop producer is certain of his ground now and it is probable the next legislature will be appealed to for a law which will be fair to all and which will end the uncertainty.—Ed.)

Community Property

A couple are about to separate. They have community property consisting of a ranch and products. They also have two minor children. The husband threatens to dispose of the property. What steps can the wife take to keep him from decedding or giving away?—Subscriber, Visalia.

Although the husband has the management and control of the community property, the wife must join with him in executing any instrument by which such community property or any interest therein is leased for a longer period than one year, or is sold, conveyed, or incumbered, provided, however, that where the real property stands in the name of the husband alone, his conveyance thereof to party who takes in good faith without knowledge of the marriage relation shall be presumed valid. An action to avoid such conveyance by the husband must be commenced within one year from the filing of record of the instrument in the recorder's office. You might further protect your interests by filing a declaration of homestead upon the property, but you had better go to an attorney in your vicinity and lay the case before him and take such action as he may advise.

No Will

In case of death of a married man with no children, leaving no will, what disposition is made of his property by law?—Subscriber, Calipatria.

If the decedent leaves no issue, the estate goes one-half to the surviving husband or wife and the other one-half to the decedent's father and mother in equal shares, and if either is dead, the whole of said one-half goes to the other, and if there is no father and mother, then the other one-half goes to the brothers and sisters of the decedent and to the children and grandchildren of any deceased brother or sister by right of representation. This applies to the separate property of the husband. As to the community property, one-half goes to the wife and the other one-half is subject to distribution as above provided for the separate property.

Dog Poisoner

I have had several dogs poisoned in the past ten years. I have now evidence to convict the poisoner. What is the law in such case?—Subscriber.

Section 596 of the Penal Code provides that every person who willfully administers poisons to any animal, the property of another, or maliciously exposes any poison substance with the intent that the same shall be taken or swallowed by any such animal, is punishable by imprisonment in the state prison not exceeding three years or in the county jail not exceeding one year, and with fine not exceeding \$500. It is to be noted that this section is indexed under the heading of poisoned cattle, however, but the language is general enough to cover all animals.

War Tax

I purchased a team for \$100. When I made payment the vendor charged 45 cents war tax. Had he any right to do so?—Subscriber, El Cajon.

No provision for such an amount or character of war tax can be found.

Crop on Leased Land

I have lease on land which terminates December 31. The cotton crop will not be harvested until February 1. Do I have to give up the land on December 31 and the balance of the crop, or do I have a right to stay until the crop is harvested?—Subscriber, Mecca.

Under ordinary provisions, if the land was leased for a definite term the landlord has no concern as to the planting or time of harvesting, but the tenant must so conduct his operations as to be able to turn over the land to the landlord at the expiration of the lease, and if he has so planted that a crop is left thereon, he could not trespass upon the land in order to harvest it. Upon a full statement of the facts and circumstances it might be that some relief might be given. You should take the matter up with some attorney in your locality.

Overhanging Branches

Walnut trees planted on adjoining ranch overhang boundary line about two feet, although the trees are planted 20 feet from line. What are the rights in respect to the overhanging branches with nuts thereon?—Subscriber, Fullerton.

The decisions of the courts have

been directly conflicting upon the rights of the parties in such cases. The supreme court of California has intimated that fruit on overhanging branches belongs to owner over whose land they hang, and such party can cut such branches, trim them, and is entitled to all nuts or fruit growing upon such branches. The adjoining owner undoubtedly would not be entitled to shake the trees so that nuts which do not overhang his land would fall thereon, but if the owner upon whose land the trees are planted shakes the trees and the nuts fall on his neighbor's land, the owner of the trees certainly could not trespass upon his neighbor's land in order to gather nuts which had fallen there, but such nuts could be gathered by the party upon whose land they fall. The owner of the trees could not probably be required to trim back the overhanging limbs where they only overhang a couple of feet or so, as that would cause so little injury that the law would not take notice of it and would remit the party over whose land such limbs overhung to his right to trim the branches even within the dividing line himself and recompense himself by the wood from such branches. A tenant of land would undoubtedly have all the rights and be subject to all the liabilities of the owner under the above question.

Cutting Eucalyptus Roots

Can one cut the roots of gum trees near his line by running a ditch two feet from that line, or can he compel a neighbor to cut the trees down?—Subscriber, Fullerton.

A remedy by abatement of the roots is unquestioned and a ditch may be run along the boundary line so as to cut off the roots. The courts have decided in directly conflicting decisions as to the right of injunction to compel the removal of roots projecting into adjoining land, but this will be passed upon by the appellate court at an early date and then definitely established in this state.

To Avoid Probate

In what way can property be deeded to a person during the life of the owner to take effect at his death, so as to avoid administration?—Subscriber, Holtville.

Probably the best method would be to deed the property to the person to whom it is desired to go, reserving life estate therein to the grantor. In such event the only procedure necessary would be to establish of record the fact of death.

Joint Tenants

A conveyance is made to A and B as joint tenants and not tenants in common. Does this make the title to real property absolute in the survivor?—Subscriber, Holtville.

The usual wording of conveyance is "A and B as joint tenants with right of survivorship." In case of the death of one the whole property vests in the survivor. It is necessary only to take a proceeding to establish of record the fact of the death of the party deceased.

STALDER SALE A BIG ONE

When the word was passed that Stalder Bros. of Riverside would sell their ranch and big herd of Holsteins at public auction it attracted immediate attention, for the Stalders have long been known as the owners of a wonderful ranch and a herd of cows of the finest type and quality.

A large crowd was present on October 19 when the sale opened and the prices for the horses, implements, hogs, goats and range cattle were fairly good. A couple of thousand Leghorn hens were very much in demand and the price averaged \$1.75 in flocks.

The ranch was sold in two parcels. The 235 acres of low land on which the excellent dairy buildings stand was knocked down to Romie C. Jacks of San Francisco for \$305 an acre. The 399 acres of hill land brought \$105.

The second and third days were devoted to selling the 150 registered Holsteins, most of which were descendants of the great cow Gerben Abbekerk Maid. This cow was one of the original pure bred in the Stalder herd and three times made over 30

pounds of butter in seven days—two of these records being over 34 pounds. She is also a remarkable breeding cow, having dropped nine living calves in eight years.

Her son, King Pontiac Netherland Segis 3rd, has been the herd sire at Rosamines Ranch for the past five years and her descendants in the sale numbered 105.

The top animal of the sale was the young bull, Sir Ormsby Skylark Raurerd, the 34 pound son of Sir Ormsby Skylark, whom A. J. Stalder bought from D. J. Maxwell of Waterloo, Iowa. He was knocked down to Cash & Kyne of Perris for \$3,500.

The senior herd sire, King Pontiac Netherland Segis 3rd, went to Bost & Johnson of Chino for \$2,900.

The top cow was Rosamaines Duchess Ormsby, a daughter of Gerben Abbekerk Maid, with a three year old record of 20.68 pounds of butter in seven days. She was sold to Judge Morrison of Los Angeles for his ranch in the Antelope Valley for \$2,100.

Earl Graham of Compton bought three or four of the good ones for high prices, including the beautiful heifer, Miss Segis Pontiac Walker, for which he paid \$1,700.

R. N. Clapp of Nuevo was the heaviest purchaser and laid in a supply of the tops, including the foundation cow, Gerben Abbekerk Maid.

When A. J. Stalder found out the kind of cow Gerben was he bought six of her half-sisters by the same sire, Sir Skylark Ormsby Hengerveld, and all of them have proven to be real producers. D. G. Maxwell of Waterloo, Iowa, who is moving his great herd of Ormsbys to the San Fernando Valley, was present and purchased every one of these young cows, as

their breeding follows very closely the lines he believes to be the best.

Carl Ray and Fred Hartsook of Lankershim were both heavy buyers of excellent animals.

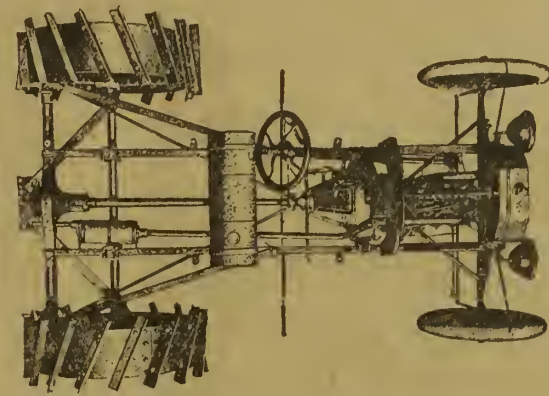
The total of the sale amounted to \$71,954, or an average of nearly \$525 per head. Considering the fact that it was a dispersal sale in which there were many calves and young bulls, this average proves that there is no better nor quicker way to make money than in raising the right kind of pure bred Holsteins.

The sale was very ably handled by Chas. L. Hughes of the California Breeders Sales and Pedigree Company and the old reliable, Col. Ben A. Rhoades, was on the block.

The purchasers were Bost & John-

son, Cash & Kyne, Pottenger Sanatorium, R. N. Clapp, Romie C. Jacks, Burr Farm, W. B. Mills, Mrs. Donders, C. V. Harris, L. B. Van Blaricon, Judge Morrison, D. G. Maxwell, San Diego County Farm, Carl Ray, Fred Hartsook, Arden Daisy, F. T. Underhill, F. F. Pellissier, Earl Graham, R. L. Holmes and Gotshall & Magruder.

Russia, before the war, occupied first place as a timber exporter. When settled conditions shall again obtain, Russia will export timber in much greater quantities than ever. Its timber resources, occupying an area three times the timbered area of the United States and Canada combined, will permit greater exploitation than in the past.



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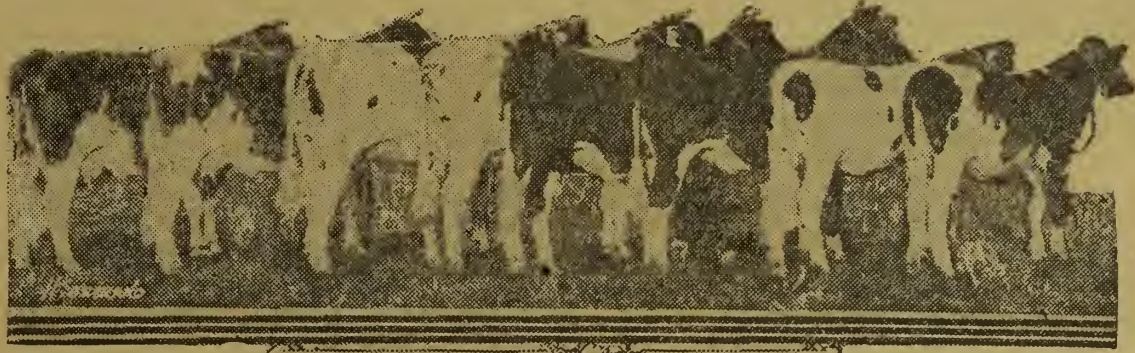
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As an example—take the experience of the Iowa Experiment Station in 1907. Several native scrub cows averaging 3,660 lbs. milk were bred to pure-bred bulls. Heifers resulting from this cross averaged 5,990 lbs. milk, a 64% increase.

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If you want to build a high-producing herd—head it with a son of **MATADOR SEGIS WALKER**.

His GET (shown above) took 10 out of 23 first prizes at last year's Portland Livestock Show.

His daughters are making wonderful records in all tests from 7 to 365 days. Before long Matador will be a century Sire.

A son of Matador—at the head of your herd—will bring to it the transmitting ability that will go a long way toward increasing your milk production and profits.

Write for Sales List 302, sent upon request. (Includes description and price.)

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the most talked about Poland China boar in the State—who was grand champion at Santa Rosa and 1st junior yearling and reserve champion—though badly out of condition—at the State Fair, in our

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Fair Grounds, Santa Rosa

Together with a fine lot of Big Type
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and some open sows and gilts, some pigs and two nice Spring boars sired by Headlight. Also our aged boar Mouws Special 7th.

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First and Second Prize Junior Boars at Fresno.
First prize is by Giant Bob out of a King's Big Bone Leader dam. Second is by Prospector out of Big Susie. These boars are priced for quick sale. Don't delay; write now.

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A-1 Duroc Ranch

Where one of the state's greatest herds of Duroc-Jerseys is maintained. For years our Durocs have proven profitable to farmer and breeder alike. Better place your order now for spring pigs as what we will be able to spare will go quickly. Remember, this is the home of the state's highest priced (\$1500) and most valuable Duroc-Jersey sow.

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Watch La Tierra de Uva Durocs Pathfinders, Orions, Sensations Three Top Boars

Fannie's Orion King assisted by Uneeda Orion B, 2nd prize aged boar at State Fair, 1920, and grand champion at Glenn County Fair, 1919, and Valley View's Sensation, 3rd prize junior boar pig and litter mate to 1st prize and reserve champion at State Fair, 1920, and a wonderful string of prize winning sows and gilts, including Miss Sensation, 1st sow pig and reserve champion at State Fair.

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The Greatest Duroc Boar of His Age! Choice Wonder 3d

a winner at the 1919 Iowa State fair, sired by the great boar, Mahaska Wonder, and a litter mate to the first prize junior boar of Iowa. heads our herd. He is the largest, heaviest boned, best footed boar in the state and he is being mated to the sows that have made this herd famous for futurity winners. Get your order in early for his pigs. Prices are most moderate. Satisfaction guaranteed.

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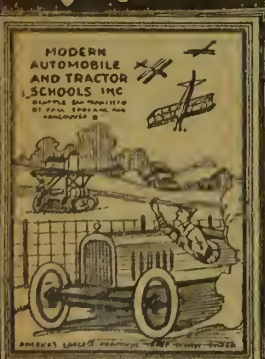
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Bred to farrow next two months. We are making an extremely low price on these to reduce our herd. At the price we won't keep them long. Write today. Quick, before they are all gone.

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Vote Down Number 7

By R. P. Royce



THE voters of California will once more be confronted with an initiative measure seeking to abolish the use of animals in scientific investigation. That measure is "Initiative Measure No. 7," and the California Cultivator again takes opportunity to call to the attention of our readers the extreme importance of defeating this measure—and defeating it so emphatically that it will be a long time before its promoters will again present it.

Measure No. 7 is known as the "anti-vivisection" measure. Vivisection is defined as "the dissection of or operation on a living animal for physiological or pathological investigation." The measure, therefore, seeks to make impossible such practice.

Sounds innocent enough, but underneath it constitutes one of the most harmful, even dangerous, measures with which the intelligence of California voters has been assaulted.

If No. 7 is not defeated, here is what the livestock industry will be up against:

1. The manufacture of hog cholera serums and virus will be stopped and the entire pork industry will be menaced, possibly destroyed.
2. The manufacture and distribution of protective serums for the prevention and cure of anthrax, black-leg and many other animal diseases will be prevented.

vention and cure of anthrax, black-leg and many other animal diseases will be prevented.

3. The investigations carried on for the discovery of means and methods to prevent, control, cure and eradicate other infectious and contagious diseases that levy a terrible toll each year on the livestock industry will be presented.

4. So drastic is the proposed measure that even nutrition experiments and trials that seek to point the way to more economical production will be prohibited.

5. The very health and life of the community will be menaced by the stopping of the manufacture of serums, vaccines, etc., discovered, proved and made possible through the scientific use of the lower forms of animal life.

Why place absurd values on rats, mice, guinea pigs, etc., when it is known that only through intelligent use of such forms of life have we come into possession of our present fund of knowledge relating to the causes and cures of many of the diseases once regarded as scourges.

Be on your guard! Go to the polls! Vote "No" on Initiative Measure No. 7 for your own protection and the protection of your industry.

Silo Filling



SILO filling as they do it in the corn belt, as given by a writer in Wallace's Farmer of Des Moines, Iowa:

Only a half dozen really big new ideas have hit the corn belt during the past 30 years. The growing of alfalfa has made a great change in many sections, and so also has the self feeding of corn and tankage to pigs, but probably the most worth while of all the new things is the silo. Twenty years ago there were a few silos here and there in the dairy sections, but scarcely any in the main part of the corn belt. Then along about 1904 the Indiana station began experimenting with silage as a feed for fattening cattle and found that it was worth just as much for fattening cattle as it was for dairy cattle. In fact, most of the experiments indicated that it was worth more. And then along about 1914 the Iowa, Missouri and Pennsylvania experiment stations began experimenting with feeding fattening steers as much as 60 pounds of silage daily, with scarcely any hay or corn. They found that steers could be made really fat with an average daily ration of 50 pounds of silage, two or three pounds of hay and two or three pounds of oil meal or cotton seed meal. And now silos are found everywhere over the corn belt where cattle are raised at all extensively, except in sections where hay is unusually cheap and corn is rather expensive. In western Kansas and Nebraska, for instance, alfalfa hay is relatively cheaper than corn, and for this reason we find very few silos in these sections. In the rougher parts of the corn belt along the rivers hay seems to be enough cheaper than corn so that silos are not so very common.

Perhaps you don't have a silo on your place yet. Nevertheless, there are probably silos in the neighborhood, and if you get an opportunity to help at silo filling time this year, let me suggest that you take advantage of it. Silos are going to become more and more common right along, and if you intend farming for yourself it will be a good plan for you to learn all there is to be known about silo filling.

First, just when should you cut corn for the silo? In the old days people thought that corn should be cut when it was in the milk stage, and all the leaves were green and the stalks very juicy. Then the chemists at the experiment stations told the people that at this stage the corn contained about twice as much water and only half as much dry matter as it did later. Some of the people then went to the other extreme and put their corn in the silo in early October, when it was almost dead ripe. It was found that this kind of corn did not pack together tightly,

and that there was considerable danger of molding unless about a half ton of water was added to each ton of silage as fast as it was put in. The happy medium is when the kernels are all glazed and most of them dented, but while most of the leaves are yet green. The leaves are of great feeding value, and if the leaves have begun to dry up it is a good plan to cut the corn for silage even though most of the kernels have not yet dented.

When you help at silo filling time there are several things which you can watch with considerable interest. If water is being added to the silage, notice just how they do it. Do they let the water run in at the lower part of the blower pipe and blow the water up with the silage, or do they let the water mix with the silage at the upper end of the blower pipe? Or perhaps they run water on the silage every noon and every evening after the filling stops. Notice the different ways and try to figure out for yourself which is the easiest and which makes the best silage.

Another thing to watch is the method which different people use in keeping the silage tramped down. Some people keep only one man in the silo to move the distributor pipe around and do the tramping. Other people keep three men. Some people keep one man during the first part of the filling and three men during the last part. One thing is quite certain, and that is that corn which is cut rather green doesn't need so many men to tramp it as corn which is almost ripe, and which is having water added to it. Also, it seems a reasonable proposition to do the most tramping during the last part of the filling, for the reason that the first part of the filling is packed together tightly by the mere weight of the silage pressing from above. Personally, I have seen some very good silage come from silos where there was scarcely any tramping done, and I have seen moldy silage from silos where there was lots of tramping, but on the average tramped silage seems to keep better than silage which is not tramped.

With a big cutter and a powerful engine, it is sometimes possible to fill a fairly large silo in a single day. This means that the silage will probably settle five to ten feet, and that if the silage space is to be used to the best advantage there must be some refilling later on.

Watch the man who feeds the corn into the silage cutter. He has the most important job of all, and the chances are that he knows more about silo filling than any other man in the gang. If he believes in working hard himself he can keep the work speeded up amazingly all along the line. Watch

how often he likes to have his knives sharpened. There seems to be some difference of opinion on this matter. Some people like to have two sets of knives which are alternated every half day, while the other set is being sharpened up. Other people claim that the thing to do is to keep the knives set just right so that they sharpen themselves.

When the silo is nearly full it is a good plan to husk the ear corn out of the last load and run in just the stalks. The top seven or eight inches of silage is almost sure to spoil, and it is a good plan not to run any good ear corn in with the top foot where there is any danger of spoiling. It helps to reduce spoiling to add a lot of water to the top of the silo, and to tramp thoroughly so as to shut out air as completely as possible.

Silage is such an important winter feed that people are constantly thinking of new ideas. Why not use some other crop than corn for silage? Accordingly, someone in Montana experimented with sunflowers and found that under Montana conditions sunflowers yielded far more than corn and made almost as good silage. In western Kansas they tried sorghum or cane and found that under drouth conditions sorghum or cane yielded more silage and was almost as good as corn silage. There are certain very tall growing kinds of Southern corn which may be used for silage instead of our regular Reid's Yellow Dent or Silver King, as the case may be. These late growing sorts as they exist today are too late to be practical under corn belt conditions, but there is a chance that

we can yet devise a moderately early corn with a much larger stalk than the common varieties that are grown today.

Different kinds of improvements are being made in silo filling machinery. For instance, there is a rather new machine which has a husker attachment on the silage cutter, so that only the stalks are sent into the silo. This makes what is called stover silage. Stover silage, since it has no grain in it, is not as good as ordinary silage, but it is far cheaper. It is possible to winter cattle through at an expense only about one-third as great as with ordinary silage. For fattening cattle, stover silage may not be worth while, but for cattle which are being roughed along it seems to be decidedly worth while. In such a case there seems to be a decided advantage in saving for the hogs the corn which otherwise would have gone into the silo.

Another new silage machine is one which cuts the corn into small pieces in the field and elevates these finely cut pieces into a wagon, which hauls it to the silo, where it is blown up with far less power than otherwise would be necessary. It is claimed that this machine does away with the work of two or three men and perhaps a team or two.

Doubtless many other new things will be discovered in the way of making silage, and some of these new things, after being tried out for a number of years, will become widely adopted. Keep your eyes open, for there are going to be great changes in the making and feeding of silage during the next 20 years.

Riverside Livestock Awards

The wonderful showing of livestock made at the Southern California fair at Riverside was described in Mr. Klein's article in last issue. Awards had not been made so that they could be used in that issue so the greater portion of them are given below:

Shorthorns

Exhibitors: Thos. B. Dibblee Estate, Lompoc; William Bond, Newark; F. L. Hall, Perris; F. C. Collier, Wildomar.

Bull, 3 and over—1, Hall on Knight's Crown.
Bull, 2 and over—1, Bond on Cumberland Gloster. 2, Collier on Orange Flash.
Bull, senior yearling—1, Dibblee Estate on Baron Lancaster.
Bull, junior yearling—1, Hall on Royal Broadhooks.

Bull, senior calf—1, Dibblee Estate on Silver Cup. 2, Dibblee Estate on Baronson. 3, Collier on Palomar.

Bull, junior calf—1, Bond on Cumberland Goods. 2, Dibblee Estate on Sterling Lancaster. 3, Dibblee Estate on Royal Clansman.

Cow, 3 and over—1, Dibblee on Bright Bess of Collynie. 2, Bond on Mayfield Victoria. 3, Hall on Moss Rose.

Cow, 2 and over—1, Bond on Ormondale Maid 2nd. 2, Collier on Palomar Maid.

Heifer, senior yearling—1, Dibblee on Orange Blossom "A". 2, Collier on Palomar Lil.

Heifer, junior yearling—1, Bond on Cumberland Maid. 2, Dibblee on Secret Clipper. 3, Bond on Cumberland Sunrise.

Heifer, senior calf—1, Dibblee on Village Ruby. 2, Dibblee on Village Fair Girl. 3, Bond on White Cumberland.

Heifer, junior calf—1, Dibblee on Princess Royal. 2, Dibblee on Lavender Queen 5th. 3, Dibblee on Lady Acanthus 2nd.

Aged herd—1, Bond. 2, Hall.
Young herd—1, Dibblee. 2, Hall.

Calf herd—1 and 2, Dibblee.
Four animals, either sex, get of one sire—1, Dibblee. 2, Bond.

Two animals, either sex, produce of one cow—1, Bond. 2, Dibblee.
Senior champion bull—Bond on Cumberland Gloster.

Junior champion bull—Dibblee on Silver Cup.

Senior champion cow—Bond on Ormondale Maid 2nd.

Junior champion cow—Dibblee on Princess Royal.

Grand champion bull—Dibblee on Silver Cup.

Reserve grand champion bull—Bond on Cumberland Gloster.

Grand champion cow—Bond on Ormondale Maid 2nd.

Reserve grand champion cow—Dibblee on Princess Royal.

Herefords

Bull, 3 and over—1, Jacks on Paragon Dare.

Bull, 2 and over—1, Jacks on Woodford 34th.

Bull, senior yearling—1, Jacks on Beau Blanc Visage 9th.

Bull, junior yearling—1, Jacks on Wyomings Type.

Bull, senior calf—1, Jacks on Crimean 1st.

Cow, 3 and over—1, Jacks on Miss Debonair 4th.

Cow, 2 and over—1, Jacks on Bocaldo Beauty. 2, Jacks on Ga. Princess 10th.

Heifer, junior yearling—1, Jacks on Ruth Domino. 2, Jacks on Belle Grove.

Heifer, senior calf—1, Jacks on Miss Domino 9th.

Heifer, junior calf—1, Jacks on Dainty Dare.

Aged herd—1, Jacks.

Young herd—1, Jacks.

Calf herd—1, Jacks.

Senior champion bull—Jacks on Woodford 34th.

Junior champion bull—Jacks on Wyomings Type.

Grand champion bull—Jacks on Woodford 34th.

Senior champion cow—Jacks on Bocaldo Beauty.

Junior champion cow—Jacks on Ruth Domino.

Grand champion cow—Jacks on Bocaldo Beauty.

Aberdeen-Angus

Bull, 3 and over—1, Congden & Battles on Prizemere 5th.

Bull, 2 and over—1, Congden & Battles on Knight of Rosemere.

Bull, senior yearling—1, Congden & Battles on Prizemere 8th.

Bull, junior yearling—1, Congden & Battles on Prideman C. B. 5th.

Bull, senior calf—1, Congden & Battles on Ericman C. B. 5th.

Bull, junior calf—1, Congden & Battles on Prizemere 15th. 2, Lilac Ranch on Kenmure of Lilac.

Cow, 3 and over—1, Congden & Battles.

Cow, 2 and over—1, Congden & Battles on Pride C. B. 5th.

Heifer, junior yearling—1, Lilac Ranch on Rose of Rosemere 7th.

Heifer, junior yearling—1, Congden & Battles on Blackbird of Rosemere 42nd.

Heifer, senior calf—1, Lilac Ranch on Esica of Lilac 1st. 2, Lilac Ranch on Blackbird of Lilac 1st. 3, Congden & Battles on Pride of Rosemere 37th.

Heifer, junior calf—1, Congden & Battles on Rose of Rosemere 8th.

Aged herd—1, Congden & Battles.

Young herd—1, Congden & Battles.

Calf herd—1, Congden & Battles. 2, Lilac Ranch.

Two animals, either sex, get of one sire—1, Lilac Ranch.

Two animals, produce of one dam—1, Congden & Battles.

Senior champion bull—Congden & Battles on Prizemere 5th.

Junior champion bull—Congden & Battles on Prideman C. B. 5th.

Senior champion cow—Congden & Battles on Pride C. B. 5th.

Junior champion cow—Congden & Battles on Prideman C. B. 5th.

Grand champion bull—Congden & Battles on Prideman C. B. 5th.

Grand champion cow—Congden & Battles on Pride C. B. 5th.

Baby beef, under one year—1, Congden & Battles on Prideman C. B. 14th.

Hoistein-Friesian

Exhibitors: Anita M. Baldwin, Santa Anita; Geo. Junior Republic, Chino; A. J. Stalder, Riverside; E. D. Barry, Jr., Daggett; Frank Reed Saunders, Phoenix, Ariz.; Sierra Vista Ranch, Perris; E. R. Stalder, Riverside; Riverside County Farm; R. E. Babcock, Arlington; G. Neffhauser, San Bernardino; Robt. N. Clapp, Nuevo; L. Gregory, Chino; R. H. Marr, Chino.

Bull, 3 and over—1, Geo. Jr. Republic on Dichter Spofford Korndyke Lad 5th.

2, Baldwin on Mercé Lad Korndyke Burke.

3, Stalder on King Pontiac Netherland Segis 3rd. 4, Riverside Co. Farm on Korndyke Butter Boy Barnum.

Bull, 2 and over—1, Barry on Sir Aggie Hiske Walker. 2, Stalder on Rosamaines Pontiac Ormsby.

Heifer, junior yearling—1, Baldwin on

Duroc-Jerseys Are Prolific

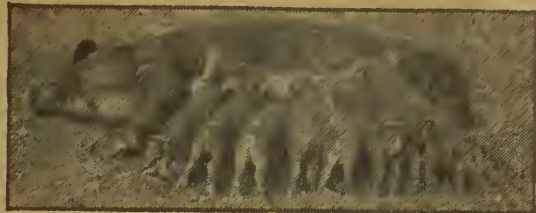
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Profitable

They raise big families. Hardy, easy-feeding, quick maturing. That is why Duroc-Jerseys today outnumber any other breed in the United States. Out of all the hogs marketed in 1918, 51 percent were Duroc-Jerseys.

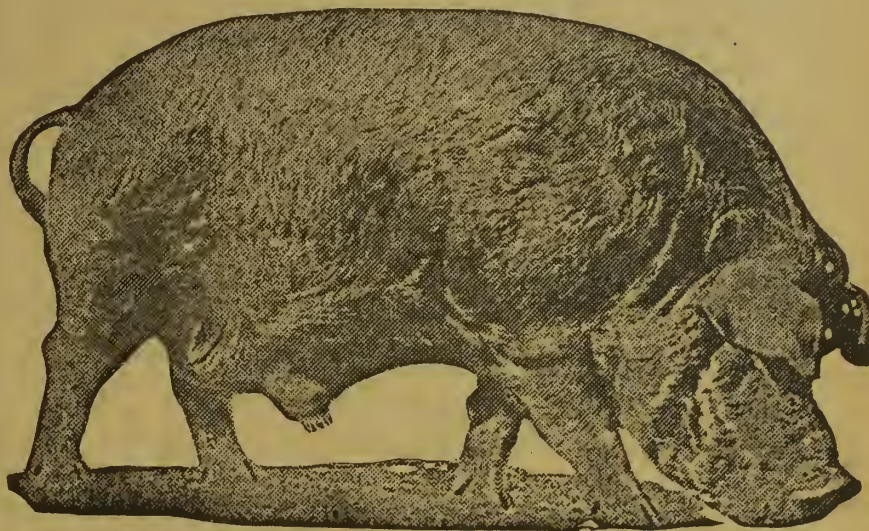
WRITE FOR BOOKLET—"DUROC-JERSEY HOGS ARE PROFITABLE" published and mailed free by the largest swine record association in the world (over 10,000 members) for the benefit of hog raisers everywhere.

THE NATIONAL DUROC-JERSEY RECORD ASSOCIATION
Dept. 130—PEORIA, ILLINOIS



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ACE OF PATHFINDERS

You now have an opportunity to insure perfect quality in your pigs by purchasing pure bred boars sired by the Ace of Pathfinders, Grand Champion Duroc-Jersey Boar, L. A. Stock Show, 1919, and head of the world's Grand Champion Herd of 1919. We are offering the following:

Spring Boars by Ace of Pathfinders

Boars sired by Ace of Pathfinders and out of Pathfinder's Very Best, winner of Reserve Grand Championship, L. A. Livestock Show.

Spring Boars by Royal Pathfinder and Great Orion Sensation.

Visit the Diamond Bar Ranch and inspect these purebred Duroc-Jerseys



F. E. Lewis

Owner & Mgr.

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Great Orion Sensation Jr.

Grand Champion Duroc Boar

Los Angeles Live Stock Show and

Southern California Fair

has again proven his great breeding qualities

Miss Defender Sensation

his junior sow pig who was Reserve junior champion sow at the State Fair was Junior Champion of the

Southern California Fair

His get have been in the money at all the fairs.

Many Spring pigs like the Junior Champion are for sale

Falfadale Farm

B. H. Wilkinson, Mgr.

PERRIS, CAL

Sale of sows bred to the Grand Champion
in February, 1921

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Hereford Breeders!

The three events outlined below will afford the most attractive opportunity for selection of registered Hereford breeding animals that has yet been presented in the west, and among the 150 head to be sold are individuals of ages, blood lines, and type to meet a wide demand. These sales will be a real buying opportunity, all at

State Fair Grounds, Sacramento, Cal. Thursday, November 4 45—Registered Herefords—45

The cattle for this offering have been personally selected and passed upon by Mr. Frank Van Natta of Indiana, representing the American Hereford Cattle Breeders Association, and every individual has been judged worthy a place in this sale, the object of which is to place before the buying public the highest class cattle that have yet appeared in an Association sale in California.

After the above statement it is hardly necessary to add that the buyer of real top breeding and type will find a rare selection in this offering, animals with which the owners have parted with great reluctance in many instances.

Contributors to sale:

J. H. CAZIER & SONS CO., Wells, Nev.	H. M. BARNGROVER, Santa Clara, Calif.
UNIVERSITY OF NEVADA, Reno, Nev.	CHAS. RULE, Jenner, Calif.
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Sale under auspices of

Pacific Coast Hereford Cattle Breeders Association

J. I. Cazier, Pres., Wells, Nev. J. A. Bunting, Sec., Mission San Jose, Calif.

Friday November 5, Nevada Hereford Ranch Sells 55—Registered Herefords—55

With 200 registered breeding cows in its herd, the result of 16 years experience with registered Herefords, with a remarkable history of good health, and with a most satisfactory amount of good breeding and good type, the owners are here making a notable offering in their first individual public sale.



Beau Blanchard 76th



Harris Standard 2nd

Beau Blanchard 76th was Grand Champion bull at 1920 California State Fair and Los Angeles Livestock Show. One of his junior calf sons out of a Harris Standard 2nd dam was junior champion at Sacramento, and another similarly bred was junior champion at Los Angeles.

Harris Standard 2nd is as well bred as any bull in the United States, and the Nevada Hereford Ranch show herd for the past three years has been composed almost entirely of his get, winning consistently wherever shown. As a breeding bull he is widely recognized as a foremost sire in the west.

30 Daughters of Harris Standard 2d, bred to Beau Blanchard 76th, will be a feature of this offering.

Added Attractions: At the last moment the owners have decided to include Donna C a richly bred 2 year old Anxiety heifer, safe in calf to Beau Blanchard, the greatest living Anxiety bull, and Dew Drop, a 2 year old daughter of Beau Perfect, safe in calf to Dandy Mischief, one of Mousel Bros.' famous sires.

5 Choice Young Bulls

A few selected bulls will round out this offering, and they are of the quality for which this herd is justly famous.

Owners:

J. H. CAZIER & SONS CO., WELLS, NEVADA.

Saturday November 6 50---Registered Herefords---50

Most of the individuals in this offering were bred in the well known herd formerly owned by Governor Packard of Arizona, and contains a very large percentage of heifers, many of their dams now being in the herds of Mr. J. A. Bunting, Mission San Jose, Calif., and Mr. Ed T. Morgan, Northam, Nev. Included in the list will be found:

22 Daughters of Bourbon Columbus, out of dams by Beau Tempter, Beau Donald, Repeater 9th, Rupert Donald, and Perfect Donald.

5 Daughters of Beau Fairfax, out of dams by Beau Tempter, Erling March On, Rupert Donald, and Woodford 2nd.

8 Daughters of Don Perfect 10th, out of dams by Paloma's Erling, Beau Tempter, Don Brummel, and Beau Donald.

4 Daughters of Beau Tempter, out of dams by Rupert Donald and Columbus Busybody.

Many of these choice young females are bred to

Maples Lad 137th, who is by the famous show and breeding bull, Bonnie Brae 8th, and out of a daughter of Domino.

OWNERS

BARNGROVER & WRIGHT, SANTA CLARA, CAL.

For catalogs of any or all of these sales write the management,

Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneer Col. Ben A. Rhoades

In the Ring, John A. Bunting

King Korndyke Pontiac Acme. 2, Stalder on Sir Ormsby Skylark Ramwerd. 3, Sierra Vista Ranch on K. S. P. J. Gallant. 4, Jeffries on King Segis Pontiac Jennek Count.

Bull, senior calf—1, Saunders on It Orndyke Korndyke. 2, Baldwin on Prince Walker Cornucopia 19th. 3, Stalder on Spofford. 4, Barry on Tosantos Walker Mead.

Bull, junior calf—1, Stalder on Rosamaine Pontiac Tolla Estata. 2, Geo. Jr. Republic on Republic Korndyke Pontiac. 3, Stalder on Nuevo Calantha Ormsby. 4, Cow, 3 and over—1, Baldwin on Anokla Pontiac. 2, Geo. Jr. Republic on Snowflake Juliana Forbes of Rock. 3, Geo. Jr. Republic on Juliana Darlington of Rock.

Cow, 2 and over—1, Baldwin on Blanche Nudine Clothilde Walker. 2, Stalder on Miss Segis Pontiac Walker. 3, Geo. Jr. Republic on Ida Dekol Pearl Lyons.

Heifer, senior yearling—1, Stalder on Stainlans Skylark Inka. 2, Stalder on Orlla Rowena Princess. 3, Baldwin on Anokla Burke Cornucopia.

Heifer, junior yearling—1, Baldwin on Anokla Moorland Creamelle. 2, Baldwin on Burbank's Aggie Lincoln. 3, Geo. Jr. Republic on Victory Pontiac Maid.

Heifer, senior calf—1 and 2, Baldwin. 3, Clapp on K. S. P. Lady Lillian.

Heifer, junior calf—1, Baldwin. 2, Clapp. 3, Baldwin.

Aged herd—1, Geo. Jr. Republic. 2, Baldwin. 3, Stalder.

Young herd—1, Baldwin. 2, Stalder. 3, Sierra Vista Ranch.

Calf herd—1, Baldwin. 2, Geo. Jr. Republic. 3, Stalder.

Four animals, either sex, get of one sire—1, Baldwin. 2, Stalder.

Two animals, either sex, produce of dam—1, Stalder. 2, Geo. Jr. Republic.

Senior champion bull—Geo. Jr. Republic on Dichter Spofford Korndyke Lad 5th.

Junior champion bull—Baldwin on King Korndyke Pontiac Acme.

Senior champion cow—Baldwin on Anokla DeKol Gelsche.

Junior champion cow—Baldwin on Anokla Prince Johanna.

Grand champion bull—Geo. Jr. Republic on Dichter Spofford Korndyke Lad 5th.

Reserve grand champion bull—Baldwin on King Korndyke Pontiac Acme.

Grand champion cow—Baldwin on Anokla Prince Johanna.

Reserve grand champion cow—Baldwin on Anokla De Kol Gelsche.

Guernseys
Exhibitors: W. H. Dupee, Santee; Hollow Hill Farm, Colton; A. B. Humphrey, Escalon; Russell S. Cox, San Marcos.

Bull, 3 and over—1, Humphrey on Escalon Challenger.

Bull, 2 and over—1, Humphrey on Nobleman of Maple Hill. 2, Hollow Hill Farm on Topper Langdon of H. H. F.

Bull, senior yearling—1, Dupee on Masterpiece of Edgemoor. 2, Dupee on Veda's May King of Edgemoor. 3, Cox on Reliance of Edgemoor.

Bull, junior yearling—1, Hollow Hill Farm on Reuben King of H. H. F. 2, Dupee on Imperator of Edgemoor.

Bull, senior calf—1, Hollow Hill Farm on Carl E. King of H. H. F. 2, Humphrey on Escalon Advancer. 3, Dupee on Checkmate of Edgemoor.

Bull, junior calf—1, Humphrey on Escalon Rex. 2, Hollow Hill Farm on Reuben Langdon of H. H. F. 3, Cox on Marion of Elmdale.

Cow, 3 and over—1, Hollow Hill Farm on Imp. Cherry III of the Effards. 2, Dupee on Imp. Cheminate XI. 3, Dupee on Florham Dame.

Cow, 2 and over—1, Hollow Hill Farm on Princess Selma. 2, Humphrey on Escalon Evangeline. 3, Hollow Hill Farm on Dene King of H. H. F.

Heifer, senior yearling—1, Dupee on Patroness of Edgemoor. 2, Hollow Hill Farm on Della Langdon of Hollow Hill. 3, Dupee on Dolly Dolly of Edgemoor.

Heifer, junior yearling—1, Hollow Hill Farm on Rosie E. King of H. H. F. 2, Dupee on Bar Maid of Edgemoor. 3, Humphrey on Escalon Rose.

Heifer, senior calf—1, Dupee on Margy's May Rose of Edgemoor. 2, Dupee on Beautiful Rose of Edgemoor. 3, Hollow Hill Farm on Caroline E. Langdon of H. H. F.

Heifer, junior calf—1, Hollow Hill Farm on Britannia E. King of H. H. F. 2, Dupee on Minuet of Edgemoor. 3, Humphrey on Escalon Golden Anne.

Aged herd—1, Hollow Hill Farm. 2, Humphrey.

Young herd—1, Hollow Hill Farm. 2, Dupee. 3, Humphrey.

Calf herd—1, Dupee. 2, Hollow Hill Farm.

Get of sire—1, Dupee on get of Royal Rose King of Edgemoor. 2, Hollow Hill Farm on get of Effie's King of Hollow Hill Farm. 3, Dupee on get of Bullion of Edgemoor.

Produce of dam—1, Dupee. 2, Hollow Hill Farm. 3, Humphrey.

Senior champion bull—Humphrey on Nobleman of Maple Hill.

Junior champion bull—Dupee on Masterpiece of Edgemoor.

Grand champion bull—Dupee on Masterpiece of Edgemoor.

Reserve grand champion bull—Humphrey on Nobleman of Maple Hill.

Senior champion cow—Hollow Hill Farm on Imp. Cherry III of the Effards.

Junior champion cow—Hollow Hill Farm on Rosie E. King.

Grand champion cow—Hollow Hill Farm on Imp. Cherry III of the Effards.

Reserve grand champion cow—Hollow Hill Farm on Rosie E. King.

Jerseys

Exhibitors: Geo. W. Thomas, Arlington; Harry H. Cook, Chino; Grant A. Brown, El Monte; J. E. Thorpe, Lockeford; F. M. West, Fullerton; J. R. Carhart, Fullerton; Winsor Ranch, Bonita; R. H. Williamson, Riverside; F. M. Hinton, Norwalk; J. G. Hulbert, Riverside; Walter A. Carr, Hemet; W. J. Cole, Anaheim.

Bull, 3 and over—1, Thorpe on Jolly Senator Raleigh. 2, Cook on Lily's Lowland Fern. 3, West on Nancy's Raleigh. 4, Thomas on Walnut Park Noble.

Bull, 2 and over—1, Carhart on Helena's Oxford Sultan.

Bull, senior yearling—1, Winsor Ranch on Beauty's White Sox. 2, Thorpe on Biddy's King of Mossdale.

Bull, junior yearling—1, Cook on Sarn Alois Brightness. 2, Thomas on Jerry Jingo Knight. 3, Brown on Financial Narjoram Count.

Bull, senior calf—1, West on Silverside Raleigh. 2, Thorpe on Fairy Boy of Mossdale. 3, Brown on Financier's Gentle Lad.

Bull, junior calf—1, Thomas on Noble of Golden Gate. 2, Thorpe on K. F. Buttercup King. 3, Cook on Belle's Creamy Fern.

Cow, 3 and over—1, Thorpe on Salome of Mossdale. 2, Brown on Shy Lady Viola. 3, Thorpe on Monie of Mossdale.

Cow, 2 and over—1, Thorpe on Goldie's Nealeam Cowslip. 2, West on Miss Silverside Gilly. 3, Brown on Financier's Daisy Witch.

Heifer, senior yearling—1, Thorpe on Violet of Mossdale. 2, West on Miss Silverside Nina. 3, Brown on Financier's Ida. 4, West on Miss Raleigh Barbara.

Heifer, junior yearling—1, Thomas on Queen of Golden Glen. 2, Brown on Shylock Shy Joan. 3, Thorpe on Queen Bess of Mossdale. 4, Thomas on Noble Fern of Golden Glen.

Heifer, senior calf—1, Thomas on Noble Vida. 2, Hulbert on Golden Combat Ixca. 3, Thorpe on Julie of Mossdale. 4, Thomas on Watkins' Vida.

Heifer, junior calf—1, West on Sunkist Lassie Martha. 2, Thorpe on Ramona of Mossdale. 3, Brown on Shylock Lotie. 4, Williamson on Jazz Baby.

Aged herd—1, Thorpe. 2, Cook. 3, Thomas.

Young herd—1, Thorpe. 2, Cook. 3, Brown.

Calf herd—1, Thomas. 2, Thorpe. 3, Brown.

Four animals, either sex, get of one sire—1, Thomas. 2, West. 3, Thorpe.

Two animals, either sex, produce of one dam—1, Thorpe. 2, West. 3, Brown.

Senior champion bull—Thorpe on Jolly Senator Raleigh.

Junior champion bull—Winsor Ranch on Beauty's White Sox.

Senior champion cow—Thorpe on Salome of Mossdale.

Junior champion cow—Thomas on Noble's Vida.

Grand champion bull—Thorpe on Jolly Senator Raleigh.

Reserve grand champion cow—Thorpe on Salome of Mossdale.

Ayrshires

Exhibitors: Alex. MacMinn, Litchfield, Ariz.; Mark Butterfield, Riverside; E. B. MacFarland, San Mateo.

Bull, 3 and over—1, MacFarland on Steybrae Improver. 2, MacMinn on Dairy King of Arizona.

Bull, 2 and over—1, MacMinn on Sparta Ebbie Burns.

Bull, junior yearling—1, MacFarland on Ayrment.

Bull, senior calf—1, MacFarland on Ayrment. 2, Butterfield on Finlayson Sunset. 3, MacFarland on Ayrment.

Bull, senior calf—1, MacFarland on Steybrae Juuchy. 2, MacFarland on Steybrae Douglas. 3, MacMinn on Butter Boy.

Cow, 3 and over—1, MacMinn on University Ivy Rose. 2, MacFarland on Willowmoor Vista 4th. 3, MacFarland on Steybrae Ellen.

Cow, 2 and over—1, MacFarland on Steybrae Mona. 2, MacMinn on Arizona Snowdrop. 3, MacFarland on Burnsides Miss Certney.

Heifer, senior yearling—1, MacMinn on Annie Rooney. 3, MacFarland on Ayrment No. 357. 3, MacFarland on Ayrment No. 356.

Heifer, junior yearling—1, MacFarland on Steybrae Gem. 2, MacMinn on Ayrshire Lass. 3, MacMinn on Bonnie Jean.

Heifer, senior calf—1, MacMinn on Lucy of Mountainview. 2, MacFarland on Steybrae Happy Girl. 3, MacFarland on Steybrae Vista.

Heifer, junior calf—1, MacFarland on Steybrae No. 088C. 2, MacMinn on Grace of Litchfield. 3, MacMinn on Arizona Dairy Maid.

Aged herd—1, MacFarland. 2, MacMinn.

Young herd—1, MacFarland. 2 and 3, MacMinn.

Calf herd—1, MacFarland. 2, MacMinn.

Four animals, either sex, produce of one cow—1, MacFarland. 2 and 3, MacMinn.

Senior champion bull—MacFarland.

Junior champion bull—MacFarland.

Senior champion cow—MacMinn.

Junior champion cow—MacMinn.

Grand champion bull—MacFarland.

Reserve grand champion bull—MacMinn.

Grand champion cow—MacMinn.

Reserve grand champion cow—MacMinn.

HORSES

Percherons

Exhibitors: Anita M. Baldwin, Santa Anita; J. J. Prendergast, Redlands; F. L. Hall, Perris; A. B. Miller, Fontana; Hall Bros., San Jacinto.

Stallion, 4 or over—1, Prendergast on Lousset.

Stallion, 3 or under 4—1, Baldwin on Arsar. 2, Hall on Baronet. 3, Baldwin on Mejus.

Stallion, 1 and under 2—1, Baldwin on Tryzar. 2, Miller on Boyhood Prince. 3, Baldwin on Nervezar.

Stallion colt—1, Hall.

Mare, 4 or over—1, Baldwin on Manon. 2, Baldwin on Marcotte. 3, Baldwin on Livie.

Mare, 2 and under 3—1, Hall Bros. on Miss Hall.

Mare colt—1, Baldwin. 2, Hall Bros. on Vanity.

Mare with foal at feet—1, Baldwin on Incomparable. 2, Hall on Berna.

Stallion and 3 of his get—1, Baldwin. 2, Hall.

Produce of mare—1, Hall.

One stallion and 4 mares—1, Baldwin.

Five stallions owned by exhibitor—Baldwin.

Grand champion stallion—Baldwin on Arsar.

Reserve grand champion stallion—Prendergast on Lousset.

Grand champion mare — Baldwin on Manon.

Reserve grand champion mare — Hall Bros on Miss Hall.

Clydesdales

Stallion, 4 or over—1, Dibble on Prince Edward.

Stallion, 2 and under 3—1, Dibble on Royal Willson.

Mare, 2 and under 3 — 1, Dibble on Bonnie's Blossom.

Mare, 1 and under 2—1, Dibble on Bonnie's Rosebud 2nd.

Stallion or filly foal under 1—1, Dibble on get of Bonnie Edward.

Grand champion stallion—Dibble on Royal Willson.

Reserve grand champion stallion—Dibble on Prince Edward.

Grand champion mare—Dibble on Bonnie Blossom.

Reserve grand champion mare—Dibble on Bonnie's Rosebud 2nd.

Grade Farm Horses

Four years and over—1, Falfadale Farm on Bird. 2, Langdon on Babe. 3, Webster on Pet.

Two year old—1, Falfadale Farm on Ruby.

One year old—1, Falfadale Farm on Sam.

Less than 1 year—1, Falfadale Farm on Queen.

Best grade team to wagon—1, Falfadale Farm on Colie and Bird.

Mare with 2 of her colts—Falfadale Farm on Beauty with Ruby and Sam.

Brood mare with colt at side—1, Falfadale Farm on Ukelele with Queen.

Grand champion mare—Falfadale Farm on Ruby.

Reserve grand champion mare—Falfadale Farm on Bird.

Heavy Percheron Draft Horses

Best two horse team, each horse 1600 or over—1, Baldwin.

Best two horse team, each horse under 1600—1, Falfadale Farm.

Best four horse team, each horse 1600 or over—1, Baldwin.

Mules

One year or over — 1, Baldwin on Sheba.

Jack, 4 or over—1, Carter on Col. Hammond.

Jack, 3 and under—1, Baldwin on Washaba. 2, Baldwin on Woodaba. 3, Baldwin on Halleba.

Jack, 1 and under 2—1, Baldwin on Carriba.

Jennet, 4 and over and foal at feet, both to be considered—1, Baldwin.

Jennet, 4 and over—1, Baldwin on Bell King. 2, Baldwin on Lucy Pitzer.

Jack or filly foal under 1 year—1, Baldwin on Payneba.

Four animals under 4, get of one sire—1, Baldwin.

Grand champion jack—Baldwin on Washaba.

Reserve grand champion jack—Baldwin on Mareba.

Grand champion jennet—Baldwin on Bell King.

Reserve grand champion jennet—Baldwin on Lucy Pitzer.

HOGS

Berkshire

Exhibitors: Italian Vineyard Co., Guastl-C. T. Johns, Cucamonga; F. D. Bastanchury, La Habra; Geo. A. Stingle, El Monte; A. B. Humphrey, Escalon; F. L. Hall, Perris; Hall Bros., San Jacinto; Mrs. N. B. Walters, Perris; Gardiner Blackman, Long Beach; Inglewood Union High School; John Donaldson, Perris; San Diego County Farm.

Boar, 2 and over—1, Bastanchury on Royal Longfellow, 5th. 2, Ames Rival Rival 118th. 3, Italian Vineyard on Champion Masterpiece, 8th.

Boar, senior yearling—1, Humphrey on Escalon Type. 2, Italian Vineyard on Model Leader, 3rd.

Boar, junior yearling—1, Humphrey on Escalon Big Joe. 2, Humphrey on Grape Wild Challenger. 3, Italian Vineyard on Real Type of Symbolier.

Boar, senior pig—1, Humphrey on Escalon Model Leader. 2, Hall on Rose Crest Rival, 10th. 3, Italian Vineyard on Rose Crest Rival, 12th.

Boar, junior pig—1, Italian Vineyard on Matchless Type, 2nd. 2, Humphrey on Grape Wild Champion. 3, Humphrey on Grape Wild Champion 2nd.

Sow, 2 and over—1, Italian Vineyard on Duke's Natomas Princess. 2, Humphrey on Grape Wild Rose, 2nd. 3, Italian Vineyard on Wilsonia Laurel Princess.

Sow, senior yearling—1, Humphrey on Grape Wild Rose, 6th. 2, Inglewood Union High School on Rival's Matchless Lady. 3, Walters on Doon's Pug.

Sow, junior yearling—1, Humphrey on Grape Wild Rose, 8th. 2, Italian Vineyard on Violet Fern. 3, Italian Vineyard on Meadow View Duchess, 6th.

Sow, senior pig—1, Italian Vineyard on Castleview Royal Duchess. 2, Humphrey on Escalon May, 13th. 3, Italian Vineyard on Real Type Belle, 4th.

Sow, junior pig—1, Humphrey on Grape Wild Rose, 19th. 2, Humphrey on Grape Wild Rose, 21st. 3, Johns on Real Type Lassie.

Aged herd—1, Humphrey. 2, Italian Vineyard. 3, Bastanchury.

Young herd—1, Humphrey. 2, Italian Vineyard.

Get of sire—1, Humphrey on get of Big Leader. 2, Italian Vineyard on get of Real Type. 3, Hall.

Produce of sow—1, Humphrey. 2, Italian Vineyard. 3, Bastanchury.

Breeders aged herd—1, Humphrey.

Breeders young herd—1, Humphrey.

Pen of 3 fat barrows—1, Humphrey. 2, Italian Vineyard. 3, Italian Vineyard.

Championships

Senior champion boar—Humphrey on Escalon Big Joe.

Junior champion boar—Humphrey on Escalon Model Leader.

Grand champion boar—Humphrey on Escalon Big Joe.

Reserve grand champion boar—Humphrey on Escalon Model Leader.

—REGISTERED---FEDERAL TESTED—

150 HOLSTEINS 150

At Public Auction

State Fair Grounds, Sacramento, Cal.

November 10-11, 1920

Toyon Farm Association, with a total of 350 registered Holsteins on their farms, have decided to consolidate their Holsteins into one herd on the Brentwood Farm, and to conform with present accommodations on this farm, a reduction is necessary. This sale will be the means of making the reduction, and some of the most promising cows and heifers in the entire holdings will sell. The offering will include approximately

100 COWS
of Milking Age

30 HEIFERS
Bred and Open

25 BULLS
Mostly Ready for Service

The female offering contains the largest number of yearly record cows and heifers, daughters of yearly record dams, and females now on yearly test, that have yet appeared in a western sale.

The breeding of the offering throughout is most substantial and popular, and the type of the offering is especially satisfactory. A general summary of some of the individuals and groups includes:

14 DAUGHTERS OF SIR BESSIE FOBES TRITOMIA, who is by Fobes Tritomia Mutual De Kol, and out of Jessie Fobes Bessie Homestead, 34.96 lbs. butter in 7 days as a 4-year-old, 932.74 lbs. butter in one year at mature age, and she topped the Detroit National Sale at \$4,600.00. These are out of dams with records up to over 27 lbs. butter in 7 days, and several out of dams now making good yearly records or with yearly records already completed.

2 DAUGHTERS OF SIR ORMSBY BURKE SEGIS, both with good records and out of good record dams.

A DAUGHTER of Johanna Colantha Champion, with 568.58 lbs. butter to her credit in 296 days as a 3-year-old.

A 24-POUND DAUGHTER of Sir Korndyke Hengerveld De Kol 31st, with 644.30 lbs. butter in one year as a 4-year-old.

A 23-POUND DAUGHTER of Sir Korndyke Hengerveld De Kol 11th, out of a 26.08-lb. 2-year-old daughter of a 31-lb. cow.

A 23-POUND COW with 627.50 lbs. butter in one year, again on yearly test with 443.19 lbs. butter to her credit in 198 days.

A 21-POUND DAUGHTER of Sir Fayne Concordia, with 630.75 lbs. butter in one year as a 4-year-old, out of a daughter of King Segis Pontiac.

A 24-POUND GRANDDAUGHTER of Colantha Johanna Lad, with 628.60 lbs. butter in one year.

A 23-POUND granddaughter of King Walker, bred to Sir Aaggie Mead.

A 21-POUND 3-YEAR-OLD, with 760.01 lbs. butter in one year.

A 19-POUND 3-YEAR-OLD daughter of Sir Korndyke Pietertje Hartog, with 760 lbs. butter from over 18,000 lbs. milk in one year.

A 4-YEAR-OLD with 403.47 lbs. butter to her credit in 232 days, her dam a 26-lb. cow.

A 19-POUND 4-YEAR-OLD with 358.74 lbs. butter to her credit in 184 days, her dam a 20-lb. 4-year-old granddaughter of Pontiac Korndyke.

A 19-POUND 3-YEAR-OLD with 318.26 lbs. butter to her credit in 137 days. By a son of Vickery Vale, 937.35 lbs. butter from 21,550.6 lbs. milk in one year.

A 23-POUND DAUGHTER of Colantha Johanna Champion out of a 20-lb. dam.

A 21-POUND granddaughter of Homestead Grl De Kol Sarcastic Lad, out of a 23-lb. dam.

A DAUGHTER of Sir Cascade Blossom Fayne, calving at 19 months has to her credit 379.92 lbs. butter in 244 days. Her dam now on yearly test with over 600 lbs. butter to her credit as a 3-year-old.

A GRANDDAUGHTER of Sir Korndyke Hengerveld De Kol, out of a dam that made 799.20 lbs. butter in one year as a 3-year-old.

A DAUGHTER of Sir Johanna Ruth Fayne, with 320.50 lbs. butter to her credit in 126 days, and bred to Sir Pietertje Ormsby Mercedes 43d.

A 2-YEAR-OLD daughter of Sir Johanna Ruth Fayne, bred to Sir Aaggie Mead.

A 2-YEAR-OLD daughter of Chima-cum Spring Farm King Pontiac, bred to Sir Aaggie Mead.

A 21-POUND 4-YEAR-OLD daughter of Sir Korndyke Ormsby De Kol, with 520.33 lbs. butter to her credit in 278 days.

A GRANDDAUGHTER of Sir Korndyke Hengerveld De Kol, out of a dam that made 704 lbs. butter in one year.

A DAUGHTER of North Star Happy Bonheur, out of a dam that made 799.20 lbs. butter in one year as a 3-year-old.

A 2-YEAR-OLD daughter of Sir Skylark Ormsby Hengerveld, now doing well on yearly test, and bred to Sir Pietertje Ormsby Canary.

A 643-POUND YEARLY RECORD COW, bred to Sir Pietertje Ormsby Canary.

A 17-POUND 2-YEAR-OLD granddaughter of Friend Hengerveld De Kol Butter Boy, out of a 644-lb. 4-year-old yearly record dam, second dam a 24-lb. 3-year-old, third dam a 22-lb. cow with 971.56 lbs. butter in one year.

DOZENS OF OTHERS with records up to over 24 lbs. butter in 7 days, many with yearly records or now on yearly test.

Females of Breeding Age in Calf to These Bulls:

SIR PIETERTJE ORMSBY MERCEDES 43D, whose sire is the world famous Sir Pietertje Ormsby Mercedes, and whose dam, Aaggie Wayne Peep, holds the world's record for butter production for five years, 4,992.03 lbs. from 110,706.5 lbs. milk.

SIR PIETERTJE ORMSBY CANARY, also by Sir Pietertje Ormsby Mercedes, and out of an 862.88-lb. record 3-year-old whose dam made 1,009.87 lbs. butter in one year.

SIR AAGGIE MEAD, by Sir Aaggie De Kol Acme, son of the world's record Aaggie Acme of Riverside 2nd, and out of the 1,215-lb. strictly official record cow Aralia De Kol Mead, her dam the 1,142-lb. former world's record cow Aralia De Kol.

What Are These Things Worth to You as a Buyer?

This is the first entire offering of Federal tested cattle ever made in California.

No animal of breeding age, except fresh cows, will be offered unless believed to be safe in calf.

Note again the splendid breeding of the five bulls whose service these females carry. Their offspring

HAZELWOOD DE KOL HENGERVERELD, by a proven grandson of Hengerveld De Kol and out of the 33.79-lb. cow Bonnie Lass Pauline, dam of Bonnie Ormsby Lass, Grand Champion cow at Panama-Pacific International Exposition.

NORTH STAR HAPPY BONHEUR, who is by Johanna Bonheur Champion a son of the famous show and breeding cow Johanna Bonheur, 890.84 lbs. butter in one year, and by a son of the former world's record cow Colantha 4th's Johanna, 1,247.83 lbs. butter in one year. His dam is a 30-lb. cow with 657.19 lbs. butter in 349 days, and she is by a son of the 813.30-lb. yearly record cow Lady Ormsby. This bull will be sold in the sale.

will carry splendid value anywhere.

There will not be more than three females in the sale with blemished udders.

Every animal positively guaranteed to be a breeder; every animal with individual Federal tuberculin test certificates, and sold subject to retest.

25 Bulls of Substantial Merit

While some of the bulls in this offering would not be out of place at the head of registered herds, yet it is hoped to make the offering of especial attraction to dairymen. A very large percentage of these bulls are ready for service, many of them out of dams now making splendid yearly records.

Plan now to attend this sale, for it is an offering of breeding animals combining qualities of type, production, breeding, and good health such as has seldom if ever been made in a sale of like magnitude in the west.

Owners: TOYON FARM ASSOCIATION

Farms: Los Altos, Brentwood

Office: Mills Building, San Francisco

For Catalog of Sale Address Management

Auctioneer:

Col. Ben A. Rhoades, Los Angeles
Col. John A. Davis, Manteca

Management

California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Manager, Sacramento, Cal.

Rhoades & Rhoades

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Col. Ben A. Rhoades

Harold B. Rhoades

Sales conducted in all parts of California
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REG. BEEF CATTLE

We conduct sales of grade dairy cattle and general farm sales in all
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F. C. Fairbanks Ranch Hampshires

The Grand Champion Boar HARVEY'S CHOICE 53147
at head of our great herd of brood sows

HARVEY'S CHOICE

Grand Champion Boar

at Los Angeles, 1919

18 High Class Brood Sows in herd—young stock for sale

A. E. Harvey, Manager

Redlands, Cal.

LOOKOUT CHEROKEE

Grand Champion at Liberty Fair

SIOUX QUEEN

Grand Champion at P.P.I.E.

Italian Vineyard Company

Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them.
Priced at a figure any farmer can afford and that will show him a profit.

Alex. Wilson, Supt., Guasti, Cal.

Castlevue Ranch Berkshires

The Home of ACHIEVER the Boar and Enhancer, the Other Boar

A few choice boar pigs for sale sired by the above boars. A few choice
bred sows for sale at reasonable prices.

Castlevue Ranch

Santa Rosa, Cal.

The boar is 60 per cent of the herd. We
showed the 1st prize aged boar at the
state fair this year. We have some of
his pigs, both sexes, for sale at reason-
able prices.

Big Money Boring Wells

Have water on your own farm.
In spare time make wells for your
neighbors. It means \$1000 extra in
ordinary years, double that in dry
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Outfits for Getting Water Anywhere
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combined machines. Engine
or horse power. Write for
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Box 716 Clarinda, Iowa

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BONE and QUALITYMore is required of horses than ever
before hence the need of more size,
weight and power. Large geldings never
were higher. Shire geldings usually top
the market. Use Shires to raise larger
and better horses.For information on Shires write,
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Association, Topica, Illinois

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Expert Livestock Auctioneer

Have now established permanent headquarters at
my new U. & I. Union Stockyards, midway between
Pomona and Ontario. Can thus command a wider
field of rich dairy and swine breeding interests. 25
years' experience buying and selling in the heart
of Iowa. For real service write me at

539 E. Pasadena St., Pomona

Senior champion sow—Humphrey on
Grape Wild Rose, 6th.
Junior champion sow—Italian Vineyard
on Castlevue Royal Duchess.
Grand champion sow—Humphrey on
Grape Wild Rose, 6th.
Reserve grand champion sow—Italian
Vineyard on Duke's Natomas Princess.
Duroc-JerseyExhibitors: Falfadale Farms, Perris;
Winsor Ranch, Bonita; J. E. Thorp,
Lockeford; Diamond Bar Ranch, Spadra;
J. C. Craig, Owensmouth; Hollow-Hill
Farm, Colton; Charnock Ranch, Hemet;
Brant Rancho, Owensmouth; H. M. Lord,
Owensmouth; C. W. Russell, Riverside;
H. P. Warren, Colton; Mrs. R. E. Whitley,
Van Nuys; Sierra Vista Ranch, Perris;
San Diego County Farm; W. P. Hodge,
Hinkley; J. A. Gailey, San Marcos; G. E.
Gordon, L. A.; A. L. Ludwig, Downey;
Theo. Forney, Ontario; James R. Barry,
Chino; Frank Curtis, Chino.Boars, 2 and over—1, Brant Rancho on
May Rose King. 2, Sierra Vista Ranch
on King Orion, Jr. 3, Winsor Ranch on
Winsor's Giant Orion.Boar, senior yearling—1, Falfadale
Farms on Great Orion Sensation, Jr.Boar, junior yearling—1, Charnock
Ranch on Charnock Cherry Friend. 2,
Craig on Jack's Cherry Vic.Boar, senior pig—1, Brant Rancho on
May Rose Taxpayer. 2, Craig on Path-
finder's Likeness, Jr. 3, Diamond Bar on
Cherry's Model.Boar, junior pig—1, Diamond Bar on
Cherry Pathfinder. 2, Falfadale Farms on
Big Bone Sensation. 3, Craig on Model
King Orion.Sow, 2 and over—1, Diamond Bar on
Lucy Pathfinder. 2, Diamond Bar on
Pathfinder's Molly. 3, Charnock Ranch
on Allie C. Ned.Sow, senior yearling—1, Diamond Bar
on Orion Girl. 2, Diamond Bar on Path-
finder's Very Best. 3, Winsor Ranch on
Sensation Queen.Sow, junior yearling—1, Diamond Bar
on Orion Sensation Lady. 2, Diamond
Bar on Smooth Duchess. 3, Winsor
Ranch on Proud Chiefess.Sow, senior pig—1, Diamond Bar on
Wonder's Queen. 2, Winsor Ranch on
Model Sensation Lady. 3, Diamond Bar
on Lena Sensation.Sow, junior pig—1, Falfadale Farms on
Miss Defender Sensation. 2, Diamond
Bar on Cherry Duchess, 2nd. 3, Thorpe
on Sensation Girl of M.Aged herd—1, Diamond Bar. 2, Falfadale
Farm. 3, Diamond Bar.Young herd—1, Diamond Bar. 2, Falfadale
Farm. 3, Craig.Produce of dam—1, Diamond Bar. 2,
Falfadale Farm. 3, Craig.Breeders young herd—1, Diamond Bar.
2, Falfadale Farm. 3, Diamond Bar.Get of sire—1, Diamond Bar on get of
Pathfinder. 2, Diamond Bar on get of
Ace of Pathfinder. 3, Falfadale Farm
on get of Great Orion Sensation, Jr.Senior champion boar—Falfadale Farm
on Great Orion Sensation, Jr.Reserve senior champion boar—Brant
Rancho on May Rose King.Junior champion boar—Diamond Bar on
Cherry Pathfinder.Reserve champion boar—Brant Rancho
on May Rose Taxpayer.Grand champion boar—Falfadale Farm
on Great Orion Sensation, Jr.Reserve grand champion boar—Brant
Rancho on May Rose King.Senior champion sow—Diamond Bar on
Lucy Pathfinder.Reserve champion sow—Diamond Bar
on Orion Girl.Junior champion sow—Falfadale Farm
on Miss Defender Sensation.Reserve champion sow—Diamond Bar
on Wonder's Queen.Grand champion sow—Diamond Bar on
Lucy Pathfinder.Reserve grand champion sow—Diamond
Bar on Orion Girl.

Hampshire

Exhibitors: Fairbanks Ranch, Red-
lands; F. A. Langdon, Perris; Tarzana
Ranch, Van Nuys; E. Avery Newton, L.
A.; G. N. Losekamp, Riverside; Robt. N.
Clapp, Nuevo.Aged boar—1, Fairbanks on Harvey's
Choice. 2, Llano Vista Ranch on Sasin.
3, Tarzana Ranch on Black Beauty.Senior yearling boar—1, Newton on
Golden Lad. 2, Fairbanks on Chong.Junior yearling boar—1, Fairbanks on
Joe. 2, Tarzana Ranch on Tarzana Allen.Senior boar pig—1, Newton on Arenal
Tipton. 2, Clapp on Chief Ruler.Junior boar pig—1, Tarzana Ranch on
Tarzana Senator 1st. 2, Tarzana Ranch
on Tarzana Senator, 2nd. 3, Tarzana
Ranch on Tarzana Senator, 3rd.Aged sow—1, Tarzana Ranch on Flor-
eine 2nd. 2, Tarzana Ranch on Mary
Pickford. 3, Tarzana Ranch on Wavelet.Senior yearling sow—1, Langdon on
Lotus. 2, Langdon on Minerva Tipton.Junior yearling sow—1, Langdon on
Dusky Queen. 2, Fairbanks on Flower.
3, Fairbanks on Blossom.Sow, senior pig—1, Newton on Arenal
Princess. 2, Newton on Arenal Beauty.
3, Tarzana Ranch on Tarzana Princess
1st.Sow, junior pig—1, Newton on Miss
Floireine 1st. 2, Newton on Miss Floireine
2nd. 3, Newton on Arenal Belle.Aged herd—1, Tarzana Ranch. 2, Fair-
banks Ranch. 3, Tarzana Ranch.Young herd—1, Newton. 2, Tarzana
Ranch. 3, Newton.Get of sire—1, Newton. 2, Tarzana
Ranch. 3, Newton.Produce of dam—1, Newton. 2, Tar-
zana Ranch. 3, Newton.Breeder's aged herd—1, Fairbanks
Ranch. 2, Tarzana Ranch. 3, Langdon.

Pen of 3 fat barrows—Tarzana Ranch.

Senior champion boar—Fairbanks Ranch
on Harvey's Choice.Reserve senior champion boar—Fair-
banks Ranch on Joe.Junior champion boar—Tarzana Ranch
on Tarzana Senator, 1st.Reserve junior champion boar—Fair-
banks Ranch on Arenal Tipton.Grand champion boar—Fairbanks Ranch
on Harvey's Choice.Reserve grand champion boar—Fair-
banks Ranch on Joe.Senior champion sow—Tarzana Ranch
on Floireine 2nd.
Reserve senior champion sow—Langdon
on Lotus.
Junior champion sow—Newton on Miss
Floireine 1st.
Reserve junior champion sow—Newton
on Arenal Princess.
Grand champion sow—Tarzana Ranch
on Floireine 2nd.
Reserve grand champion sow—Newton
on Miss Floireine 1st.

Poland China

Exhibitors: H. L. Graham, San Fernan-
do; E. Avery Newton, L. A.; Anita M.
Baldwin, Santa Anita; M. A. Packer,
Riverside; H. Christiansen, Riverside; J.
L. Dunlap, Pomona; Will Mays, River-
side; Albert Canham, Riverside; Col. W.
C. Lookingbill, Pomona; W. B. Gemmill
& Sons, Ontario; Henry Mackey, River-
side; Carl W. Roseen, Ontario; Clyde
Ford, Ontario; N. C. Kelley, Corona.Boars, 2 and over, 1, Christiansen on
President's Model. 2, Gemmill on Green-
field's Big Boy 5th.Boars, senior yearling—1, Baldwin on
Greenwood King. 2, Christiansen on
Tourist Master. 3, Mackay on Royal
Chief.Boars, junior yearling—1, Eastman
Rancho on Buster Bob. 2, Dunlap on
Longfellow Timm. 3, Newton on Prices
Longfellow.Boars, senior pigs—1, Eastman Rancho
on Eastmans Korver. 2, Dunlap. 3,
Packer on Bonus No. 1.Boars, junior pigs—1, Baldwin. 2,
Eastman Rancho. 3, Baldwin.Sows, 2 and over—1, Baldwin on Miss
Big Price. 2, Christiansen on Miss
Dandy. 3, Christiansen on Liberty Girl.Sows, senior yearling—1, Baldwin on
Santa Anita Orange Bud. 2, Baldwin on
Miss Wonders Price. 3, Dunlap on Miss
Lady 6th.Sows, junior yearling—1, Baldwin on
Perfect Beauty. 2, Baldwin on I. S. C. of
19. 3, Christiansen on Miss Prudence.Sows, senior pigs—1, Eastman Rancho
on Smooth Maid. 2, Anita M. Baldwin.
3, Dunlap.Sows, junior pigs—1, Anita M. Baldwin.
2, Anita M. Baldwin. 3, Anita M. Bald-
win.Aged Herd—1, Anita M. Baldwin. 2,
Christiansen. 3, Dunlap.Young herd—1, Anita M. Baldwin. 2,
Dunlap. 3, Newton.Get of sire—1, Anita M. Baldwin. 2,
Dunlap. 3, Newton.Produce of one sow—1, Baldwin. 2,
Dunlap. 3, Newton.Breeders young herd—1, Newton. 2,
Christiansen. 3, Mays.Senior champion boar—Eastman
Rancho on Buster Bob.Reserve senior champion boar—Chris-
tiansen on President's Model.Junior champion boar—Eastman
Rancho on Eastman's Korver.Reserve junior champion boar—Bald-
win.Grand champion boar—Eastman Rancho
on Buster Bob.Reserve grand champion boar—Eastman
Rancho on Eastman's Korver.Senior champion sow—Baldwin on Miss
Big Price.Reserve senior champion sow—Baldwin
on Santa Anita Orange Bud.

Junior champion sow—Baldwin.

Reserve junior champion sow—Eastman
Rancho on Smooth Maid.Grand champion sow—Baldwin on Miss
Big Price.Reserve grand champion sow—Baldwin
on Santa Anita Orange Bud.

RABBITS

Flemish Steel Rabbits

Senior doe—1, Howland. 2, Kreigh-
baum.
Spec. buck—1, and 2, Camps.
Spec. doe—1 and 2, Camps.
Junior doe—1 and 2, Howland.
Junior buck—1, Howland. 2, West.

Flemish Natural Grey

Senior buck—1, Ditzel.
Senior doe—1, Oldenhege. 2, Riverside
Rabbitry.
Spec. buck—1, Howland.
Spec. doe—1, Oldenhege. 2, Ditzel.
Junior buck—1 and 2, Oldenhege.
Junior doe—1 and 2, Oldenhege.

Flemish Blacks

Senior buck—1, Holmes.
Senior doe—1 and 2, Holmes.
Junior buck—1, Holmes.
Junior doe—1 and 2, Holmes.
Spec. doe—1, Holmes.

Flemish Whites

Senior doe—1 and 2, Howland.
Junior/buck—1, Howland. 2, L. A. Fur
Farm.
Junior doe—1, Howland. 2, L. A. Fur
Farm.

American Checkered Giants

Senior doe—1 and 2, L. A. Fur Farm.
Junior doe—1 and 2, L. A. Fur Farm.
Himalayans
Junior buck—1, Richey.

American Blue

Senior buck—1, Mrs. Richey.
Senior doe—1, Durr.
Spec. doe—1, Seymour Thompson.
Junior buck—1, Durr.
Junior doe—1, Durr.
Spec. buck—1, Thompson.

New Zealand

Senior buck—1, Mrs. Bell. 2, Scues.
Senior doe—1, Sunny Slope Rabbitry.
2, Abbott.
Spec. buck—1, Periwinkle Rabbitry. 2,
Mrs. Richey.
Spec. doe—1, Periwinkle Rabbitry.
Junior buck—1, Sunny Slope Rabbitry.
2, Mrs. Richey.
Junior doe—1, Mrs. Bell. 2, Abbott.

Does and Litters

Does and litters—1, Sques.

Silver Black Flemish

Junior buck—1, Dr. Holmes.
Senior doe—1, Dr. Holmes.

Black Himalayans

Senior buck—1, Mrs. Bell.

English Fur

Senior buck—1, Mrs. Bell.
Senior doe—1, Mrs. Bell.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins

November 10-11, Toyon Farms Association Sale at Sacramento.

December 1, H. E. Vogel, Fresno.

December 2, Consignment Sale, Tulare.

December 16-17, Consignment Sale, Sacramento.

Herefords

November 4, Pacific Coast Hereford Breeders' Association, Sacramento.

November 5, J. H. Cazler & Sons, Sacramento.

November 6, H. M. Barngrover, Sacramento.

November 18, Finnel Ranch Company, Sacramento.

Shorthorns

November 16, Caledonia Farms, West Sacramento.

Professor E. H. Hughes, in charge of the swine department, University of California, has recently purchased the aged Berkshire boar, Ames Rival, 118th from F. L. Hall, Perris, to be used in the university herd. Ames Rival 118th was sired by Rival's Champion Best and is therefore a half brother to the noted Laurel Champion and other prominent boars.

Professor Gordon H. True, head of the animal husbandry division, University of California, who is on a year's leave of absence, sailed October 6 to Hawaii where he will judge the annual fair on the island of Maui. Professor True plans to return to the mainland in time to attend the Portland livestock show.

It has been announced that the following California breeders will make exhibits at the Pacific International to be held at Portland next month: T. S. Glide, Davis; Pacheco Cattle Company, Hollister, and William Bond, Newark, will show Shorthorns. Mrs. Anita M. Baldwin, Santa Anita; Burr Farm, Los Angeles; W. J. Higdon, Tulare; George Junior Republic, Chino; and Stalder Bros., Riverside, will show Holsteins. The University of California will also show fat steers, barrows and wethers.

Jack Borge, Duroc breeder of Dos Palos, reports the following sales: four boars to Miller and Lux; two boars to Manuel Bettencourt, Ollima; a boar and gilt to Marshall and Co., Los Banos, and sows to B. B. Shaw, Hollister; Leek and Gelerti, Dos Palos.

Perfection Fairfax, one of the greatest sires ever produced in the Hereford breed, died last month at the home of his former owner, Warren T. McCray, Kentland, Indiana, at the age of 17 years. Perfection Fairfax was largely responsible for the many sensational sales held by McCray, his get being held in high esteem by all breeders.

Gretel's Son, 4-year-old buck, half brother to California Gretel, the world's record milch goat, and head of the Toggenburg flock at the University of California farm, Davis, for several years, and El Chivar's Hertha, one of the choicest Toggenburg does in the herd at the university farm, were among the goats sent recently from the university farm to the agricultural experiment station of Hawaii.

These animals will be foundation stock for a herd of Toggenburgs at the Hawaiian experiment station.

J. Henry Meyer has appointed L. W. Wing as manager of Elkhorn Farm, near Watsonville, where a very high class herd of purebred Ayrshires is maintained. For the last three years Mr. Wing has been associate professor of dairy production at the Oregon Agricultural College. Previous to this he taught at the University of Missouri for two years, and it was from that institution he received a masters degree. He also spent one year at Cornell University taking special graduate work.

Distribution of excess profits made

by dealers who handled the wool clip in 1918 under regulations of the war industries board is being made by the United States department of agriculture to some 100,000 wool growers. It is estimated by the bureau of markets, which has charge of making the refund from the dealers to the growers, that the total amount of such excess profits was more than \$1,000,000, of which approximately \$460,000 has been turned over to the bureau for distribution.

Records in Guernsey cattle prices were not only maintained but passed at the recent Langwater farm sale in Massachusetts. F. Lothrop Ames sold at auction 51 Guernsey cattle for a total of \$146,125, an average of \$2,865. The Ames sale in October, 1916, averaged \$1,075 for 75 head, which at that time was far ahead of any previous sale.

The 16 daughters of a single bull, Langwater Warrior, sold for \$88,525, an average of \$5,533.

Langwater Steadfast, a 6-year-old bull, was sold privately by Mr. Ames to George Cluett, New York, for \$25,000.

Rebecca of Sunny View, a Guernsey cow owned by Hollow-Hill Farm, Colton, has completed a record of 11,730.1 pounds of milk and 647.86 pounds of butter fat in the senior four year old division of the Roll of Honor. This record entitles her to eighth place in her class. Rebecca of Sunny View won first in produce of dam at the 1920 California state fair. Her two sons are Reuben King of Hollow-Hill Farm and Reuben Langdon of Hollow-Hill Farm. Both bulls won first prizes in their respective classes at the same fair. Reuben King of Hollow-Hill Farm was awarded the junior championship, and was a member of the first prize breeders' young herd.

W. H. Dupee, Hollow Hill Farm, A. B. Humphrey and Russell S. Cox of San Marcos were the exhibitors in the Guernsey show. J. B. Fitch of the Kansas agricultural college, who tied the ribbons, said that the classes shown would do credit to any Eastern fair or to the National Dairy Show.

Masterpiece of Edgemoor, owned by Dupee, was right up on his toes and defeated his stable mate, Vedas May King of Edgemoor, who was grand champion at Los Angeles, in the senior yearling bull class, and was eventually made grand champion. Dupee's cow, Imp. Cheminante 11th, the Los Angeles grand champion, did not show in good condition and was second to Imp. Cherry 3rd of the Effords, owned by Hollow Hill Farm. This winning made Cherry an easy senior and grand

NOW READY TO SHIP

DRIED BEET PULP

Palatable succulent vegetable feed for dairy cows, beef cattle, sheep and hogs

We can take care of orders from any part of the country

The Larrowe Milling Company
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Holstein Bull Calves For Sale Very Reasonable

Sired by Sir Veeman Korndyke Pontiac and out of yearly record cows. Write for prices, photo and pedigree.

BURR FARM

Box 220, Route 2. East 26th and Downey Road, Los Angeles

The Victory Herd of Holsteins

Holsteins of known value, headed by Sir Plebe De Kol Segis Pontiac, a son of King Segis Pontiac Count, acknowledged one of the breed's greatest sires, and our junior herd sire, King Pontiac Alcartra Prilly, whose dam made 36.61 lbs. butter out of 805 lbs. milk in 7 days, now on yearly test. A young bull from this herd is a profitable investment.

HILLCREST FARM, H. E. Spires, Mgr., Caruthers, Cal.
Duroc-Jersey Swine of Highest Quality

Home of King Korndyke Pontiac Mead

Bargains in Bull Calves from Tested Dams.
Top Herd in U. S. for Fat Production of 100 cows.
LOS ANGELES COUNTY FARM HOLSTEINS
HONDO, CALIF.
3 Miles South of Downey on Downey-Long Beach Blvd.

Shorthorn Cattle Make Good

The good milking, well fleshed Shorthorn cow is the popular favorite on the farms. Shorthorn steers are continually selling at the top of the markets. Shorthorn cows are making milk records far in excess of many strictly dairy-bred cows. Use a Shorthorn bull and put in two or three well bred Shorthorn females.

American Shorthorn Breeders' Association,
13 Dexter Park Ave. Chicago, Ill.

ALAMO HERD

(Founded by the Late Gov. Sparks)

Registered Herefords

Herd and range bulls reasonable.
Largest Hereford Herd in California.

W. D. Duke, Gazelle, Siskiyou Co., Cal.

Hereford Farms

Geo. Watterson, Owner

Bishop, Inyo County, Cal.

Anxiety, Repeater, and Bonnie Brae breeding. Bred and raised on mountain range.

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That Guarantee Little Trouble and Little Expense

Besides the supreme United States qualities of close skimming, easy turning and easy cleaning—features of which the owner is conscious in every-day use—here are a few of the construction details that stamp the United States Cream Separator as a fine, long-lived, finished mechanism:

One-piece sanitary frame—easy to clean; heavy enough to prevent excessive vibration.

All gears enclosed; no wear from grit and dust.

Automatic oil-splash system—introduced by the United States; imitated by others.

Low and most practical-shaped supply can.

These and many other superiorities guarantee freedom from disappointment and frequent repairs.

Write for catalog and convince yourself that your next separator is to be a United States.

Vermont Farm Machine Corporation

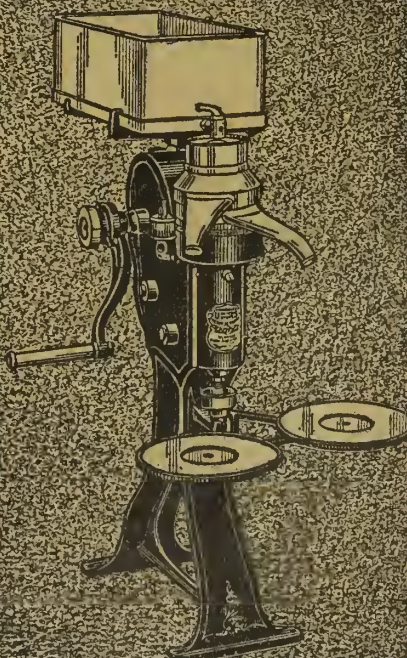
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UNITED STATES CREAM SEPARATOR WITH PERFECTED DISC BOWL



Second Public Sale

Caledonia Farms' Shorthorns

West Sacramento, Cal.
Friday, November 12

60 Scotch and Scotch Topped Shorthorns



IMP. CALEDONIA

THE OFFERING

30
Cows

Fifteen of them will sell with calves at foot, and a large proportion of the balance are heavy in calf. Practically all the calves and services are by Imp. Caledonia, Gainford Matchless and Pine Grove King. The females are by such noted sires as Glenbrook Marquis, Pine Grove King, Imp. Champion of Scotland, Fond Lavender, College Count, Whitehall of Orange, Lavender Viscount and others. Few offerings have included more of the blood of Whitehall Sultan.

20
Heifers

The heifers, most of which are well along to their first service, constitute a wealth of desirable herd material. In breeding they carry many of the best blood lines and individually they are of correct type. These young things can be taken into any herd with full assurance that they will grow into most profitable investments.

10
Bulls

Among the ten young bulls are several of excellent Scotch breeding while the others are well bred American sorts. Men in need of moderate priced herd bulls can buy here to advantage and the man who is interested in the better sort of range bulls cannot afford to overlook this sale. The bulls are well grown and of the type that will surely please. They will not be presented in extreme high condition.

Every animal is guaranteed to be a breeder. Every animal over six months old sells tuberculin tested.

Auctioneers:

Col. Ben A. Rhoades, Los Angeles; Col. John A. Davis, Manteca.

GAINFORD MATCHLESS

GET THIS VALUABLE BLOOD!

Think what it means to have an opportunity to add such notable breeding to your herd. No better breeding is available to western buyers

Imp. CALEDONIA is not only one of the richest bred and most desirable types that have been brought to America in recent years, but he is proving to be a sire of rare ability. Calves by him in Eastern sales have averaged as high as \$1500, and a number have stood well in the larger shows. Caledonia was added to this herd at a very long price and it is certain that his influence on Western Shorthorns will be great. Sons and daughters will come to have high values.

GAINFORD MATCHLESS is a son of the noted sire Gainford Marquis—winner of the get of sire class at the Canadian National for the last ten years—and out of a richly bred dam. He was first as a senior yearling at the International and was grand champion at the San Francisco show in 1919. He is a bull of commanding scale, extremely thick fleshed and boasts of rare quality. His worth is unquestioned.

PINE GROVE KING, son of King Cumberland, has by sheer ability been rated as one of the most impressive bulls owned in the West. Calves by Pine Grove King will be found in many of the best herds in California and in every case they are conceded to be right in every way. Pine Grove King blood is worth as much as any available in the entire West.

Catalog will be mailed on request to the management.

California Breeders Sales and Pedigree Co.
C. L. Hughes, Sales Manager, Sacramento, Cal.

champion. The awards were well split up and everyone got his share.

The beautiful Holstein hull, Dichter Spofford Korndyke Lad 5th, owned by the California George Junior Republic, was again grand champion, and King Korndyke Pontiac Acme, from the Santa Anita Rancho, was junior champion. The dope on grand champion cow was completely upset when F. H. Scribner of Los Angeles, who was pressed in to judge the Holsteins, chose the beautiful senior heifer calf, Anoakla Prince Johanna, belonging to the Santa Anita Rancho. This calf has made wonderful improvement in the past few weeks and she was worthy of the place. Santa Anita Rancho was the big winner in this division, but a number of breeders with a few animals who were showing for the first time were well up in the money.

In the Jerseys the awards were pretty well divided, but J. E. Thorp of Lockeford won both grand championships. Winsor Ranch of Bonita won junior champion bull with Beauty's White Sox. Grant A. Brown of El Monte and F. M. West of Fullerton were also consistent winners.

On account of an enforced attendance at the National Dairy Show, where his judging team won for the second successive year, Judge Fitch was late in arriving and the Ayrshires shown by E. B. MacFarland of San Mateo and A. MacMinn of Litchfield, Arizona, are still to be judged as this report is written.

Marshall and Son of Sebastopol, Sonoma County, announce sale of Headlight who was grand champion at Santa Rosa and reserve champion at the state fair, together with a fine lot of bred sows and gilts, at Santa Rosa fair grounds November 15. Amongst the offering will be pigs and spring boars sired by Headlight.

Harry Redd, who is now in charge of the Jane Garden herd of Holsteins owned by Fred W. Kiesel, Sacramento, is mighty busy this fall with 23 cows and heifers on test and 28 in preparation to go on test as they freshen between now and February 1. The two year old daughter of King Korndyke Pontiac, Jane Garden Magnolia Korndyke, has completed a seven day record of 22.505 pounds butter from 342.7 pounds milk. Two four year old cows have made 24.85 pounds and 24.6 pounds each. Redd is very enthusiastic over a number of prospects he is getting ready.

THE KINGS COUNTY POLAND CHINA SALE

The Poland China Breeders of Kings County held their tenth semi-annual sale of Poland China hogs at Hanford, Wednesday, October 20. The offering was presented in fair condition and taken as a whole was a very good lot. Unfortunately, quite a number of the offering were too young to be in very strong demand with those present. The range of prices was too low for the class of stock offered.

R. L. Waltz, Hanford, purchased the top of the sale, a Kings Timm gilt, consigned by Bassett Bros., at \$150. W. L. Haag & Son secured a choice Yankee Jr. gilt, consigned by Wm. Bernstein, at \$115. A few of the representative sales follow:

- 1, R. L. Waltz, Hanford, \$150.
- 2, W. L. Haag & Son, Hanford, \$115
- 3, Frank Johnson, Hardwick, \$70.
- 4, Chas. Putz, Laton, \$50.
- 14, Bassett Bros., Hanford, \$60.
- 18, Bassett Bros., \$70.
- 22, Allen Milner, Riverside, \$55.
- 23, John Bernstein, Hanford, \$100.
- 27, Geo. B. Hamblin, Hanford, \$90
- 28, Wm. Bernstein, Hanford, \$50.
- 33, Frank Johnson, \$50.
- 35, Bassett Bros., \$75.
- 36, J. H. Crawshaw, Hanford, \$50.
- 37, Fred D. Ross, Hanford, \$80.
- 40, Geo. Hamilton, Hanford, \$65.

CREAMERY OPERATORS CONVENTION

The California Creamery Operators will hold their annual convention in Hanford, November 18-20. This will be one of the most important meetings ever held in California. The matters to be presented are of such importance to the members of this organization that your presence is urgently requested.

Hollow-Hill Farm
GUERNSEYS

Won at the
Southern California Fair

Junior Champion and Reserve Grand Champion Cow on Rosie E. King of Hollow-Hill Farm and Senior and Grand Champion Cow on Imp. Cherry III of the Effards, defeating the best Guernsey females on the Pacific Coast and champions of the National Dairy Show, together with 8 firsts, 6 seconds and 2 thirds in one of the strongest Guernsey shows ever held in the West.

At the Los Angeles Livestock Show we won many prizes and at the State Fair our young stock—

All Bred and Raised at
HOLLOW-HILL FARM

won every first prize and two junior championships together with the coveted First Prize Herd Bred by Exhibitor.

We are ready to supply Guernseys of either sex which combine show type with high production. Consult us regarding foundation animals.

Hollow-Hill Farm

B. W. Shaper, Mgr.

COLTON, CAL.

CALEDONIA SHORTHORNS

Imp. Caledonia

Caledonia Shorthorns constitute one of the choicest collections of the breed owned in America. Our herd bulls, Imp. Caledonia, Gainford Matchless, grand champion at the 1910 San Francisco show and Pine Grove King stand out prominently in the West. Our females represent choice Scotch and American families, and are noted for their type and quality. We can at all times furnish foundation material and bulls suitable for any herd or for the range. Our prices are moderate and every animal is guaranteed. Visit our farm and herd. Send for special bull list.

CALEDONIA FARMS
WEST SACRAMENTO, CALIF.
OFFICE—57 POST ST. SAN FRANCISCO.

Ormondale Ranch
Shorthorns
Redwood City, Cal
HERD SIRES

Boquhan Guinea Stamp, the great Imported Young Broadheads bull, Golden Goods, Jr., sire of LITTLE SWEETHEART, Grand Champion International Show, Chicago, 1919.

Bulls and heifers for sale
Duroc-Jersey hogs for sale

James McDonnell, Supt.

The advertisers in the California Cultivator are known to be reliable and we recommend them to our many subscribers.

62—Registered Hereford Females—62

At Public Auction

Thursday, November 18, 1920

Finnell Stock Farm Company
Galt, California

Some months ago the owners purchased the entire herd of registered Herefords, numbering 180 head, from Kiesel Land & Stock Co. in Oregon, a larger number than they wish to carry, but it was necessary to buy the entire herd as a lot.

This sale will be the means of reducing the herd to the present capacity of their ranch. We wish to make it plain though that this is not an offering of the culs of the herd, for on the contrary an especial effort has been made to include in the sale list only such females as should prove profitable and satisfactory to the buyer, and in this connection especial attention is directed to the ages of the females.

43 OF THE FEMALES WERE BORN IN 1917 OR LATER
19 (all of the balance) WERE BORN IN 1913 OR LATER

This herd has been handled strictly under range conditions, and the cattle here offered should prove particularly valuable to those who wish to start in the business on a range basis.

The herd is headed by BEAU BLANCHARD 37TH, a son of the famous Beau Blanchard, and SIR THOMAS, both proven breeding bulls, each of which will have a number of desirable daughters in the sale.

Every animal guaranteed to be a breeder; every animal tuberculin tested.

Note—There are 23 yearling and 2 year old bulls in the herd, suitable for range service, not in the sale list, that may be bargained for at private treaty either now or on sale day.

Catalog of sale free on request

Management

California Breeders Sales & Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. John A. Davis, Manteca

75 Registered Holsteins 75

Of Unusually Good Type, and Most
Substantial Breeding

At Public Auction

Westlawn Farms, Fresno, Cal.
Wednesday, December 1, 1920

Twenty years of constructive breeding, with especial emphasis upon the type of the herd at all times, has resulted in a herd of registered Holsteins at Westlawn Farms that is most desirable in every way.

The owner, Mr. H. E. Vogel, will offer in this sale every female of milking age, some choice bred heifers, and a number of high class young bulls, retaining for his future breeding herd only the young heifers and heifer calves.

BETSEY LAMB PRILLY, the great 35 pound cow, Grand Champion at San Francisco in 1919, will be a star attraction, and she may rightly be rated as one of the most outstanding cows ever led into a public sale ring.

The offering contains many high record cows and heifers and daughters of such cows by richly bred sires, and the bred females are in calf to bulls of the most popular breeding. Watch for detailed announcements beginning next week.

Every animal positively guaranteed to be a breeder; every animal tuberculin tested and sold subject to retest by the buyer.

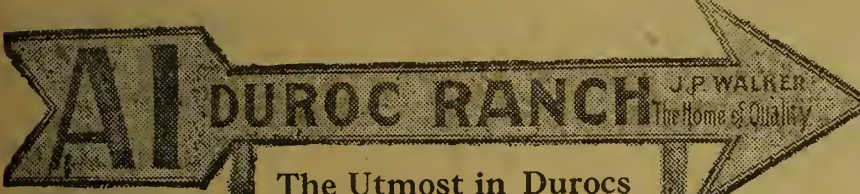
Catalog free on request

Management

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SIZE
TYPE
QUALITY
INDIVIDU-
ALITY

The Utmost in Durocs

Our herd of outstanding foundation animals is rich in the blood of
PATHFINDERS SENSATIONS
CREATORS ORIONS
DEFENDERS

This is the blood you need to insure your success. Superb breeding stock to suit your purse and purpose.
Visitors Welcome. Correspondence Invited.
J. P. WALKER, Visalia, Calif.

VALUABLE
BREEDERS
PROFITABLE
FEEDERS

TECUMSEH "BLANC"

No. 1469.

Pure Toggenburg Buck

Son of Bedelia, a more than 7½-qt. doe and imported 6-qt. grandams.

Famous for his 6-qt. daughters. Breeding fee \$10. Pure breds, \$15.

Stock for sale.

MRS. A. L. S. HANSEN

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Ship Your Farm Products
to Market by Truck

We Offer Bargains in Used Ford Trucks

We carry a good line of used Fords, all models. Be sure to see this one—1920 used Ford truck. Stake body, pneumatic tires, practically new. We guarantee all our used cars.

Clark & Coberly,

Authorized
Ford Dealers

2219 W. Pico St., Los Angeles

Fourth Tulare Sale

75---Registered Holsteins---75

Sales Pavilion, Tulare, Cal.

Thursday, December 2, 1920

As the entries for this sale near completion it is evident that buyers will be afforded an opportunity to select from a splendid list of well bred cattle, including a large number of fresh and heavy springing cows, and a most desirable lot of well bred heifers.

There are not many registered Holstein females for sale in the vicinity of this sale, and with the exceptionally bright outlook for the future of the Holstein breeding business this will be a splendid opportunity for the purchase of cattle with which to found new herds.

Consider that in every locality in California there never has been a more favorable time for the dairyman to dispose of his grade cattle and invest in purebreds, for the prices of grades have increased in proportion far beyond the increase in purebred prices, the latter being today upon the soundest sort of basis.

Watch for details of this offering beginning in next issue.

Catalog free on request.

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. G. W. Bell, Tulare

1000 Eggs in Every Hen

New System of Poultry Keeping—Get
Dollar a Dozen Eggs—Famous
Poultryman

TELLS HOW

"The great trouble with the poultry business has always been that the laying life of a hen was too short," says Henry Trafford, International Poultry Expert and Breeder, for nearly eighteen years Editor of Poultry Success.

The average pullet lays 150 eggs. If kept the second year, she may lay 100 more. Then she goes to market. Yet, it has been scientifically established that every pullet is born or hatched with over one thousand minute egg germs in her system—and will lay them on a highly profitable basis over a period of four to six years' time if given proper care.

How to work to get 1,000 eggs from every hen; how to get pullets laying early; how to make the old hens lay like pullets; how to keep up heavy egg production all through cold winter months when eggs are highest; triple egg production; make slacker hens hustle; \$5.00 profit from every hen in six winter months. These and many other money making poultry secrets are contained in Mr. Trafford's "1,000 EGG HEN" system of poultry raising, one copy of which will be sent absolutely free to any reader of this paper who keeps six hens or more. Eggs should go to a dollar or more a dozen this winter. This means big profit to the poultry keeper who gets the eggs. Mr. Trafford tells how. If you keep chickens and want them to make money for you, cut out this ad and send it with your name and address to Henry Trafford, Suite 243-N, Tyne Bldg., Birmingham, N. Y., and a free copy of "THE 1,000 EGG HEN" will be sent by return mail.

Save Money—Buy Pipe From Us

Farmers, Miners, Builders—people in every kind of business are saving money buying used or renewed pipe from us. We sell every kind of pipe. Send in a list of your requirements today and get our prices. We have saved hundreds of people 33 1-3 to 50% on their pipe bills. Here's a partial list of some of the miles of pipe we have in stock for immediate delivery:

8000 ft.	6-inch	Riveted	16 gauge
700 ft.	8-inch	Riveted	16 gauge
5000 ft.	12-inch	Riveted	12 gauge
1000 ft.	18-inch	Riveted	12 gauge
800 ft.	22-inch	Riveted	14 gauge
300 ft.	24-inch	Riveted	14 gauge
500 ft.	36-inch	Riveted	12 gauge
10,000 feet	light wrought iron	8-inch pipe with cast iron collars.	

All above pipe thoroughly overhauled and inspected and ready for immediate use.

We also have large quantity standard pipe and screw casing, pressure tested and guaranteed.

Don't delay—write for our prices on your pipe requirements today.

PACIFIC PIPE COMPANY
237 Howard St., San Francisco, Cal.

Adventuring With Chickens

By Jean A. Koethen



DEAR DAD: It's wonderful how this California sunshine goes to a body's head. Here I've been planning to write ever since the day we stepped out of the train, but things have kept happening right along, and when my wits weren't fairly jammed over the problem of where to locate, my eyes were so dazzled and my brain so addled with the newness of it all that I couldn't hold a pen. Now that we're settled at last, I may be able to tell you something about it.

We bought rather suddenly, for all our hunting and fussing. A ready stocked poultry ranch was what we were after, you remember, and maybe we should have bought it if we hadn't fallen in with a chap on the train who was going to visit his brother in Gardenwood. This brother has 5,000 hens, and after our friend had hunted him up and washed off a little of the dust of travel, he came and took us out to visit the ranch.

My, but they were a sight, those hens! Every one as white and shiny as if she had just been laundered, with the reddest combs you ever saw and shelling out an egg every other day the year round. Yes, those hens actually average 175 eggs a year, and their owner drives a six-cylinder car and takes a month's vacation every summer.

Well, this man, Mr. B., I'll call him, is an officer in the local poultry association here in Gardenwood, and nothing would do but we must all go with him that evening to the association meeting. That was where our education began. We had thought all we had to do was to hunt up a ranch with a thousand or two shiny White Leghorns, and if we had money enough buy it and settle down to enjoy life while the hens supported us. When we got into the meeting there was a man, a snappy young fellow, with one of those same White Leghorn hens in his hands, and he was explaining about what he called the marks of a laying hen.

Now, Pa, did you ever hear the beat of that? Back in Missouri all hens are layers, and we let them lay till they die of old age, unless a weasel or a skunk catches one. Here in California, this man was saying, they don't count any hen a layer till she has proved that she can lay ten dozen eggs a year. He was talking about type—that was a new word to me, and I guess it will be to you. He said you could tell a good deal about how many eggs a pullet would lay before she ever laid one. Then he showed us the head of the hen he was holding, how small and pretty it was; and her comb not too big, but big enough, not thick but smooth and silky. He said a hen with a big, coarse head and thick, beefy comb would never be a heavy layer. Then he talked about her abdomen, how it ought to be soft and warm, not hard, as if it were covered with a layer of fat, nor dry and shrunken, as if she had no room to put the eggs in after she had started making them. But the most interesting thing to us was what he said about the keel and pelvic bones—lay bones, we used to call them back in Missouri. Of course, when you stop to think of it, it is plain enough that a hen has got to have room in her body if she is going to make eggs, room to put the food she eats and room to lay the white over the yolk and the shell over the white, but who would have thought of measuring the distance from the breast bone to the lay bones to find out whether she had room or not? That is what this man did, and he said too that unless you handled hens in this way or kept a careful record of the eggs they had laid you couldn't tell much about them.

That took the wind out of our sails a little, I tell you, for we knew we couldn't pick out hens that way, even if we understood all the specifications, which we didn't and couldn't all in a minute. The ranchers there seemed to know all about it, though, and every one had something interesting to tell about what he'd noticed and how he picked out his laying hens. I couldn't help nudging Bob and asking him what sort of a flock we would

pick out, but he was listening so hard he didn't even hear me.

Next day Bob and I got a man with an automobile to take us round to see some of the big ranches, and everywhere they were talking about "culling" and "type." It didn't take us long to see that we had something to learn before we could handle a flock of even a thousand hens. We had to begin at the beginning, if there was a beginning, and pick it up gradually, but where was the place to begin, and how should we ever learn? It sure does make a body feel small and ignorant to go over one of those big ranches, with everything going like clockwork, three, four, five, even seven or eight thousand hens, being fed and watered and kept clean and healthy and laying, all by the direction of one man.

"Maybe we'd better just give it up," I told Bob that night when we were back in our room at the hotel. "You can get a job in the city all right." But Bob gritted his teeth the way he does when he knows there is a fight ahead. "We came to California to raise chickens out in the open under God's blue sky, and we're going to do it, Bessie, girl," was all he had to say, and I knew we would have to learn somehow. We always do when Bob talks that way.

Well, the upshot of it all was that one or the other of us remembered about the snappy little chap who was telling those Gardenwood men what

was what with hens. He could tell us what to do, all right. It wasn't hard to get his address, and when his letter came, his advice was right from the shoulder. "You've got to begin at the beginning," he wrote Bob, "and the beginning is a piece of ground with a big patch of green stuff. When you have that and a brooder house you are ready to buy some baby chicks and go to work." Plain as preaching, wasn't it?

So we began to look for a ranch without chickens instead of one with chickens, as we had planned, and it wasn't long till we ran across five acres with a little house that will do to live in for a while. Five acres doesn't look like much land after the quarter section we farmed in Missouri, but people tell us we can do more with five acres in a community where almost everybody else is raising chickens and where we are sure of plenty of water and a good market and a chance to buy feed and sell our eggs through an established organization than with a hundred out in the desert somewhere. The five acres has nothing on it but the little house and half a dozen neglected looking fruit trees, but that is better than having to take out and replant. Now we can arrange things according to the best light to be had. Bob has already written to Washington and Berkeley for circulars and bulletins on laying out a poultry ranch, and I have been to the public library for poultry books. It is surprising how much information is available if you only look for it. Bob's spirits have risen a hundred per cent since we began to study. Next week I will tell you how we are laying out the place.

Poultry Awards at the Livestock Show

The awards in utility classes at Los Angeles Live Stock Show were:

AMERICAN CLASS

Barred Rocks—J. P. White, 4th and 5th cockerels. Mrs. F. P. Roth, 2nd exhib. pen. Gill & Warrick, 1st and 4th cocks; 2nd and 3rd hens; 1st, 2nd and 3rd cockerels; 1st and 2nd pullets; 1st exhib. pen. Mrs. Ben Davis, Jr., 2nd and 3rd cocks; 1st hen; 3rd, 4th and 5th pullets.

Cockerel Bred Barred Rocks—Gill & Warrick, 1st and 2nd hens; 1st and 2nd pullets; 1st exhib. pen. Mrs. E. P. Roth, 3rd hen.

White Rocks—Andrew P. McDonnell, 1st, 2nd and 3rd cockerels; 1st, 2nd and 3rd pullets. Ira C. Maxwell, 3rd cock; 3rd hen; 5th cockerel; 1st exhib. pen. H. W. Adams, 1st and 2nd cocks; 1st and 2nd hens; 4th pullet. W. R. Brooks, 5th pullet.

Silver Wyandottes—J. L. Harrison, 1st hen; 1st, 2nd, 3rd and 4th pullets.

White Wyandottes—W. O. McCubbin, 3rd cock; 1st and 3rd hens; 4th pullet. Ida M. Gregg, 2nd cockerel; 2nd and 3rd pullets. J. B. Janssen, 2nd cock; 3rd and 4th hens; 1st cockerel; 1st and 5th pullets. A. W. Huskins, 1st cock. J. G. Hurley, 5th hen; 3rd cockerel.

S. C. R. I. Reds—Fred Heying, 5th cockerel; 3rd exhib. pen. Albert Geo. Sly, 5th pullet; 2nd exhib. pen; 1st breeding yard. E. A. Weaver, 5th exhib. pen; 2nd breeding yard; 1st egg-laying hen.

A. G. Lyons, 5th cock; 1st cockerel; 1st, 2nd and 4th pullets; 4th exhib. pen. W. M. Cutler, 4th cock; 4th hen. Brookdale Ranch, 4th cockerel. The Jungle, 3rd hen. Geo. L. Ashton, 1st, 2nd and 3rd cock; 5th hen; 2nd cockerel; 1st exhib. pen. Joseph Fowler, 2nd hen. J. L. Harrison, 1st hen. T. S. Caldwell, 3rd cockerel. Paul E. Kennedy, 3rd pullet.

Rose Comb R. I. Reds—Sands Bros., 1st cock; 1st and 2nd hens; 2nd cockerel; 2nd, 3rd and 4th pullets. Wm. H. Cutler, 1st exhib. pen. A. W. Swedberg, 1st cockerel; 1st pullet.

Light Brahmas—A. V. Ferguson, 1st and 2nd cocks; 1st and 2nd hens; 2nd, 3rd and 4th cockerels; 2nd and 5th pullets; 1st, 2nd, 4th and 5th exhib. pens—youth; 1st exhib. pen—old. Robt. H. Walker, 1st and 5th cockerels; 1st, 3rd and 4th pullets; 3rd exhib. pen—youth.

Black Langshans—Mrs. Ella Schwartz, 1st cockerel; 1st pullet. The Jungle, 2nd cock; 1st, 3rd, 4th and 5th hens. Mrs. J. Baron, 1st cock; 2nd hen; 2nd cockerel; 2nd pullet.

S. C. Dark Brown Leghorns—Eva V. Conklin, 1st and 2nd exhib. pen. John D. Roberts, 1st cockerel; 1st and 2nd pullets.

S. C. Light Brown Leghorns—John D. Roberts, 1st and 2nd pullets. The Jungle, 1st and 2nd hens; 3rd, 4th and 5th pullets; 1st exhib. pen; 1st and 2nd cockerels.

S. C. White Leghorns—The Jungle, 1st cockerel; 1st pullet; 1st exhib. pen. Allee-San-Dro Poultry Yards, 1st hen; 2nd cockerel.

S. C. Buff Leghorns—O. A. Ford, 1st cock; 2nd hen; 2nd and 4th cockerel; 1st and 2nd pullets. Wm. W. Stofft, 1st hen, 1st and 3rd cockerels; 3rd and 4th pullets; 1st exhib. pen. L. C. Harris, 5th cockerel; 5th pullet.

Willis, 3rd cock; 5th hen; 4th cockerel; 5th pullet. J. R. Huddleston, 1st and 2nd cock; 3rd and 4th hen; 1st and 2nd cockerel; 1st and 2nd pullet; 1st exhib. pen.

S. C. Anconas—H. D. Lanfair, 3rd, 4th and 5th hens; 1st and 4th cockerels; 3rd and 4th pullets. T. P. Cutting, 2nd and 3rd cocks; 1st and 2nd hens; 2nd and 5th cockerels; 1st and 2nd pullets; 2nd, 3rd, 4th and 5th exhib. pens; 1st breeding yard. Mrs. G. G. Higgins, 1st cock; 5th pullet; 1st exhib. pen. H. C. White, 3rd cockerel.

Buff Orpingtons—Braemer Ranch, all awards.

S. C. R. I. Whites—Phil Lehrbach, 1st cock; 1st, 2nd and 4th hens; 3rd and 4th cockerels; 1st pullet. S. Rose Dearth, 1st and 2nd cockerels; 4th and 5th pullets. Gavin W. Cralg, 3rd hen; 5th cockerel; 2nd and 3rd pullets.

R. C. R. I. Whites—Phil Lehrbach, all awards.

Bantams

B. B. Red Game Bantams—The Jungle, 3rd cock; 3rd and 5th hen; 5th cockerel. Wm. H. Cutler, 4th cockerel; 1st pullet; 1st exhib. pen. A. W. Huskins, 2nd cock; 1st hen; 2nd cockerel; 2nd pullet. G. Irwin Royce, 4th hen; 3rd cockerel. Mrs. Ben Davis, Jr., 1st cockerel; 2nd hen; 1st cockerel; 3rd pullet.

Silver Duckwing Bantams—A. W. Huskins, 1st cock; 2nd hen; 2nd and 3rd cockerels; 1st, 2nd and 4th pullets. Mrs. Ben Davis, Jr., 2nd cock; 1st hen; 1st cockerel; 3rd pullet.

Red Pyle Bantams—Mrs. Ben Davis, Jr., all awards.

Old English Game Bantams—Miss Helen C. Henry, all awards.

Golden Sebright Bantams—James Roff, 1st cock; 1st exhib. pen. Mrs. Alice F. McAdams, 1st and 2nd pullets.

Silver Sebright Bantams—J. J. Dean, 1st and 2nd cocks; 1st and 2nd hens; 1st and 2nd cockerels; 1st and 4th pullets; 1st and 2nd exhib. pens. Miss Helen C. Henry, 3rd cockerel; 2nd, 3rd and 5th pullets.

Black Rose Comb Bantams—G. Irwin Royce, 1st cock; 1st hen. Miss Helen C. Henry, 2nd cock; 2nd and 3rd hen; 1st pullet.

Buff Cochlin Bantams—Mrs. W. P. Williams, 3rd and 4th hens. O. A. Ford, 1st cock; 3rd cockerel; 1st and 2nd pullet. Gregg & Struthers, 2nd and 3rd cocks; 1st exhib. pen. H. D. and Ray Keplinger, 4th cock; 2nd hen; 4th cockerel. A. W. Huskins, 5th hen; 2nd and 5th cockerels; 3rd and 4th pullets. S. F. Kingston, 5th cock. The Jungle, 1st cockerel; 5th pullet. Mrs. Ben Davis, Jr., 1st hen.

Partridge Cochlin Bantams—G. Irwin Royce, all awards.

White Cochlin Bantams—J. Will Blackman, 1st cock; 1st and 2nd hens; 1st and 3rd cockerels; 1st pullet; 1st exhib. pen. Geo. J. McDowell, 2nd exhib. pen. Mrs. Ben Davis, Jr., 2nd cock; 3rd hen; 2nd cockerel; 2nd pullet.

Black Cochlin Bantams—J. J. Dean, 1st cockerel; 4th pullet. The Jungle, 5th hen. Thott & Andrews, 5th cock; 2nd hen; 2nd cockerel; 3rd pullet. J. Will Blackman, 1st, 2nd, 3rd and 4th cocks; 1st and 4th hens; 3rd cockerels; 1st pullet; 1st exhib. pen. Mrs. Ben Davis, Jr., 4th cockerel; 2nd pullet. Miss Helen C. Henry, 3rd hen.

Black Tall Japanese Bantams—Mrs. Ben Davis, Jr., 1st cock; 1st hen.

Millie Fleur Bantams—Mrs. Ben Davis, Jr., all awards.

Silkie Bantams—The Jungle, all awards.

Barred Rock Bantams—Mrs. Ben Davis, Jr., all awards.

Let's go

The sure way to put pep into your job on a rainy day is to get into a

FISH BRAND Reflex Slicker

There is a FISH BRAND garment for every kind of wet work or sport

DEALERS EVERYWHERE

A.J. TOWER CO.
ESTABLISHED 1836
BOSTON MASS.

TOWERS FISH BRAND

2024

FOR GREATER EGG PRODUCTION

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Coulson's Co.
PETALUMA, CAL.

Bellows Trap Nested White Leghorns

Hatching eggs, chicks and stock from pedigreed birds. Now booking orders for 1921. If placed now we can fill your order for chicks or eggs in any quantity up to 2000. For information and prices write

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Partridge Rock Bantams—G. Irwin Royce, all awards.
 Partridge Wyandotte Bantams—G. Irwin Royce, all awards.
 White S. C. Leghorn Bantams—G. Irwin Royce, all awards.
 R. C. White Leghorn Bantams—G. Irwin Royce, all awards.
 Black Minorca Bantams—G. Irwin Royce, all awards.
 Bare Neck Bantams—Phil Lehrbach, all awards.
 Ducks, Turkeys, Guinea
 Pekin Ducks—Braemer Ranch, all awards.
 Bronze Turkeys—J. Will Blackman, 1st, 2nd and 3rd old tom; 1st, 2nd and 3rd old hen; 1st, 2nd and 3rd yearling tom; 1st, 2nd and 3rd yearling hen. Mrs. C. W. Tilden, 4th old tom.
 White Holland Turkeys—Geo. H. Parks, Riverside, 1st old tom; 1st old hen. Mrs. B. Hocking, 2nd old tom; 2nd old hen.
 Bourbon Red Turkeys—Mrs. B. Hocking, all awards.
 White African Guinea—Mrs. B. Hocking, all awards.

AMERICAN EGG LAYING CONTEST

Leavenworth, Kansas. Report for September:

Ten Highest Pens for 11 Months

S. C. W. Leghorn, Pennsylvania, 1,159 eggs; R. C. R. I. Whites, Kentucky, 1,144; S. C. W. Leghorn, Texas, 1,123; S. C. W. Leghorn, Iowa, 1,097; S. C. R. I. Reds, New York, 1,072; S. C. W. Leghorn, Kansas, 1,062; White Wyandottes, Pennsylvania, 1,056; S. C. W. Leghorns, Washington, 1,042; S. C. W. Leghorns, England, 1,041; S. C. W. Leghorns, Michigan, 1,007.

Ten Highest Pens for September

S. C. Reds, New York, 121 eggs; R. C. R. I. Whites, Kentucky, 118; White Wyandottes, Illinois, 106; S. C. R. I. Reds, Missouri, 97; S. C. W. Leghorns, Texas, 96; S. C. W. Leghorns, Illinois, 95; S. C. R. I. Reds, Illinois, 94; White Wyandottes, Canada, 88; White Wyandottes, Pennsylvania, 87; S. C. W. Leghorns, England, 86.

Detailed production by breeds follows:

	Leader to Date	Best Pen for Month	Avg. Pullet 10 Months	Best Pen to Date
White Wyandottes	242	106	182.6	1056
Partridge Wyandottes	193	62	164.6	849
S. C. R. I. Reds	236	121	196.1	1072
White Orpingtons	216	56	167.9	935
Barred Plymouth Rocks	220	65	170.9	867
White Plymouth Rocks	187	41	160	800
R. C. R. I. Whites	260	118	229	1144
Brown Leghorns	189	30	135.4	702
S. C. Anconas	185	34	116.9	624
White Leghorns	254	96	186.7	1159

Poultry Queries

Conducted by J. A. Koethen

Poor Appetites

My chickens are recovering from chickenpox complicated in the end with roup. Their quarters are dry, but I fear they are slightly overcrowded. We feed mash of fish meal and bran in the morning, rolled barley at noon, milo at night, with beet tops, chard and kale for greens, but the hens do not seem to care about eating. What shall I do for them?—Subscriber, Westminster.

Make sure first of all that your hens are not crowded. If you have not sufficient house room, cull till there are no more hens than can be housed comfortably. It is better to keep 25 hens and make them comfortable than 50 in crowded quarters. Nothing is more productive of roup than overcrowding. When you have them thinned out so that each hen has three square feet of floor space you are ready to change their ration. Every laying flock should have a laying mash before it all the time. You can buy this ready prepared or mix it yourself by one of the formulas given from time to time in this column or sent out by the state experiment station at Berkeley. Fish meal and bran alone is not sufficient, and it would be better not to use fish meal exclusively for animal protein. Half fish and half meat meal is better, or you might alternate, using one for a short time and then the other. Feed your greens at noon, or twice a day if convenient, and give a hard grain mixture an hour before sunset. These are the three items in the ration of every properly fed hen: dry mash all day; green feed at least once during the day; grain mixture at night. To stimulate the appetite of your hens it would be well to add to this for a time a moist mash made by mixing

the dry mash with sour milk. Semi-solid buttermilk is used by many poultrymen for this purpose. Feed this moist mash early in the afternoon, or, if you prefer, about ten a. m., just what the birds will clean up in ten or 15 minutes. This is a great appetizer and is used by many experts during the heavy laying season. The grain mixture should consist of two grains, one of which should be wheat. If you want your hens to do their best.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

During the past week only one change took place in the relative position of the leading pens. The Enterprise Ranch of Chino nosed Mr. Neef of Santa Cruz out of fourth place with a lead of one point. Production during the last few days came down to 32 per cent, as many of the high individuals are now dropping out.

Standing of high pens to date: Bellows Bros., 2,019; D. B. Walls, 1,952; S. L. Gibson, 1,942; Enterprise Ranch, 1,918; W. J. Neef, 1,917; R. C. Gibson, 1,903; B. F. Rose, 1,877; G. G. Barker, 1,868; Warren Wood, 1,829.

MOTOR USEFUL BETWEEN ROWS

By N. C. Wilson

The motor cultivator used to be called the "missing link" in power farming, but it has arrived very definitely on California farms.

Crops planted in rows cover over 40 per cent of the total crop area of the United States. In 1919 these rowed crops represented over 50 per cent of the total crop value. The importance of rowed crops in American agriculture, shown by these figures, is convincing in itself that the future of

the motor cultivator in this country is great. Possibilities for the general use of this machine are increasing rapidly.

What does it offer from the farmer's standpoint? First, there is a great deal of time saved in cultivating rowed crops. It is possible for one man with a two row machine to cultivate from ten to 25 acres in ten hours, depending upon the condition of the crop. Speed can be increased according to the height of the plant. When the plants are small the rate of travel is necessarily slow. The steady motion of the motor cultivator and the resulting good work is a great advantage. Weather does not affect the implement, so that the farmer can do fast work when it is most necessary.

Other uses for the motor cultivator besides that of cultivating rowed crops make it all the more indispensable. It will pull soil preparation machines such as the disk and the harrow; drill grain; plant rowed crops; mow hay; cut grain; pull the hay rake, tedder and loader; operate belt driven machines that do not require more than 12 horsepower. Even this extensive list does not cover the great field of possibilities for general work on the farm which this prime mover is fast realizing.

POSSIBLY HE HAD

As I was passing a yard where some children were playing I saw a little fellow fall from a high porch rail. He did not move for a minute so I ran to his assistance, but when I reached him he jumped up on his feet apparently unhurt.

"Why, my dear little boy," I said, "I felt sure you must be hurt. I am sure I should have been had I had such a bad fall."

"Oh, but you see," he said in explanation. "I've probably had lots more practice in falling than you."—Exchange.



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You probably know that the best way to plant trees is to blast the holes. But you must not stop there if you expect 100 per cent results.

After the third or fourth year the soil around your young trees should be broken up below the level reached by cultivation. You can do this by blasting four holes around each tree (at a distance of from 6 to 8 feet from the trunk) with

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And now is the time to do this work for in the fall the ground is hard and dry—in prime condition for blasting. After blasting, fill the holes with organic matter and see how the trees will grow.

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And you can learn how by reading "Progressive Cultivation".

This book will be sent to you free of charge if you will sign the attached coupon and mail it to the Hercules Powder Co..



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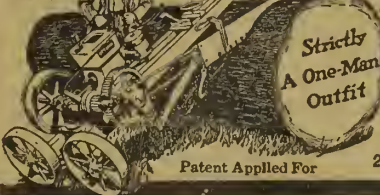
Direct Gear Drives Saw—no chains to tighten; no keys; no set screws. 4-cycle Frost Proof Engine with counter-balanced crank shaft. Pulls over 4 H-P. Oscillating Magneto Ignition and Automatic Governor with Speed Regulator. Special clutch, lever controlled, enables you to stop saw without stopping engine. Simply built; nothing to get out of fix. Uses little fuel. Works well in any kind of weather and on any kind of ground.

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Raise Fall Chicks. They are profitable. Write for circular. See why they pay. Chicks every week. R. I. Red, Barred Rock, White Leghorn. Also booking for spring delivery. Order now and get a desirable date. Safe arrival guaranteed. **Stubbe Poultry Ranch and Hatchery**, P. O. Box 67, Palo Alto.

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Pure Bred White Plymouth Rock cockerels, U. R. Fishel strain, splendid birds. Prices \$5 to \$15. **Mrs. B. M. Jesch, Fallon, Nevada.**

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Baby Chicks from selected egg type S. C. White Leghorn hens. **Tupman Poultry Farm**, Box 7-C, Ceres, California.

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For Sale—55 acres—45 acres in alfalfa, 10 acres in 3 year old prunes, 5 miles north of Chico, 2 pumping plants, small barn, and small house and also 60 tons of hay. Water supply unlimited. This place can be bought for \$5000 cash payment and \$2000 a year with 7% interest. Address owner—**A. C. Musselman, 937 Orient St., Chico, California.**

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Harness.
All Farm Machinery.
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Either one, land, hog, cattle in exchange for 1 Holt Caterpillar and 3 plows, cost \$6,600. Valued at \$5,000. **P. Miller, Gustine, California.**

For Sale or Exchange Lot on 11th Street, Oakland, California. For particulars address: **Box 376, San Jose, California.**

POULTRY AT THE FAIR
By Jean A. Koethen

While the Riverside show was smaller than the Los Angeles Live-stock Show, it was also more representative. The birds shown represented not only Los Angeles and Orange Counties and the large poultry district about Riverside, embracing San Bernardino, Redlands, Ontario and the

SEEDS AND PLANTS

Strawberries—Carolina and Superb, two of the leading everbearing varieties, and heavy producers, particularly the Carolina. Berries large, firm and of good flavor. \$3.00 per 100 and \$25.00 per 1000. Also, Brandywine and Klondyke, \$2.50 and \$20.00. All stock offered strictly first-class, prices F. O. B. **HARRIS SEED COMPANY**, San Diego.

Strawberries—1,000,000 plants leading varieties; 200,000 Cuthbert raspberry; 100,000 Black Cap Tips; 100,000 Loganberry tips. Order now low prices. Also 100,000 choice peach seedlings—will graft in plums or prunes on contract for fall delivery 1921. **Lafayette Nursery Company**, Lafayette, Oregon.

Strawberry Plants—Kinds: Federal, an everbearer, Brandywine, Marshall or Golden, Klondyke, Banner, attractive in big lots. Correspondence solicited. Address: **H. D. Radloff**, Springville, California.

For Sale—Strong Mountain Grown Brandywine, Carolina and Klondyke strawberry plants at two dollars per hundred, postpaid. **B. BRYAN**, Camp Baldy, California.

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Wanted—Tractor and implements by private party for 600 acres of diversified farming. Will pay all cash. Holt 45 or 75 tractor preferred. Describe fully and state price. **Walter W. Atkinson**, 845 South San Pedro Street, Los Angeles, California.

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towns of Riverside County, but there were strings of birds from Oakland, San Francisco, San Diego and Santa Barbara.

As at former show, bantams were the largest class, some 200 birds being shown. Such an exhibition of bantams is exceptional, but it loses part of its significance when we consider that nine-tenths of the birds were the property of half a dozen exhibitors. It is evident, however, that the number of breeders of these beautiful pets is increasing and that there is a very general interest in their breeding and care.

Dark Cornish, Rhode Island Reds, Anconas, White Wyandottes and Barred Rocks were the leading breeds after bantams, and there was a good sprinkling of Rhode Island Whites, Buff and White Rocks, Buff Orpingtons, Black Langshans, Black Minorcas and Light Brahmas. Brown Leghorns, which are comparatively rare in California shows, were a good class and were welcomed by many who are sorry to see this beautiful and useful breed falling behind in the race for popularity. Sicilian Buttercups, Campines and Houdans were small classes and the few breeders of Andalusians had their birds out in force. Next to bantams, probably more attention was attracted by "White Alley," where the White Wyandottes, White Rocks and Rhode Island Whites preened themselves. Everybody loves a white bird, and the fluffy pullets and hens of these breeds were, points aside, the belles of the ball. There were some fine turkeys from the San Diego district and an interesting array of ducks, geese and guineas from Compton and other towns. Several unusual varieties of Pit Games were shown and Partridge Orpingtons were a beautiful class, though few in number.

Veterinary

Sick Cow

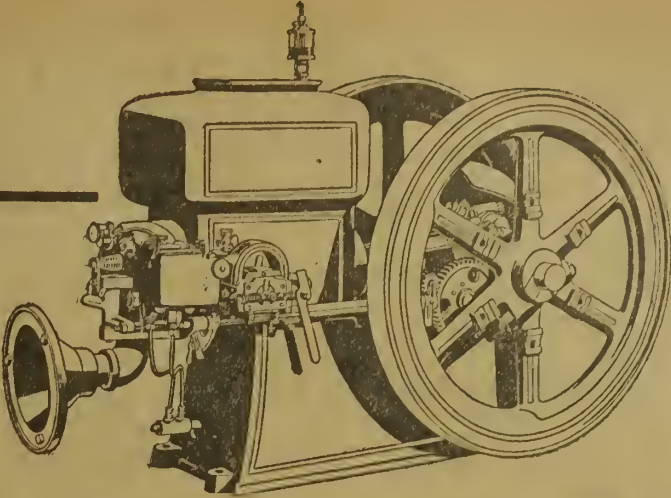
A few weeks ago my cow began losing flesh and ceased almost entirely to give milk. Prior to that she had been in good condition. She now eats practically nothing, is very weak and moans and bellows frequently. Think trouble due to drinking from hog wallow which has since been fenced off. Was tb tested in April and did not react. Treated her at one time for scours, which made her slightly better.—Subscriber, Bakersfield.

The trouble you mention could easily be caused by indigestion and going off feed. It sometimes happens that a cow can be thrown off feed to such an extent that she will fail to give any milk at all. Probably the water from the hog wallow was responsible. I would suggest that you give her a drench of a quart of raw linseed oil. This might be repeated the second day if felt desirable. The cow should then receive only good, clean water and good feed. Give her soft bran mash with alfalfa hay and good ensilage in rather small quantities to start on. The feed should gradually be increased with a little rolled barley and some dried beet pulp as the condition is improved.—G. E. G.

Rheumatism

Cow due to freshen with her second calf in three weeks is so stiff in her front quarters she can hardly walk. She eats well. I have been feeding her alfalfa and barley hay.—Subscriber.

Probably rheumatism. I would suggest that you keep her in a good dry place and provide comfortable stall or shed at night where she will be protected from cold winds. One of the best treatments I can suggest is to give a laxative, the best one probably being a quart of raw linseed oil, given as a drench. Drugs may be given, but I do not feel it desirable to recommend them except under order of a veterinarian who would administer them, because with these drugs there is danger of depressing the heart. I believe the above treatment will get results and is much safer. You should then continue to feed rather laxative feed, such as bran mash containing some ground or rolled barley. Beet pulp is also good. Good ensilage would also be desirable. The above feeds could be given with alfalfa hay. I do not believe that barley hay is to be recommended where the other feeds are available.—G. E. G.



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Whether famously pedigreed or common
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Tho' only a dog—a true friend to the last.

When sad or discouraged or burdened
with care,
I look in your eyes—there's faith for me
there,
And tho' you can't talk, you bring
courage to me,
For to you I am all that I'm longing to be.

Only a dog—yet where can you find
A friend who will "stick" when the world
is unkind,
Who will love you and guard you and
give his last breath
To shield you if need be even to death.

Who will ask in return a kind word or a
smile,
A caress of the hand just once in a while,
If there's aught to forgive it's all in the
past,
And tho' only a dog, true friend to the
last.
—Mrs. A. Rice.

ALL ABOARD FOR THE FURNI-
TURE ISLANDS

(Continued from last week.)

The kitten pined her crimson skirt up around her waist and went over to the fire. She bent down with a holder to get the rack, and out of the ashes rolled a big red coal. Before the twins knew what was happening, Mewlinda was holding up her white petticoat and weeping bitterly. There was a scorched hole in the embroidery.

"Oh, my goodness gracious!" screamed Mrs. Cat. "Your best white petticoat! Careless thing!"

She was so angry that the twins backed over to the door.

"You shan't have another drop to drink, Mewlinda, until your best petticoat's mended with silk, so get busy right away."

Mewlinda, still sobbing, got a little spool of white silk and a needle from an apple pincushion on the bureau, and sat down before the fire.

"Why does everything happen at once?" fussed Mrs. Cat. "Here it is two o'clock and I promised to be at the Mousers' Club at two."

She pinned on a hat with a long green feather and nodded her head at the twins.

"Goodbye, children. And, Mewlinda, don't you stir from the house until that skirt is mended."

Mrs. Cat looked so fierce that Janie and Jennie were very glad to see her go. They went over to the kitten, who was weeping harder than ever.

"Oh, dear! How can mother be so cruel! She knew what I wanted to do this afternoon and it will be too late after this is mended."

She stuck the needle into the mouse skin rug on which she was sitting and cried until her small paws and her face were wringing wet.

The twins couldn't understand why she was so unhappy, but finally Mewlinda looked up and began to tell them.

"You see, Puss in Boots and I have known each other since we were very small. He is living a long way from here now and this very afternoon I was to meet him at the landing place. He has several things to show me, especially a new picture of himself done by the court artist. Oh, dear! And I shall miss him."

"Why?" asked Jennie, puzzled. "It won't take long to mend that hole."

Mewlinda opened her eyes wide.

"Not long! It is plain that you do not know much about sewing. First I'd have to cut all my nails so as not to tear the cloth. Then it takes ever so long to thread the needle, and so much longer to sew that it will be dark before I have finished."

The twins could not help laughing. Jennie picked up the needle and in ten minutes she had cut off the scorched edges and put on a little patch so neat that Mewlinda purred loudly and kissed them both.

"You dear things! Now I must hurry."

The little girls almost expected to see her powder her nose, but she only brushed down her fur, unpinned her dress and put on her white gloves. Then she got out the dearest hood of white lace with rosy bows, and when

it was tied under her chin she held the door open for the twins.

"Will you wait her for me?" asked Mewlinda.

The twins looked over toward Bureau Island. The sun was shining on it and they fancied that they could see a sparkle which might be from those silvery pinnacles Auntie Bee had shown at the bottom of the bureau. As they gazed over the lake they saw Mr. Bote swimming toward the landing place just across from where he had left them.

"Goodbye, Mewlinda," said Jennie, "and thank you for being so kind to us. I think we'll go over to Bureau Island with Mr. Bote."

But the kitten was not even listening. She was peeping around the willows toward the place where Puss in Boots was to land. There was a flash of red on the water and Mewlinda cried, "There he is!" She ran down the path without even saying goodbye and though the twins would have loved to see Puss in Boots, they knew it would not be polite to follow. So hand in hand they turned the other way and ran down to the edge of the island where Mr. Bote was waiting.

He seemed to be expecting them and the little seats were already unfolded.

"Had dinner?" he asked.

"We had — fish and — milk," answered Janie uncertainly for she didn't know whether Mr. Bote would think that was dinner or not.

He glided into the water and the twins tucked their feet up on the rods beneath their seats.

"O, Mrs. Cat always does live high," grumbled Mr. Bote. "It's all I can do to buy fish for the family with rent so high and everything—to say nothing of milk."

The twins wondered what it could be that he rented but he looked so very gloomy that they were afraid to ask any questions. Jennie had just whispered to her sister, "Do you suppose his wife got home from the convention?" when there was a splashing behind them and there were the three sea lion children.

Each one wore a little round cap between its ears, held on by an elastic band and each one wore a shirred ribbon collar. Ruby's cap and collar were green, Angelina's were purple and Rex's were yellow. They looked so funny that Janie giggled and the big sea lion turned his head.

"Great Jumping Jupiter!" said he, looking almost ready to cry. "If here aren't those children again. And all in their best clothes; their mother'll blame me of course. Rex, Ruby, Angelina—go home! Take off all your clothes and finish hanging up the washing as I told you to."

This sounded so very ridiculous to the twins that they were afraid they would have to laugh aloud. With their hands to their mouths they turned and watched the little sea lions. It evidently took their mother to make them mind for though Ruby and Angelina slowed up a little and looked somewhat ashamed they did not start for home; as for Rex, he immediately began to splash water over the twins.

Their father sighed and turned back toward Bureau Island.

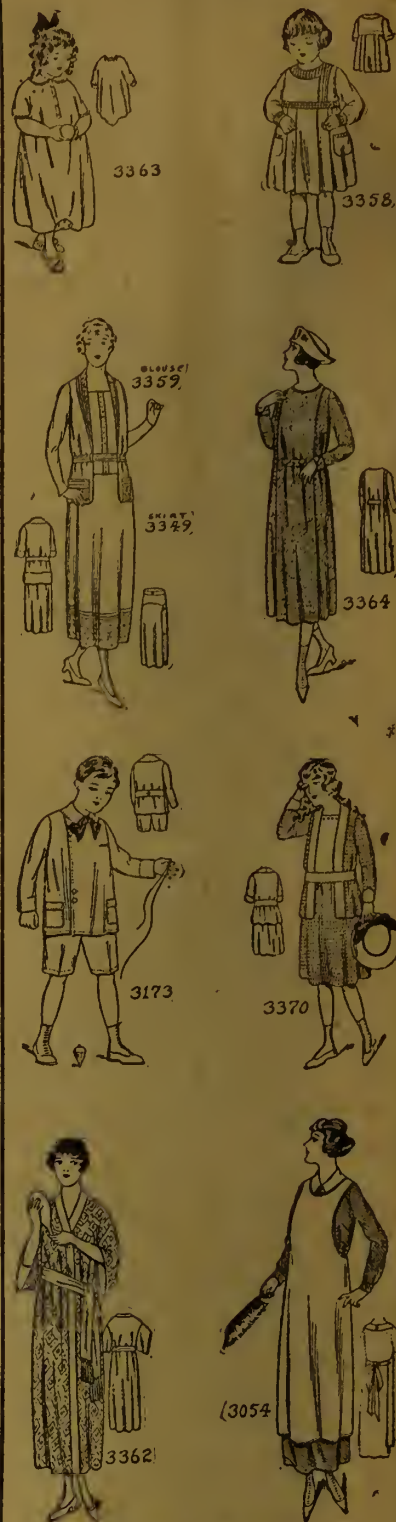
"Can't do a thing with 'em—mother's never coming home I guess—better hire a couple of policemen to take care of 'em."

Rex had quit splashing and was back fighting with his sisters about something. The twins could hear them all squealing, but Mr. Bote was just drawing up to Bureau Island and they looked eagerly about as they jumped down.

The twins had not gone far when they came to a beautiful wood. They were very glad to see it, for even at the edge there were all kinds of fruit trees. Janie picked a great many pears, but Jennie thought nothing was better than apples, so she sat down under an apple tree and began to eat.

"This is better than fish, isn't it?" asked Janie, coming over to the apple tree.

"I never was so hungry in my life," said Jennie, and so the twins sat there for a great many minutes, nibbling away and laughing whenever they thought of Mr. Bote.

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However, when Jennie reached behind her to get an apple that had rolled away, she felt something soft and furry. She gave such a start that both she and Janie fell over backward, but when they looked around there was nothing to be seen except the red cheeked fruit. It had a hole gnawed in one side.

What could have done it? They knew the answer in just about half a minute, for hopping around the tree came a rabbit. She had on a black and white checked dress and a little white cap, and looked very motherly. "How do you do, ladies?" she bowed. "I wish I were as tall as you, for then I could pick some apples for my babies."

The twins felt flattered to be called ladies, and both of them arose and began to pick the very best apples hanging low on the tree. They soon had all they could carry, and Mrs. Hare's little nose was quivering with joy.

"Come with me," she called, hopping around the tree. "I'll show you my nest."

It was the coziest kind of a nest built of grass and lined with fur, and in it lay five tiny hares. They wriggled their noses at the apples and did not even look at the twins.

"Oh, you darlings!" cried Janie, patting the nearest one, which was already nibbling away. "See, Janie—there are black spots on the tips of their ears, and what soft brown coats!"

"Their coats will be much prettier next winter," said Mrs. Hare proudly. "When the cold weather comes we all change from brown to white. You ladies wouldn't be able to tell us from the snow."

"I wish you could go down the hill with us, Mrs. Hare," said Janie. "Mr. Bote said there was a wonderful palace down there. Have you seen it?"

Now when Janie asked this question Mrs. Hare was sitting there in her little checked dress, busily eating an apple, and all the furry babies were sitting up and eating, too. Instead of answering, Mrs. Hare made a funny sound, and in a second all the babies were out of the nest and the whole Hare family had disappeared in the underbrush.

"For goodness sake!" exclaimed the twins together, looking around to be sure they weren't mistaken.

"Now what happened?" asked Janie. "I didn't know the little bunnies could even walk."

For a long time the twins ran about between the trees, searching for Mrs. Hare and her family, but there wasn't a trace of them. The little girls found that the wood was on a hill, for when they came to the edge of it, what should they see far down at the bottom of the slope but the glittering palace.

"We won't wait for the bunnies," called Jennie excitedly. "They must have gotten angry about something. Isn't it a perfectly beautiful palace? It looks just like the one in our Cinderella book—but of course it couldn't be."

Janie did not answer. She was not looking at the palace, but at something which had come out from between the fruit trees—a red fawn who stood gazing at the twins with great brown eyes. Janie reached out her hand and the fawn, instead of running away, came up and put his soft nose into her palm.

Jennie, too, forgot all about the palace. The three seated themselves in a little patch of white violets which smelled like weddings and everything nice, and the fawn began to talk softly.

He said he knew Mrs. Hare very well, and there were some fine families of squirrels in the trees too, but they were saucy. He never passed through the wood but one of them let an apple or a peach fall bing! on his head.

"My father is there watching us," said the fawn, nodding his head toward the thicket. "He doesn't like little girls as well as I do."

The twins were rather frightened when they saw the hart steadily gazing at them. His eyes were as lovely as the fawn's, but his branching horns somehow looked very fierce.

(Continued next week.)

Don't borrow trouble with the intention of returning it with interest.

THE HALLOWE'EN PARTY



HALLOWE'EN frolic is always popular with young folks, whose festival it really is. Nor does it require any great expenditure of labor or money to arrange for such a party; for the decorations may be had for the taking from nature's own conservatories, and the refreshments, if custom and tradition are regarded, should comprise only a few simple viands, nuts, apples, popcorn, ginger cakes and fresh sweet cider.

Fill the rooms with decorations of autumn foliage or berries. In many sections our "holly" berries are already brilliantly colored as are the cascara or "wild coffee." Then some of the grape vines take on wonderful autumn tints. Corn stalks, feterita, any of the sorghums make beautiful and effective wall coverings, or large rooms can be partitioned off by screens of these stalks. A fortune teller's booth, for instance, might be built of them in a corner.

Jack o' lanterns, of course, are the characteristic decoration for Halloween, real ones made from pumpkins of various sizes with candles inside. Then it is as well to have some of orange or green paper over brighter lights to give sufficient illumination. Carrots and turnips may be easily turned into fascinating candlesticks.

The entertainment feature, too, is easily arranged, for certain sports from time out of mind have been inseparably connected with the festival. Modern games would be entirely out of keeping with the occasion.

Such games as ducking for apples, trying fortunes with apple parings and apple seeds, testing fate by means of "the three higgles," popping chestnuts, and others equally familiar to everyone should be played. If there is someone at hand who can act the part cleverly, a fortune teller will contribute immensely to the evening's fun.

As nuts always have played an important part in Halloween festivities, a very simple and amusing game to play—amusing for old and young alike—is a nut hunt. Have four kinds of nuts—walnuts, almonds, pecans and peanuts, for instance. Assign to each sort a different value according as they are plentiful or scarce in your supply. The walnuts might rank ten, almonds 15, pecans 20 and peanuts five. Before you hide the nuts, carefully crack several of the walnuts, removing meats and taking care not to break the halves of the shells. Insert various little emblems in place of the meats—a ring for marriage, a thimble for no marriage, a bean for happiness, a coin for wealth and a key for success. Now carefully glue the halves of the walnuts together and hide them with the rest of the nuts. A prize of some sort should be offered for the one who scores the highest—not in single nuts, but in total counts on all the nuts found.

When sending out invitations a jolly plan is to ask the invited guests to wear any disguise they choose, besides a huge, enveloping sheet and a pillowcase for the head covering. As they arrive station at the door to receive the guests a tall boy and girl, each dressed as queerly as possible. They may hand each guest a card, on which is printed a number. Number the cards just as the guests arrive, in order.

A very dark room, with a huge "pumpkin head" ghost in the center to add to the uncanny effect of the whole, is a great source of amusement. The guests are supposed to sit in absolute silence that their identity may remain a secret until the arrival of the last guest. Then very suddenly the lights are popped on and immediately the ushers commence their task of trying to discover the identity of each separate guest. If they succeed the unfortunate's number is jotted down on a tablet and the unlucky ones pay their just forfeit.

For refreshments serve nuts and good eating apples, ginger cakes, popcorn balls and sweet cider. Serve these in the simplest manner possible, dispensing on this occasion with all modern furbelows. The refreshments might be placed upon a table and the guests allowed to help themselves.

Or, if one wishes to serve a supper to a small party, here is a suggestion: Sandwiches of brown bread and apple and nut salad in apple cases; coffee; sweet cider punch and chocolate gin-

ger cookies comprise the list.

More elaborate refreshments could be served of stewed oysters, bread and butter sandwiches, coffee, ice cream, cakes and candies, but the time honored doughnuts and cider and pumpkin pies are more popular than anything else.

Whether or not all of the traditions are kept alive, it is well to make every innocent festival the means of drawing the boys and girls closer to the life of the home and convincing them that they need not go somewhere else for pure and unadulterated fun.



Raining Outside, but Inside—

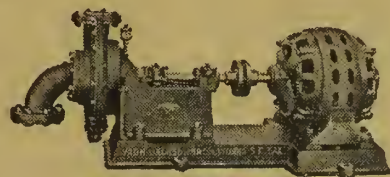
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Fresh extras, cases included: Produce Exchange closing price, 75 per dozen; case count Produce Exchange closing price 73 per dozen; pullets, Produce Exchange closing price 64 per dozen; pcwce pullets, 51.

Dairy Exchange prices last week on extras:

Oct. ... 6 7 8 9 11 12

'2076 78 78 78 78 78

POULTRY

Price to consumers: Hens, lt., 30; heavy, 32; colored, 35; broilers, 38@42; roasters, 34; old roasters, 14; fryers, 34; ducks, old, 23; ducklings, Pekin, 3 1/2 up, 25; others 23; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47.

Belgian hares, live, 16@21; old, 9.

LIVESTOCK

Los Angeles, Oct. 26.—Welghed and delivered off cars without food or water:

Hogs (hard-grain): 125 to 175 lbs., 15.50; 175 to 225 lbs., 16.00.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, October 26, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market steady; Stocktons: Burbanks, best, 2.25@2.75 sacked; poorer low as 2.00. Sweet mostly 85@1.10 per lug.

Onions: Supplies heavy, market dull. Stocktons: Whites 2.00@2.25; Browns

mostly 1.35@1.50 per 100 lbs. sacked; Yel-
lows: 1.25@1.35 cwt.

Garlic, lb., 12@14.

VEGETABLES

These are the actual prices obtained October 26 by the Los Angeles whole-
salers in their sales to retailers, peddlers,
hotels, restaurants, cafeterias, etc. Terms:
Cash on the walk.

Beans: Ky. Wonder, 8@10.

Beets: Doz., 50@60; sk., 1.75@2.00.

Cabbage: Supplies moderate, market
steady, movement slow, wide range in
quality. Best mostly 2@2 1/2 per lb.; per
field crate, best, 1.75@2.00.

Carrots: Doz., 30@40; sack, 1.20@1.50.

Cauliflower: Supply liberal, field cr.,
1.25@1.50 according to quality.

Celery: Doz. bunches, 85@1.00; cr.,
8.00@3.50.

Cucumbers: Market steady; local, best,
lug, 1.00@1.25.

Egg Plant: Lb., 3@5.

Lettuce: Field crs., 1.50@1.75; few 2.00.

Peas: local, 12@15.

Peppers: Bells and Chilis, lb., 3@5.

Squash: Local summer, lugs, 75@1.10.

Hubbard, lb., 1 1/2@2.

Tomatoes: Local lugs, best, mostly 35
@50.

Turnips: Per doz., 35@50; sk., 2.25
@2.50.

DECIDUOUS FRUITS

These are the actual prices obtained
October 26 by the Los Angeles whole-
salers in sales to retailers, peddlers,
hotels, restaurants, cafeterias, etc.
Terms: Cash on walk.

Apples: Supplies heavy, market steady.

Bushel boxes: Bellefleurs, 4 tier, 1.50@
1.75; 4 1/2 tier, 1.35@1.45; Jonathans, fancy,
2.75@3.25; Delicious, fancy, 3.25@3.75.

Idaho & Utah loose Jonathans, 4@6 per
lb.

Bananas: lb., 10@11 1/4.

Cranberries: Bbl., 14.50@14.75.

Figs: Box, 1.25@1.50; few high as 2.00.

Grapes: Supplies liberal, market strong.

Muscats, 8@10; Tokays, 9@11; Corni-
chons, 8@9.

Peaches: Local, mostly 2.25@2.75 lug;
few high as 3.00.

Pears: Bartletts, best, lb., local, mostly
7@8; Northern mostly, 9@11.

CITRUS FRUITS

Grapefruit: California, per box, market
pack, 2.75@3.00; special packed brands,
3.50@4.00. New crop, best, 4.00@4.50.

Lemons: Market dull, wide range in
prices. Local stock: Packed, bx., 2.75

@3.25; loose, 1.00@1.50; lug, mostly 50
@60.

Oranges: Supplies liberal, market
firm. Valencias: Packed special brands,
126's, 150's and 176's, 7.25@7.75. Local
packed, second grade, mostly 4.00@5.00.

HONEY

U. S. bureau of markets: Demand mod-
erate, movement slow, market steady, lit-
tle change in prices. Carloads f. o. b.
usual terms: White Orange and White
Sage, 18@20; Light Sage, 15@18; Light
Amber Alfalfa, 14@17; Hawaiian Light
Amber, 12; Beeswax, 40@42.

NUTS

California Walnut Growers' Association
announces prices on 1920 walnuts: No. 1,
soft shells, 2 1/2; No. 2, 16 1/2; Budder, 25 1/2;
standard budded, 22 1/2 per lb.

GRAIN AND FEEDS

Grain Exch. prices bid October 26:

Barley: 2.17 1/2.

Milo: Carlots, 2.70@2.85.

Corn: Bk., Yellow, No. 2, 2.22 1/2.

Bran: Kansas, 41.25.

Wheat: Mlxd, Idaho, 48.45.

HAY

Alfalfa Growers of California, Oct. 26:

No. 1 Dairy Alfalfa27.00

Standard Dairy25.00

Stock Hay22.00

Fancy dairy37.00

No. 1 dairy alfalfa29.00

Standard Dairy25.00

Stock Alfalfa22.00

Quotations by Nichols-Loomis Com-
pany. Following are prices to growers
f. o. b. Los Angeles in carload lots; han-
dling and commission must be added to
obtain retail prices on new hay:

Tame Oats20.00@25.00

Barley16.00@22.00

Alfalfa25.00@27.00

Barley straw8.00@10.00

San Francisco Markets

San Francisco, Oct. 26, 1920.

Quotations made daily by the San
Francisco Wholesale Dairy Produce Ex-
change. These are the prices paid by re-
tail grocers to wholesalers. The prices
paid by the wholesalers to producers are
eight per cent less.

BUTTER

Dairy Exchange quotations:

Extras57 1/2

Dairy Exchange prices extras this week

and year ago:

October 19 20 21 22 23 25

'2060 59 59 59 1/2 — 57 1/2

'19— 66 64 — 67

Rcts. wk. ending Oct. 25, 1,453 cents.

CHEESE

Dairy Exchange quotations:

Jack, full cream.....22@26

Jack, half skimmed17@20

Orc. Y. A.35

Cal. Flats25 1/2

Oregon Trips30

EGGS

The prices paid by wholesalers to pro-
ducers are eight per cent less.

Dairy Exchange quotations, dozen in-
cluding cases:

Extras79

Extra Pullets68

Undersized61

Dairy Exchange prices, extras this week
and year ago:

October 19 20 21 22 23 25

'2083 1/2 83 80 1/2 77 1/2 — 79

'19— 78 1/2 81 — 80

Rcts. wk. ending Oct. 25, 157,080 doz.

POULTRY

Wholesale prices are:

Broilers, 15 pounds per dozen, 53@55.

Colored fryers—2 to 3 lbs., 34@36.

Colored young turkeys (smooth), 3 to
4 lbs., 38, staggy, 25@27.

Old roosters (colored), 20@23; market
firm.

Leghorns hens, 3 lbs., 36@38; under, 25.

Large colored hens, 38@40.

Young Pekin ducks, 25; old ducks, 23
@25; young geese, 25; market easy.

Live Belgian hare, 20@22; dressed, 25
@30; market firm.

Dressed Turkeys—Young, large, 62;
market firm. Live turkeys, young, 47@
52; old, 47@52.

Squabs—Large, 75-80 per lb., market
Pigeons—3.00@4.00 per dozen; market
firm.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1000
to 1200 lbs., 9@9 1/2; do, 1200 to 1400 lbs.,
8 1/2@9; do, second quality, 7@7 1/2; thin, 5 1/2
@6.

Cows and heifers: No. 1, 7 1/2@8; second
quality, 6@7; common to thin, 3@4.

Calves: Light weight, 10@11; medi-
um, 8@9; heavy, 7@8.

Lambs: Milk, 9@10; yearlings, 7 1/2@8.

Sheep: Wethers, 7@7 1/2; ewes, 5@5 1/2.

Hogs: Weighing 100 to 150 lbs. 14 1/2; 150
to 225 lbs., 15 1/2; 225 to 300 lbs., 15; 300
to 400 lbs., 14 1/2.

California Farm Bureau Marketing As-
sociation reports sales:

No. Av.Wt. Dock Price

Turlock, October 10

60 194 ... 14.60

59 190 ... 14.10

15 260 ... 14.10

45 159 ... 13.10

5 360 60 12.60

3 113 ... 12.50

Two cars, twenty-nine consignors.

Madera, October 21

69 188 ... 14.00

40 210 ... 13.75

46 163 40 13.05

22 154 ... 12.55

17 250 290 12.05

1 590 240 11.05

18 118 ... 8.80

Two cars, nine consignors.

Fresno, October 22

85 207 ... 14.50

38 213 ... 14.50

15 270 20 14.00

17 174 ... 14.00

9 149 ... 13.50

8 154 40 12.00

9 382 210 11.50

Two cars, twenty consignors.

POTATOES AND ONIONS

Wholesale prices:

Potatoes, per cental: Street prices:
River, 2.00@2.40 for No. 1, 1.50@2.00 for
No. 2; do, Oregon Burbanks, 3.00; Salinas,
3.25@3.50; Idaho Gems, 3.00. Sweet pota-
toes, 3@3 1/2 lb.

Onions: Yellow, 90@1.00 per cental;
Australian brown, 1.00@1.25; do, white
1.50@2.00.

Garlic: New, 6@8.

VEGETABLES

Wholesale selling price:

Beans: Lb., 5@9; garden, 8@10; Italian,
8@10; Lima, 10@11.

Beets: Sk., 1.50@2.00.

Carrots: 1.50@2.00 sk.

Cauliflower: Doz., 1.00.

Cucumbers: Lug, 1.00@1.50.

Cabbage: Lb., 1.

Celery: Cr., 2.00@4.00.

Corn: Sk., 2.00@2.50; fy., 3.00@3.50.

Egg Plant: Stockton, lug, 50@75; Liv-
ingston, 1.00@1.35.

Lettuce: Doz., 35@40.

Onions: Green, per bx., 1.75@2.00.

Peas: Lb., 13@15.

Peppers: Lug bx., Stockton Bells, 75@
90; Bay, 1.00@1.25; Chili, 75@90.

Spinach: Lb., 6.

Squash, Summer: Lug, 75@1.25; Cream,
75@1.00; Hubbard, 1.25@1.50, sk.; Mar-
rowfat, sk., 1.00@1.25.

Tomatoes: Bx., for canning 25@50; fy.,
Turnips: Sk., 1.50@2.00.

FRESH FRUITS

Apples: King David, 1.75@2.50; Bell
flowers, 1.40@1.60; choice, 1.25@1.40, grade
C, 1.15@1.25; Rhode Island Greenings,
1.50@1.75; Jonathans, lug, 2.00@3.50; New-
tons, 3 1/2 tier, 2.25@2.40; 4 tier, 2.15@2.25.
Spitzenburg, 2.00@2.50.

Avocado: Doz., 3.50@4.00, Blacks, doz
small, 1.00.

Bananas: Lb., 10@12.

Berries: Strawberries: 85@1.35 per
drawer; raspberries, 75@1.00 per drawer;
blackberries, chest, 8.00@12.00; Huckle-
berries, lb., 22@25.

Cantaloupes and Melons: Turlock can-
taloupes, standard, 1.25@1.50 lug; casabas
1.00@1.25 per crate, watermelons, 1 1/2
@1 1/4 lb.; Persians, 1.50@2.25 per crate.

Cranberries: Per bbl., 13.50@14.00; 7 25
@7.50 per half bbl.; Oregon, 4.50@5.00 box
Figs: Double, 1.25@1.50; single, 75@
1.00; White, 75@1.00.

Grapes: Malaga, 2.00@2.50; Tokay, 1.75
@2.25; Muscat, 2.25@2.50; Cornichon, 2 00

[Political Advertisement]

Vote "Yes" on Number 2

Prohibition Enforcement Act

Whatever our previous stand upon the question, Prohibition is now a part of the Constitution of the United States.

The safety of our nation demands that our National Constitution be strictly enforced. As long as Prohibition is in the Constitution, Prohibition must be enforced or California must become a lawless and law-breaking state.

The National Constitution has directed California and all other states to pass a Prohibition Enforcement Act. Most of the states have done this, with the result that they are almost entirely free from the scandals of illegal liquor traffic such as are now stirring California.

The Federal Government with its scanty supply of peace officers and courts cannot enforce the law and constitution without the help of the State Enforcement law, numbered "2" on Tuesday's ballot.

The question for California is "law or lawlessness." To that question a law-respecting citizen can give only one answer.

Wm. D. Stephens
C. C. Young
Mrs. Aaron Schloss
Warren Olney, Jr.
Curtis D. Wilbur
William J. Hunsaker
Wylie M. Giffen
Rolla V. Watt
Wm. H. Waste
Frank S. Boggs
Herbert C. Jones
Annie Little Barry
Will J. French
Irving Martin

Chester H. Rowell
Mrs. Herbert A. Cable
Friend W. Richardson
Harley W. Brundage
Mrs. Edward Dexter Knight
Dr. Adelaide Brown
W. A. Sloane
A. J. Wallace
Mrs. F. M. Ewing
William Kent
David P. Barrows
William Kehoe
Mary J. Workman

Mrs. Frank A. Gibson
Chas. H. Bentley
Wallace Alexander
M. B. Harris
Lee Phillips
John M. Perry
Mrs. W. A. Fitzgerald
Charles F. Stern
Will C. Wood
Franklin Hichborn
Aurella H. Reinhardt
Ray Lyman Wilbur
Katherine Phillips Edson

STATE COMMITTEE

Among the members of this committee are the Governor and Lieutenant-Governor, Members of the Supreme and Appellate Courts, Presidents of Universities, President and Past President of the California Federation of Women's Clubs, President of California Parent-Teachers' Association, Members of Railroad Commission, State Treasurer, State Bank Commissioner, State Superintendent of Schools, President Industrial Accident Board, Past President of the State Board of Agriculture, Editors and Leaders in Public Affairs and in the Commercial and Industrial Activities of the State.

@2.25 per lug.
Olives: Lb., 10@12½.
Peaches: Per small box, 1.50@2.00; L.
A. lugs, 2.00@2.25; Alameda, 2.50@3.25.
Pears: Wlnter Nellis, 1.75@2.00.
Persimmons: Bx., 2.00@2.50.
Pineapples: Dozen, 4.00@5.00.
Plums and Prunes: 2.00@2.25 per crate
or box; do, fancy varieties, 2.25@2.50;
small lugs, 2.75@3.00.
Pomegranates: 1.50@2.25 per peach
box; 3.00@3.50 per half orange box.
Quinces: Bx., 1.00@1.50.

CITRUS

Valencia Oranges: 5.00@7.50; Lemons.
2.00@4.00 Grapefruit, 3.00@4.50.

DRIED FRUITS

Raisins — Sunmaid, seeded, 36 15-oz.
packages, 24 lb.; seedless Sultanas, 25-lb.
boxes, 22½ lb.; Thompson seedless, 25-lb.
boxes, 22½ lb.; clusters, 5-lb. boxes, 1.50
box; Thompson seedless, 48 15-oz. pack-
ages, 23 lb.; 3 cr. L. M. raisins, 25-lb.
boxes, 26 lb.; 2 cr. L. M. raisins, 25-lb.
boxes, 25 lb.; 3 cr. L. L. raisins, 20-lb.
boxes, 5.25 box.
Figs: Fancy black, 25-lb. boxes, 11;
choice, do, 9 lb.; extra choice, do, 10½
lb.; choice white, do, 25 lb.; fancy white,
do, 18 lb.
Prunes: 30-40s, 25-lb. boxes, 20 lb.; 40-
50s, do, 18 lb.; 50-60s, do, 16 lb.; 60-70s,
do, 14 lb.; 70-80, do, 11½; 80-90, do, 11
lb.; 90-100s, do, 10 lb.

Apples: Fancy, 50-lb. boxes, 13 lb.; ex-
tra choice, do, 11 lb.; choice, do, 10½ lb.
Peaches: Blue ribbon brand, 48 11-oz.
to case, 10.00 per case; do, 24 2-lb. boxes
to case, 11.00 per case; choice peaches, 25-
lb. boxes, 17 lb.; extra choice, do, 18 lb.;
fancy, do, 20 lb.; extra fancy, do, 22 lb.
Apricots: Fancy, 25-lb. boxes, 30 lb.;
extra choice, do, 26 lb.; choice, do, 25 lb.
Pears: Fancy, 25-lb. boxes, 20 lb.; ex-
tra choice, do, 16; choice, do, 15.

BEANS

Jobbers prices:
Small white, 5 per lb.; large white, 5;
pinks, 6; Limas, 8½; cranberry, 6½;
Mexican Garvanzas, 8; Lentils, 12; Black-
eye, 5½; Mexican Reds, 7; Popcorn, 8;
California Bayo, 9 split peas, 7; green
peas, 4.

NUTS

Peanuts: Japanese, 10.
Pecans, 25.
Almonds: California Almond Growers'
Exchange quote:
Nonpareil26
I. X. L.26
Neplus25
Drake18

GRAIN

Wheat: 3.50@3.75 cwt.; mill run, 2.75
@2.85.
Oats: Red feed, new crop, 2.40@2.65.
Barley: New feed, 2.10@2.15; shipping,
2.15@2.25.
Shorts: 60@63.
Middlings: 72@75.

HAY

Alfalfa Growers of California under
date of October 26:
No. 1 Dairy Alfalfa.....27.00
Standard Dairy.....23.00
Stock Hay.....22.00

Under date of October 22 A. W. Scott &
Co. says:

Receipts past week 1,347 tons. The San
Francisco hay market is perhaps the ex-
ception in produce markets, in that it has
remained almost stable throughout the
fluctuations of all other commodities and
with a steady although light demand has
maintained its average of prices. The
last week has shown a market stronger
and with prices advanced even with re-
ceipts somewhat heavier. Almost all
lines of hay have been selling in San
Francisco and throughout the country
tributary to this city at from \$1 to \$2 per
ton better than during the preceding
weeks. Possibly this is caused by the
stronger reaction in the grain markets
although in all probability local con-
ditions have more to do with this increase.
There seems to be a little more activity
in buying although consumers will not
yet purchase anything in storage. Farm-
ers have apparently been able to make
their financial arrangements and we have
not seen any indication of sacrificing their
hay in order to provide funds for pressing
necessity. Alfalfa is apparently strong-
est of all types of hay and although some
is being shipped in from Nevada alfalfa
raisers in that state have been holding
at prices that do not conflict seriously
with the selling of the California crops
at prices quoted.

We quote today wholesale prices in
carload lots as appear from dealers'
transfers upon the hay market in San
Francisco (for prices to consumers, charge
of cartage, commission and handling ex-
penses must be added according to con-
ditions):

Per Ton
Wheat hay, fancy.....23.00@29.00
Wheat hay (light 5-wire
bales) fair to No. 1.....24.00@27.00
Tame oat hay, fair to choice.....24.00@27.00
Wild oat hay18.00@20.00
Barley hay17.00@20.00
Alfalfa hay22.00@25.00

Citrus Markets

Los Angeles, October 27, 1920.

The Valencia supply is practically
cleaned up. F. o. b. shipments have ended
and but few cars will remain to go after
November 1. Central California ship-
ments will begin early in November as
the crop is coloring earlier than usual.
Some sales of Naveis are reported in the
Lindsay-Porterville district at four cents
per pound on tree.

The lemon situation is manifesting far
more life. A fighting chance is now given
to the lemon growers by the great reduc-
tion in imports.

Shipments

Shipment of oranges to date since No-
vember 1, 1919, from Southern California,
29,909; lemons, 8,532; total, 38,441. To
same date last season: Oranges, 34,941;
lemons, 9,645; total, 44,586. From Central

California to date this season: Oranges,
5,375; lemons, 288; total, 5,663. To same
date last season: Oranges, 3,714; lem-
ons, 251; total, 3,965. Northern California
this season: Oranges, 261; lemons, 23;
total, 284. To same date last season:
Oranges, 244; lemons, 2; total, 246.

AT THE AUCTIONS

October 22
New York: 4 or., 2 lem. Val. 8.10-9.60,
lem. 5.05-6.00.

Boston: 2 or., 1 lem. Val. 6.10-8.80, lem.
7.75-8.00.

October 25
New York: 5 or., 3 lem. Val. 4.80-11.80,
lem. 5.25-5.85.

Baltimore: 1 or., 2 lem. Val. 5.70-6.85,
lem. 3.60-4.25.

St. Louis: 1 or., 1 lem. Val. 6.70-7.45,
lem. 2.15-2.35.

October 26
New York: 1 or., 2 lem. Val. 8.60-10.25,
lem. 5.35-5.80.

Philadelphia: 2 or., 2 lem. Val. 5.05-
9.70, lem. 3.20-3.85.

Pittsburgh: 1 or., 1 lem. Val. 4.50, lem.
3.80-5.20.

St. Louis: 1 or., 1 lem. Val. 6.50-7.30,
lem. 3.00

WEATHER REPORT

San Francisco, Cal., October 23, 1920.				
Stations	Wk.	Season	Norm.	Max. Min.
Eureka	1.28	7.49	3.23	64 40
Red Bluff	.36	2.01	1.85	82 40
Sacramento	.58	1.27	1.13	80 42
San Francisco	.26	1.96	1.18	78 50
San Jose	.30	1.72	1.01	78 42
Fresno	.16	.95	.78	74 42
San Luis Obispo	.52	1.20	1.37	82 40
Los Angeles	.44	.48	.58	76 50
San Diego	.17	.19	.41	68 46

San Francisco, Cal., October 16, 1920.				
Stations	Wk.	Season	Norm.	Max. Min.
Eureka	.80	6.21	2.59	68 42
Red Bluff	.86	1.65	1.49	68 40
Sacramento	.24	.71	.82	72 44
San Francisco	.23	1.70	.80	70 51
San Jose	.44	1.42	.77	74 40
Fresno	.15	.79	.60	72 45
San Luis Obispo	.08	.68	.88	78 42
Los Angeles	.06	.04	.32	76 54
San Diego	.00	.02	.30	74 52

BREEDING DATE BOOK—FREE

We have issued a convenient little book for the keep-
ing of breeding dates of cattle, hoping to aid the
breeder and cattle owner in maintaining accurate
records. We will gladly mail you a copy free if you
request it. A postal will do.

CALIFORNIA BREEDERS SALES
AND PEDIGREE CO.

C. L. Hughes, Sales Manager

Sacramento

Cal.

STANDARD
BALE TIES
BALING WIRE

Spot Stocks

Quick Deliveries

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Phone 66026

712 I. W. Hellman Bldg.

LOS ANGELES

Mariout Seed Barley

Good Clean Seed raised in
Southern California from
Davis Seed

Lewis J. Utt

Pala

Cal.

The farm bureau center of Alameda
County features its regular meeting
with a luncheon and a social hour.

[POLITICAL ADVERTISEMENT]

To the Farmers of California:

We most emphatically and unreservedly urge you to vote "NO," Novem-
ber 2nd on the Initiative Amendment No. 4 on the ballot for the following
reasons:

It raises the percentage of required signatures from 8 to 25 per cent on
any initiative measure concerning the assessment or collection of taxes.

This number is absolutely prohibitive—calling for a quarter of a million
signatures—and would kill the Initiative in its most important function of
government—Taxation.

It is not necessary to adopt this measure and kill the Initiative in order to
defeat single tax as the record of the votes shows that the people of California
are overwhelmingly opposed to single tax.

If this amendment should carry, no basic taxation measure could here-
after be initiated by the people but all such measures would have to emanate
from the legislature, and as all such measures require a constitutional amend-
ment and as constitutional amendments require a two-thirds vote of both
houses of the Legislature, and as 14 members are a little more than one-third
of the Senate, it thus follows that 14 members of the Senate of California could
prevent the submission of any measure concerning the assessment or collec-
tion of taxes, even though all the members of the Assembly, 80 in number, the
26 remaining members of the Senate, the Governor, and all of the rest of the
voters of the state, wanted it.

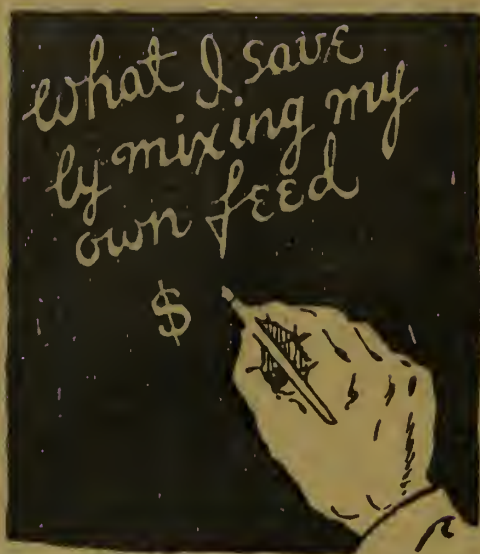
Save democracy by voting "NO" on Amendment Number Four.

C. C. Young, Lieutenant-Governor.
Chester H. Rowell, Regent of the Uni-
versity of California.
Irving Martin, Editor of the Stockton
Record.
E. A. Dickson, Regent of the University
of California.
Rudolph Spreckels, Capitalist.
S. C. Evans, State Senator from River-
side.
E. P. Clark, Pres. State Board of Educa-
tion, and Editor Riverside Press.

Mrs. Frank A. Gibson, Member Immi-
gration and Housing Commission.
Mrs. J. O. Colwell, Director Los Angeles
Co. Farm Bureau.
Mrs. H. H. Koons, Member Board of Di-
rectors, Orange Co. Walnut Asso., and
California Walnut Asso.
E. O. Edgerton, President State Railroad
Commission.
Will C. Wood, State Superintendent of
Schools.
Ben Allen, Editor The Sacramento Union.

Amendment No. 4 on the ballot is opposed by Governor William D.
Stephens, Senator Hiram W. Johnson, Senator James D. Phelan, President
Barrows of the University of California, President Wilbur of Stanford Uni-
versity, and the other progressive citizens of California, who are laboring in
the cause of Democracy.

Vote "No" on Number 4



**It may work
out with the
PEN**



**Does it work
out with the
HEN**

Perhaps you figure it this way: "Why should I buy mixed feed? I want to know what my hens eat. So, why not buy the separate ingredients and mix them myself? In this way I know just what goes into the mash. And I save the mixing charges, too!"

We'll admit—it sounds reasonable enough. But—at the end of the year when you scale up your profit-figures, how does it work out? Have you ever compared the results you get from hand-mixed feeds with the results other poultrymen are getting from a uniform, top-grade feed like SURELAY?

After all, the thing that counts is not how much you *think* you save by mixing your own feed—but what the hens think of the feed you give them and what they do with it. Egg-production is the test that tells! Egg-production is what makes many a feeder ask himself: "Just how cheap *are* cheap feeds?"

Seasoned poultrymen who have fussed with this feeding question will tell you that cheap feeds lessen the profits of every hen in the flock. Moreover,

our large scale production enables us to manufacture and *sell* the finished feed lower than the average feeder can *buy* the ingredients—to say nothing of the cost and trouble of mixing.

Nor, for a moment, should you overlook this: no matter how careful you are—no matter what methods you use—you'll have to own up that hand-mixed feed is guesswork at the very best. Whereas, when you feed SURELAY, you *know* what you're feeding. You know that every batch contains exactly the same uniform proportion of food-values. Our daily laboratory tests (an advantage the individual feeder cannot have) take good care of that.

If you want to see for yourself why we, as manufacturers and millers, are in a position to mix a uniform quality-feed cheaper and better and quicker than you can—send for the new edition of our booklet, "Makes Hens Happy." Full of practical hints and profit-pointers! It is yours for the asking—simply fill in the coupon and mail today!

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CALIFORNIA CULTIVATOR

and **LIVESTOCK** and **DAIRY JOURNAL**

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

November 6, 1920

No. 19

Impressive Figures as to Food Production

BANKERS are giving more sympathetic consideration to the problems of the farmer. This is perhaps not because of any philanthropic motive but purely as a business proposition. More crops, more money; more money, more business for bankers.

For instance, the recent cotton situation in California called for relief in face of a flat market and insufficient funds in the hands of the producers to harvest and gin the crop. The policy which the federal reserve had been following for the past few weeks offered little encouragement. Finally, however, the local banks, together with the larger financial institutions of Los Angeles, took the matter up, and now funds are being advanced as rapidly as the cotton growers may need them.

This brings to light the fact that one of California's larger institutions, the First National Bank of Los Angeles, has installed a new department having to do with California agriculture, especially with a canvass to determine as to the past and present year's output; likewise, so far as possible the future scope of agricultural practices will be looked into.

Some figures indicating the size of the job of estimating California agriculture appear in the center of this page. Accompanying this table is the following statement:

"The question of the financing of crop movements in the West, particularly in California, is of supreme importance, and it has long been the hope

of Western bankers to work out some proper method of equitable commodity financing. In order to obtain the necessary data for the proper consideration of this matter, in so far as California is concerned, we have attempted to make a survey of the actual production of the state during 1920 and to draw comparisons for that production with the years of 1919 and 1918.

"Working through the various banks and railroads of the state, and due particularly to the kindness of E. E. Kaufman, field agent of the

bureau of crop estimates of the United States department of agriculture, there has been compiled a rather complete report of California crop conditions for 1918 and 1919 and also crop estimate for the year ending December 31, 1920, without the value of the crops in the field for the present year, although total values for 1918

Crop	Production 1918		Production 1919		Forecast 1920
	Bushels	Value	Bushels	Value	Bushels
Corn	2,975,000	\$5,742,000	2,871,000	\$5,139,000	3,022,000
Oats	5,600,000	5,264,000	5,250,000	5,040,000	5,576,000
Barley	34,320,000	39,468,000	30,000,000	42,300,000	29,468,000
Wheat	7,590,000	16,394,000	16,335,000	33,323,000	9,840,000
Potatoes	12,870,000	15,444,000	11,352,000	19,412,000	12,560,000
Sweet Potatoes	1,190,000	1,785,000	1,906,000	1,962,000	1,224,000
Rice	7,336,000	13,938,000	7,881,000	21,042,000	9,388,000
Hay	3,143,000	62,687,000	4,462,000	75,680,000	4,211,000
Hops	12,500,000	2,500,000	17,875,000	13,764,000	18,882,000
Beans	8,584,000	46,353,000	5,000,000	19,466,000	3,321,000
Cotton	93,420	14,013,000	97,634	20,991,000	130,000
Grain Sorghums	4,696,000	7,889,000	4,386,000	6,755,000	5,198,000
Sugar Beets	858,000	8,534,000	821,000	10,968,000	1,060,000
Onions	2,870,000	3,588,000	2,755,000	5,196,000	
Apples	6,560,000	8,528,000	8,640,000	12,528,000	6,264,000
Peaches	11,920,000	16,688,000	17,600,000	26,400,000	15,873,000
Pears	4,240,000	5,936,000	4,500,000	8,100,000	3,256,000
Prunes	45,000	7,250,000	130,000	31,200,000	100,000
Apricots	136,000	6,800,000	165,000	13,200,000	110,000
Oranges	18,500,000	69,475,000	15,000,000	48,169,000	18,000,000
Lemons	3,767,000	11,301,000	5,310,000	12,744,000	4,500,000
Raisins	167,000	20,040,000	180,000	37,600,000	200,000
Other Grapes	486,000	13,995,000	530,000	16,500,000	500,000
Cherries	11,000	1,320,000	12,400	1,860,000	14,000
Plums	39,000	1,950,000	43,000	2,580,000	40,000
Figs	8,000	1,600,000	10,000	2,500,000	12,000
Olives	13,000	2,760,000	14,000	2,800,000	9,000
Almonds	4,500	1,620,000	6,800	2,992,000	5,600
Walnuts	20,000	10,000,000	26,500	15,440,000	24,000
Cantaloupes					12,500
Cantaloupes & Vegetables		55,000		16,200,000	

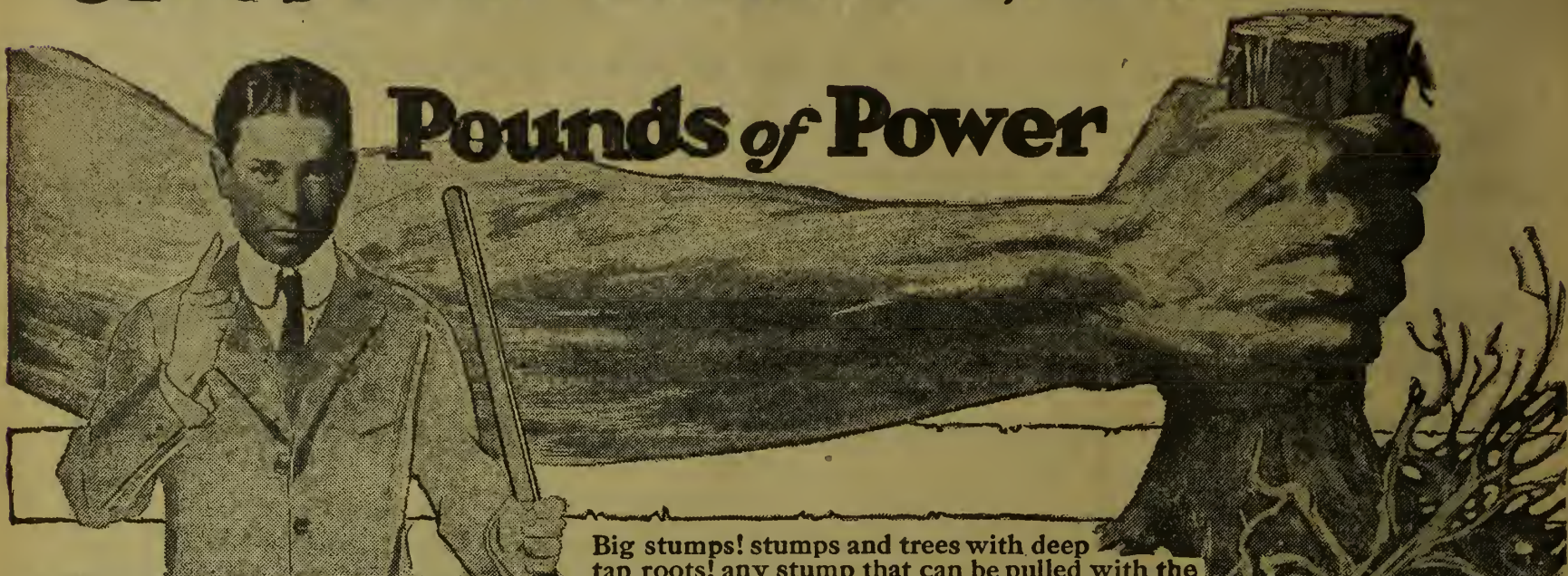
and 1919 are readily obtainable. The total values for 1918 and 1919 are for the field value."

How to get the money to handle this immense production is a problem which concerns farmer, shipper, merchant and banker. The Lindsay National Bank in a recent statement says that but 7.2 per cent of the nation's money is in banks. As individuals we are carrying around \$20.75 in our pockets. One dollar deposited in a bank is turned back into the channels of trade and passes through 20 hands during the year; the average dollar in the pocket of the public has infinitely smaller circulation. If this ready cash could be jarred loose from the pockets of the people one long step would be taken in the problem of moving California's great food crop.

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Pounds of Power



Big stumps! stumps and trees with deep tap roots! any stump that can be pulled with the best inch steel cable! you *alone* can pull with my "K" Hand Power Stump Puller--without digging and without the expense of teams and powder. We guarantee it. We refer you to U.S. Gov. officials. We give highest banking references. If you have stump land, the cheapest way of clearing it is with the

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H. Sinclair of the Dept. of the Interior, a U. S. Gov. official, writes: "The stump puller is a wonder." Ernest Thompson Seton, author and naturalist, declares the "K" "a great success."

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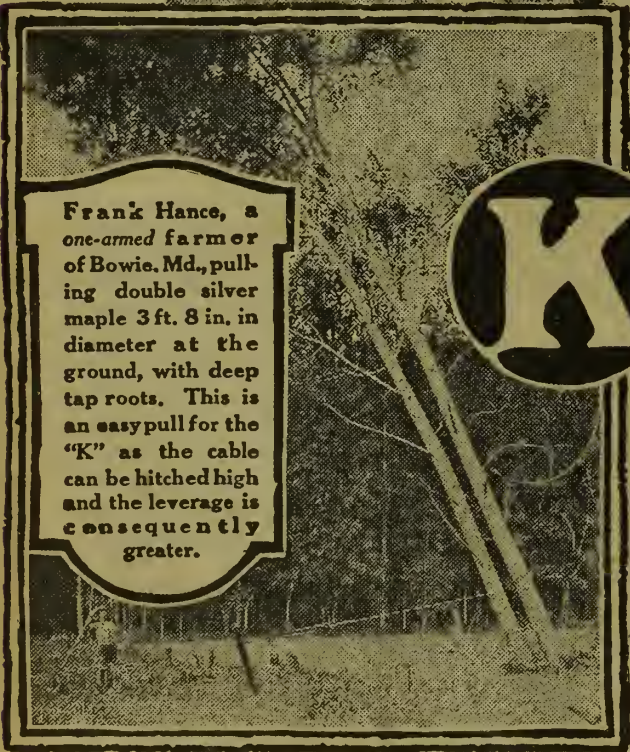
Special Offer We are making a special offer to get a "K" Stump Puller introduced in every neighborhood. Write us today for full information and for free book on Land Clearing and about our Wonderful Drag Saw.

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of Foster, Wash.,
pulling a 24-inch
fir stump with
deep tap roots out
of hard ground,
without using
powder or cutting
any roots.

Name _____

Address _____

California Cultivator

Vol. LV, No. 19

Los Angeles, November 6, 1920

One Dollar Yearly

Planning and Planting a Vineyard

By Fred K. Howard

DOES fruit production involve only the questions of cultivation, harvesting and selling the crop? In a general way these three operations do cover commercial fruit production, but there is a world of detail which must be considered by the grower when producing and marketing fruit. It is the successful working out of these details or the lack of attention to them which determines whether or not the undertaking is to be a success or a failure.

Thanks to the splendid cooperative spirit of fruit growers in California, marketing associations have been successfully organized. These cooperative associations have stabilized the prices which the grower receives for his fruit and they are solving the old problem of standardized products. The fruit grower of today and of the future can, therefore, devote all of his energies to the production of more fruit per acre. He is enabled to spend a larger share of his time in the study of methods which will improve the quality of his product. Today and in the future the "velvet" in the fruit business will go to the man who, by reason of this study and the application of scientific principles, is enabled to increase his production above the average in quantity or in quality. The success of a fruit grower in the future will be the measure of his ability to produce good fruit, and not his ability to "guess" whether to sell or to hold, that he may obtain a better price than his neighbor. Speculation has been eliminated in the marketing of the crop and it is gradually being eliminated from the question of production.

It is for this reason that growers are paying particular attention to all the factors which may influence the producing ability of the new acreage they are planning to plant. Thousands of acres of land in the San Joaquin Valley will be planted to vines this year.

Many growers are selling already improved and producing places and are concentrating their energy and experience on the proper development of new acreage. It is within reason to expect that much of the new acreage will therefore break all previous production records when it reaches the bearing age. On the other hand, many people are planning to develop new vineyards who know comparatively little of this branch of farming, so many partial as well as complete failures will be inevitable.

What will the experienced grower do to insure the success of this effort? This is a question that is being asked by many who may lack in experience or training. The very first essential in producing good grapes is good land. Good land is not determined by the price one is asked to pay. Good land is not always indicated by what one is able to see on the surface. A layer or stratum of hardpan may prevent proper root penetration. It may prevent proper drainage. In fact, such land, unless it can

be successfully blasted, may prove to be entirely unfit for the production of grapes. Often layers of clay a foot or so beneath the surface will prove as detrimental to the undertaking as will hardpan. A soil auger, a post hole digger, or a shovel should be used to determine the underground conditions before any land is purchased, no matter what the price may be. Don't stop when one hole has

been dug; dig a dozen on different parts of the place. The presence of alkali has much to do with the quality of land and is very often the deciding factor between success and failure. Alkali is often very hard to detect, especially during the rainy season, and if there is any question, or even a slight suspicion of its presence, samples of the soil should be analyzed by a competent chemist. Remember, poor land is expensive at any price. It is far

wiser to buy a small amount of good land at a high price than to spend less per acre for poor land. It takes almost as much time and money to cultivate the spots on which nothing will grow or on which, if vines do grow, poor crops are produced, as it does to care for the high producing parts of the vineyard.

Look carefully into the water supply. If you are on a ditch are you



A Young Thompson Seedless Vineyard

Production like this is possible only on good land where the grower has paid careful attention to every detail which tends to improve quantity and quality. Such vineyards are now the exception; it is possible to make them the rule.

sure to get plenty of water when you need it? Consult other growers on the same ditch and learn as much as you can about the management, assessments, quantity available, the time of year the ditch goes dry, and other points of importance. It is possible that you will discover from these inquiries that it will be necessary to have a pumping plant in addition to the ditch water. The expense of a pumping plant, especially if its necessity is unexpected, might seriously

cripple or exhaust available resources. If irrigation is to be from wells, the distance to water, the probable lift and the availability of power are factors which should be carefully considered. The water lift alone requires careful study, as an excessive lift may make the cost of an acre-inch of water so great as to be almost prohibitive. Excessive electric power rates in some districts may also work a hardship. By all means carefully investigate the possible supply of water and try to determine whether it has any indication of diminishing due to continued or excessive demands by present and future development in the district. Have the water of wells in the district analyzed for alkali. You cannot afford to pump alkali salts on land you have paid real money for, if you expect to make a living from that land. Remember that you are in fact in competition with every other grape grower. You must at least produce an average crop on every acre of the land you are planning to plant or you will in time be forced out of business. If you can produce an average crop or better for a term of years, then and only then do you stand a chance of making a success in the production of fruit.

Water and labor are two of the most important factors when considering the cost of production. When planning the vineyard careful thought should be given to any idea which, when put into operation, will tend to conserve either or both. Probably no other factor is so important in this connection as properly leveled land. The even distribution of water is very essential when producing good crops, and no matter how much labor is used it is practically impossible to get an even distribution of water unless the land is level. Leveling does not mean "guessing" that some dirt from one place should be moved to another. Guesswork or speculation of this sort should be discouraged wherever possible. An engineer or someone familiar with the use of a level should set grade stakes, planning the work so a minimum amount of dirt is moved. At the same time the permanent irrigation ditches on the place should be planned and laid out.

Leveling should be done as early in the fall as possible to permit a good flood irrigation or the winter rains to settle the freshly moved dirt. Very often some finishing work will be needed, especially if large fills have been necessary.

Any amount of money spent in getting a good leveling job is justified, provided, of course, you get all you pay for. It will take only a season or so of handling water on uneven ground to spend more than the entire job of leveling would have cost. Poor production on high spots where it is hard to get the water and on low spots which get too much soon make a hole in the profits. Good land and proper leveling are the lessons that have been learned by growers in the older grape districts, and the prospective grower should profit by this experience.

Convention Week Program at Fresno

NEXT week will be one of inspiration for producers of California fruits and foods, for the producers of the state are all invited to gather at Fresno to discuss cultural, market and other economic questions. This is the old State Fruit Growers Convention, enlarged and elaborated until it has become far reaching. There will be the 53d state convention under direction of George H. Hecke, director of the state department of agriculture. State horticultural commissioners will also gather, discussing problems affecting quarantine, pest eradication, standardization and other interesting and helpful subjects. The nurserymen will also gather in tenth annual state convention at which nurserymen's problems and doubtless problems affecting the new Bud Selection Association will also be discussed. At

times all these bodies will unite in mass convention. The program is:

Tuesday, November 9—Convention opens at 9:30 a. m. with short address by president of chamber of commerce, followed by invocation, address of welcome by Mayor Toomey, response and annual address by Director Hecke. The remainder of the forenoon and the afternoon session will be given to discussion of "Our Present and Future Problems." This discussion has to do with various cooperative organizations. Addresses by: F. A. Seymour, Associated Raisin Co.; President Wilson, Peach and Fig Growers; W. E. Sprott, Fruit Growers Exchange; Manager Thorpe, Walnut Growers; President Pierce, Almond Growers; President Swett, Pear Growers; Secretary Dunlap, Prune and Apricot Growers; President Cutter, Fruit Exchange; Sales Manager Sieg, Fruit Distributors. President Roeding of the State Agricultural Society closes Tuesday afternoon program with discussion of Farmer and Fair.

(Continued on Page 602.)

Agricultural News Notes of the Pacific Coast

Northern California

The rice mill at Gridley has begun the season's work.

Willows, Glenn County, reports rice harvest very backyard.

The students at the University of California now number 9,670.

California is now producing \$18,000,000 annually in her poultry yards.

The Orange and Olive Exposition at Oroville opens on November 15.

One Colusa vineyardist has disposed of his second crop of Muscats at \$75 per ton.

California will receive \$181,003.13 as her share of national forest receipts for the past year.

Northern Sacramento mountain sections report heavy precipitation of snow during the recent rains.

The California Olive Association spent \$10,000 in bacteriological investigation of botulinus poisoning.

Members of the farm bureau of Eldorado County recently attended agricultural club convention at Davis.

The Pacific Rice Growers Association has set a minimum of \$3.08 for paddy rice at growers shipping point.

The state university is preparing a correspondence course on apricot culture which will be available about January 1.

Rice growers are now being offered less than half the price which prevailed a year ago. Few sales are being made.

Chico chamber of commerce sent a large delegation to attend the farm bureau meeting at the Durham Land Settlement.

California produces 96 per cent of the apricots grown in the United States is the statement of the University of California.

Director of Agriculture Extension Crocheron says that eight assistant farm advisers have been called for in as many counties.

Cattlemen of Arbuckle, Colusa County, were fined \$50 each for allowing their cattle to run at will over the mountains and foothills.

Large stocks of wool accumulated in Australia during the war are ready to be thrown on the market to still further depress the wool prices.

In a number of the sheep growing sections sheep have not been sheared this fall because of high prices of shearing and low prices of wool.

The Ehman Olive Plant at Oroville, said to be the largest in the world, will formally open on November 15, the day of the opening of the Orange and Olive Exposition.

The road running south of Willows is being repaired. This is across an alkali section where the base lacks sufficient thickness to hold up and went to pieces under heavy trucking.

There was an attendance of 432,467 at state university extension classes, lectures, moving picture entertainments, or enrolled in extension correspondence courses during the past year.

The matter of the riparian rights of towns along the lower Sacramento River and the suit to restrain rice growers of the upper river from taking out the waters for irrigation purposes is still before the courts. There are 310 defendants named in the suit instituted by the town of Antioch.

Central California

Twenty-two Japanese companies have filed articles of incorporation in Merced County during 1920.

Modesto, Stanislaus County, is rejoicing in the possession of a new bank, building, charter, and all.

The United States Indian agency at Greenwood, California, bought the first prize bull at the Tulare County fair.

The California Peach Growers have received about 20,000 tons of peaches this year, as against 27,000 tons in 1919.

Governor W. D. Stephens will attend the banquet of fruit growers to be held in Fresno on the evening of November 11.

Local fruit men estimate the present season's orange crop in the Fresno district to be about 350 cars, crops normal, quality good.

The second raisin allotment by the California Associated Raisin Company will be made some time in November and amount to about 25,000 tons.

In the packing houses of Fresno 3,500 tons of raisins are awaiting cars to carry them to ports and markets, a shortage of 100 cars at present.

A statement from Fresno is to the effect that figs will begin coming to the packing houses about November 15 and the crop will be about 10,000 tons.

Kern County farm bureau hog sales will be held in November at McFarland, 13; Bakersfield, 20. In December, Wasco, 4; McFarland, 11; Bakersfield, 18.

The 53d Fruit Growers and Farmers Convention will be held in Fresno, November 9-13; the nurserymen's convention will be held 8-13 in the same city.

Watsonville district, Santa Cruz County, has received nearly three inches of rain up to October 20, as against a mere trace at same date in 1919.

Turlock, Stanislaus County, reports much damage by recent rains to corn, beans and melons, but slight damage to cotton, and stock ranges greatly benefited.

The stemming of 1,000,000 pounds of Thompson Seedless raisins has begun at Turlock, Stanislaus County, no other variety being grown commercially in that section.

The farm bureau exchanges of three counties—Madera, Merced and Stanislaus—have organized a calf department and thereby received higher prices than ever before.

Kern County farm center meetings for November are: Delano, 8; Old River, 9; Wasco, 10; Rio Bravo, 11; Edison-Fairfax, 12; Mountain View, 15; Pond, 17; Inyokern, 18; Rosedale, 19.

The olive growers of Tulare County have pooled all stock remaining in their hands and will place it in the hands of a committee for immediate sale or to hold in salt solution for an improved market.

L. A. Nares of Fresno has been named vice-president of the National Highway Traffic Association, to represent California, Nevada, Oregon, Arizona, Washington, Utah, Colorado, Montana, Idaho, Wyoming and New Mexico.

Southern California

The Palo Verde Valley has seven cotton gins now in operation.

The Pasadena Flower Show will be held at 60 West Colorado Street, October 28, 29, 30.

Two long staple and two short staple cotton gins are running steadily at Brawley, Imperial County.

Riverside County is forming a co-operative marketing association to include every fruit center in the county.

The three prizes awarded Coachella Valley cotton at the Riverside fair all went to Henry Middleton of Thermal.

A Delicious apple at Yucaipa weighs 19 ounces and a Stayman Winesap over 20 ounces, in the 1920 crop records.

In three days, October 16-19, oil prospecting permits covering 10,000 acres were issued at the U. S. land office, El Centro.

More than 300 tons of honey have been produced in Orange County during 1920, the state exchange handling 236 tons.

Coachella Valley cotton growers anticipate better prices in the near future and are holding their crops in the warehouse.

Imperial Valley cotton growers have already imported 1,800 pickers from Mexico, and the number needed is estimated at 3,500.

Farm Adviser Neibelung of Riverside County will hold gopher exterminating demonstrations at various points during November.

Growers about Rialto, San Bernardino County, estimate the coming season's output of citrus fruits from that section at about 1,200 cars.

Walnut picking in the Lankershim district is nearly over, with reports of a good yield. The local packing house employs about 20 persons.

Ventura County reports the heaviest yields of Lima beans running from 42 to 45 sacks to the acre, both from the Ventura and Montalvo districts.

Mr. Spencer of Costa Mesa, formerly Harper, Orange County, reports most successful disposal of many of the products of his farm through way-side market.

The first of Imperial Valley's 1920 pomeios were delivered in Los Angeles by airplane, the journey consuming less than three hours from El Centro to Los Angeles.

Ventura County farmers are anticipating setting a fair agricultural wage for the next few months through calling together a committee of the largest growers from each section.

The lettuce acreage in Imperial Valley, as well as condition of the crops, is about the same as 1919, but a small cabbage worm has been playing havoc until a recent cold spell curbed its activities.

The Orange County farm bureau held an important citrus school, with orchard demonstrations, on the W. R. Ward ranch, Anaheim, October 27, 29. Some of the lectures will appear in the Cultivator.

The Orange Belt Honey Producers Cooperative Exchange held an important and interesting meeting at Riverside, November 1, including beemen from both Riverside and San Bernardino Counties.

The Coast and General

The 1920 Sultana raisin crop in Smyrna is 25 per cent less than that of 1919.

Stem end rot caused heavy losses this year to Southern states melon growers.

An immense prune dryer has been erected at Elberton, Whitman County, Washington.

The Tenth Annual Seed Show of Idaho will be held some time during January, 1921.

The 1920 bean crop was a reduction over that of 1919 in all states except Colorado.

Arizona orange picking began in the Salt River Valley October 15, also at a few minor outside points.

It is rumored that an orange grove at Florence Villa, Florida, sold for \$3,500 an acre, a record price for that state.

The total value of Arizona property according to the assessor's statements just issued for the year 1920, is \$844,455,682.

Under normal conditions there is no wool storage in New Zealand at this season, but now there are 412,000 bales in warehouses.

California produced 97,531,997 barrels of petroleum in 1918, according to a late report of the United States geological survey.

Some of Oregon's best Holsteins were recently sent to a cattle sale at Sacramento, one bull bringing \$3,300 and a cow \$1,025.

Land owners of Thief Valley, Oregon, are moving to secure through the federal reclamation service irrigation on a large tract of land of that valley. It is estimated that the project will cost around \$106 per acre.

Range conditions throughout Arizona are good with the exception of parts of Cochise County, where it has been quite dry. Cattle gathered up on the fall roundups which are now in progress are generally in good condition.

Seed of the pure bred Pima cotton from fields planted with rogued seed. It is expected, will be sufficient to plant 150,000 acres next season. Ginners that will distribute this seed are being urged to pro rate it if applications are received for more than this amount.

Merchants of Phoenix have set the last Thursday of each month as Suburban Day. On this day special bargains will be offered to farmers and people of the adjoining towns, as an inducement to traders from outside. The first of these days is to be held October 28.

D. Brabant, a cotton broker of Lille France, has been in the cotton growing districts of Arizona studying the long staple cotton industry. In this French town there are some famous mills which produce fine fabrics, for which it is necessary to use the highest grades of cotton.

A farmer of the Salt River Valley of Arizona has sent some Indian wheat seed to Dr. R. H. Forbes, formerly dean of the Arizona college of agriculture, now in Egypt. Dr. Forbes writes that he believes that this wild Arizona plant will do well on the north coast of Egypt and in Palestine.



WINTER, such as it is in California, is here and we find the various storage battery dealers and service stations with their respective sleeves rolled up for the busiest season in the history of the automotive game.

The pith of the situation is embodied in two very short words—poor gas. A certain amount of battery trouble is inevitable during the colder months but with the Golden State just shaking loose from an appalling shortage of gasoline which made necessary a lowering of quality in many localities the young men who manipulate the hydrometer seem justified in predicting a bumper crop of grief for motorists.

Especially care should be taken in starting trucks, tractors and passenger cars equipped with storage batteries on these cool, snappy mornings. There are a number of little tricks known to the man who understands his car that will help keep the battery in functioning condition while his thoughtless neighbor is held up waiting for the service wagon to arrive.

The Cultivator does not make a practice of naming specific products in its reading columns but will not hesitate to state that the "Armstrong Starter" is without an equal for the man who would save battery bills. If a person is feeling husky and equal to the occasion the first start of the day should be made with the good old fashioned crank of our forefathers. Should one be suffering with lumbago or otherwise indisposed the next best thing is to turn the motor over three or four times with the crank, break-

Boreas and Your Battery

By James De Camp

ing up the oil that has stiffened and congealed through the night, and then finish the job with the starter button.

When a piece of automotive equipment is run into the barn or garage for the night the motor should be speeded up and the choke pulled wide open as the current is switched off. This fills the combustion chambers with a vapor which condenses on the side walls during the night and makes starting easier. It seems puerile to state that a driver should throw the throttle wide open and pull the choke out to its fullest extent when making the first start of the day, yet you doubtless have noticed people playing a battery wrecking solo on the starter with the motor getting less gas than would drown a microbe. Women are especially prone to indulge in this expensive pastime and often cannot understand why a comparatively new battery loses its ambition and quits on the job. The battery is just like your gasoline tank. There is a certain amount of electrical energy stored within the battery cells and the more you remove the less will remain. When the supply is exhausted a recharge becomes necessary, and oftentimes further repairs.

Motors that become obstreperous because of low grade fuel or poor design of the manifold can often be helped by pouring hot water over the carburetor and even on the motor it-

self. This is a laborious but certain method of hastening vaporization and saving time. If after repeated efforts the motor does not start shift your suspicions from the carburetor and gas supply to some other part of the mechanism. Above all else do not saw blindly away with the starter hoping that the machine will change its mind and begin the day's work.

If the battery service station is near the regular free inspections should be taken advantage of religiously. Owners who live too far from town to have this convenience should own a hydrometer and do their own testing and filling with distilled water at stated intervals. If hydrometer readings show a continued decrease from the normal, 1.280, trouble is in the wind. Sometimes a readjustment of the generator or a long run will bring the battery back to par, but more often it is necessary to take the "juice box" to a service station for recharging.

Your battery man is anxious to give you satisfaction, and behind him stands the company that made and marketed your battery. Competition is so keen in the battery world that a dissatisfied user is a very undesirable party to have abroad. Consequently you may rest assured that you will be given all possible consideration and, if your guarantee has not

expired, all trouble not caused by your negligence will be cheerfully repaired.

The man who recharges your battery is qualified to advise you should new plates or insulation be necessary. Perhaps, after opening up your battery, he will recommend that you buy a new one. There is no "bunkum" about it, since a reliable battery man will show you your plates and insulators, thus permitting you to judge their condition for yourself.

A new battery is often cheaper than repairs, just as a capable tractor is a better investment than a rebuilt machine that will be in the shop two or three days out of the week. If your equipment is of the type that draws the ignition spark from a storage battery instead of a magneto, your truck, tractor or motor car will go only as long as the battery functions. Where the battery leaves off, lost time, service fees and towage bills begin. Remember this when the time comes to fill and test the battery and you are inclined to put the task off till tomorrow.

During prolonged periods of bad weather when equipment is laid up for four or five days at a stretch the motor should be started up in barn or garage and run at a moderate speed for ten or 15 minutes to keep the battery in trim. If a battery equipped motor is to be retired from service for several months or a season, be sure to take the battery to a service station for storage. If this is not done so that proper care will be given a new battery is inevitable when this piece of equipment is used again.

November in the Vegetable Garden

Northern California

By A. R. Gould



WELCOME rains in this section have been most encouraging and will act as a stimulus for the coming season and we have no doubt that we shall be favored with still more before the end of the year. The soil now will be much easier to work and should be trenched very deeply if you desire results from the coming spring crops. Few people realize that the foundation for successful cropping does not rest with the seed or after efforts, but the earlier stages mean everything. The soil must be in good condition and should be carefully studied if you would avoid trouble later on. Do not try to save money on fertilizers, as poor soil will raise nothing, and remember that every time you remove crops from the soil you have removed certain important plant food elements which must be put back, and only farmyard manures or well balanced fertilizers will put this back. To sow seeds in soil which has been impoverished year after year is a waste of time and labor. Stiff, heavy soils especially require lime and this is very helpful to the plots after the vegetation from the crops and other refuse has been dug in. Weeds, bean and pea tops may all be trenched in the plots and will decay.

Beans

The Broad Windsor bean, now the most popular for an early spring crop, sown last month, should be well cultivated between the rows when the soil is wet and heavy. There is still time

to make a sowing of this bean in rows three feet apart.

Lettuce

Thin out and transplant to six inches apart the varieties sown last month.

Beets

Sow Early Egyptian and Detroit Dark Red in rows 18 to 20 inches apart. Seed should be sown very thinly and covered one-fourth inch or so. One ounce will sow a 50 foot row. They thrive in a medium heavy soil which should be fairly rich.

Peas

This is a very important crop and being hardy and easy to grow should be in every garden. Successional sowings will keep the family table supplied with nice fresh peas for several months. This crop dislikes heavily manured soil and this is a point to bear in mind. There are many varieties in the seed list of the tall and dwarf varieties, but we only recommend certain varieties which we know have proved their worth. Among the early types are Little Marvel, Alaska and Laxtonian. Alaska is a tall variety and will need supports, but the other two are dwarf. Later varieties are Alderman and Stratagem. An edible podded pea is Melting Sugar. Dwarf types should be planted 20 inches apart in rows and the tall varieties at least three feet apart.

Onions

They delight in a rich soil. We advised sowing early varieties last month, such as Early Pearl Californian, Red and White Bermuda, in rows 20 inches apart. There is still time to sow these early types and the ground should be well prepared

for the later and main crop varieties. This must be well trenched with manure and the surface soil well pulverized and brought to a fine tilth before any seeds are sown. A heavy dressing with soot and wood ashes will be helpful. We shall deal with main crop varieties next month. Onion sets may be planted this month in rows two feet apart, three to four inches apart in the row. These produce very early onions.

Carrots

Those sown last month will need thinning out to at least four inches apart to allow for development. There is still time to sow French Forcing.

Cabbage

There is still time to secure sturdy plants of these to plant out. Autumn King, Drumhead Savoy or Large Flat Dutch are excellent varieties. Plant 12 inches apart in the rows which should be two feet apart. Chinese cabbage or Wong Bok is very delicious and is useful for table as a salad or boiled as greens. It should be more widely grown. Cultivation the same as for ordinary cabbage.

Radish

Winter varieties of these, sown last month, should now be cultivated with the hoe or cultivator fork through the rows.

Asparagus and Rhubarb

Prepare the ground for planting these two profitable crops. They delight in rich soil which must be well trenched and liberally manured. Old plots of asparagus after three years should be dug up and destroyed, as one and two year old roots yield better, hence new beds should be put in yearly to come in succession.

Strawberries and Raspberries

Planting of these popular berries may continue. The varieties mentioned last month will be found the best for quality and cropping. Mulch the older plots with farmyard manure.

Southern California

By D. F. Reichard



NOVEMBER is clean-up month. Our late rains give us a good chance to get the matured crops harvested and either sold or stored for winter use. Prune the trees and shrubs and clean up all the trash and litter about the place; what cannot be put into the compost pile for leaf mold should be burned. This cleaning up each fall goes a long way toward controlling insect and fungus attacks the following year. Any plants that are badly infected, if easily replaced, should be pulled up by the roots and burned; but if they are permanent plants prune back as much as possible and spray thoroughly with resin wash for scale or insects and Bordeaux mixture if infected with any form of fungus.

Unless your corn was planted late it is dry enough to shell and sack. Squash and pumpkins should be brought in and put under shelter before they are frosted. If it is necessary to pile these be careful not to bruise or scratch them and see that all imperfect ones are thrown out for immediate use or sale, according to their condition. One bad squash or pumpkin will soon infect a large portion of the pile. Sweet potatoes must

(Continued on Page 604.)

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Forty-third Year

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and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

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Saturday, Nov. 6, 1920

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EDITORIALETTES

You wouldn't think it from the Standard, but the great oil company recommends that we all get busy and readjust carburetors, clean up spark plugs and save our gas; we are going to need it. The circular sent out by the Standard people suggests: "It is safe to say that 25 to 30 per cent greater mileage could be obtained on the average of all cars tested with a little intelligent attention to the carburetor adjustment. In the aggregate this would represent an annual saving of from 25 to 30 per cent of the gasoline employed in this country for motor vehicles, no small figure when we consider that there are now in use 7,500,000 automobiles and trucks."

* * *

This is Farmers Marketing Week in Chicago. A committee of seventeen, with advisers from all callings and from all sections of the country, is discussing, particularly, grain marketing. But there will also be talks on centralized cooperative marketing of all kinds. Several Californians are aiding in these discussions.

* * *

Next week will be a full week for California producers at Fresno. Activities really begin on Monday morning when the horticultural commissioners gather. Tuesday morning the state fruit growers open a five day program. Thursday the nurserymen begin to gather and discussions, resolu-

tions and appointment of all kinds of committees will keep producers busy till Saturday. It has been a year since the last convention assembled in Chico, Butte County, the usual spring assembly being omitted this year.

* * *

November is a good time to plant a garden whether of things to eat or things to smell and look at. The soil should be made ready and the winter garden put in. Don't plant potatoes, nor tomatoes, nor beans, nor those things which can hardly be expected to stand even California's crisp bright mornings, but there are plenty of others amongst the hardy ones which will add to comfort and pleasure and likewise to the war savings stamp fund. The Cultivator takes particular pride in its first issue of the month feature, "November in the Vegetable Garden" and "November in the Ornamental Garden." The start in this particular issue is on Page 597.

* * *

Everybody knows about the Red Cross. In fact, everybody is a member, or should be, and whether they have or haven't been during the past year, they should support it during the coming year. The annual membership drive begins next Thursday and continues until Thanksgiving Day. Membership may be had in this wonderful organization for one dollar one year. Make every member of the family a member of the Red Cross. Sign up and make payment at the nearest chapter, application blanks will appear in the next issue of the Cultivator, which may be used to make remittance direct to headquarters at Washington.

WANTED: MONEY!

The whole country is studying finance and credits and asking how we are going to market our crops—studying the question from every angle—but no one in the class has yet volunteered a very explicit answer. The growers have suggested that the banks loosen up; the banks say that the federal reserve holds the key to the situation; the federal reserve and Secretary Houston seem to feel that inflation must stop and that Europe must buy and pay in coin or in credit equivalent to coin. And there another suggestion is made that this country advance cash to financially embarrassed Europe, or, if not the cash, that the credit be guaranteed by our government so that Europe may buy, which would set in motion in this country a stream of currency which will, of itself, solve the whole problem.

There have been a few efforts in a limited way, such as the financing of California cotton growers, but grain, wool and other of the great staple crops are still facing a most embarrassing situation. Presumably European credit will be extended.

However the market letter of the California Alfalfa Growers suggests: "In our opinion we, as well as the other farming interests, are fooling ourselves badly if we expect from the treasury or the banks the help in the way of credit which would be necessary to enable the farmers of the country to carry their different products until they are called for by the current domestic and the solvent export demand in the course of the crop year or later. It is out of the question because neither the treasury nor the reserve bank nor the other banks have it in their power to do this, and even if they could they would not do it, as it would mean further tremendous inflation.

"The secretary of the treasury and the banks are evidently between the devil and the deep sea: They undoubtedly realize the seriousness of the situation of the farming interests, described by them in their recent Washington resolution as 'facing general bankruptcy and ruin unless some immediate remedy is found to relieve the situation'. On the other hand such relief as asked by the farming interests is only possible by further heavy inflation, which is the very thing the banks and all of us would like to get away from."

SPEAKING OF TAXES

We are forever tinkering with our taxes. We dread, we even despise, the tax collector, still we realize that if we are going to be governed we must pay the governors. If we are going to prevent our being governed by brute force of other nations we must tax ourselves to provide a stuffed club which shall convince them that we propose to continue to govern ourselves. Hence the war tax which, notwithstanding our displeasure at its magnitude, must be paid. So we are talking of revision of the federal tax law.

In addition to the holdover war tax we have our own government on our hands, which calls for something like four billions of dollars to carry it through the next 12 months. It was but a few years ago that we were all aghast at the billion dollar congress; today our tastes are even more expensive. So in order to pay interest on some 25 or 30 billions of dollars as the result of the war, and the four billions direct expense, we find there is occasion for real thrift, at least on the part of the "bourgeoisie."

We, the common ones, are trying to escape being the goat, at least the whole goat. Hence, we are holding meetings and discussing taxation and insisting that the burden shall not be entirely lifted from the big incomes and piled upon our shoulders. Of course it would be comparatively easy to pile the whole burden on the farmer or, possibly, the consumer, but the consumer and the farmer are in a rebellious mood and both are demanding that the "sales tax idea" be dropped.

A committee appointed at the Second National Industrial Conference in New York recommends the repeal of the excess profits tax, which will reduce the revenues by something over 900 million dollars. Other corrections are suggested, and to meet these deficits it is proposed by the committee to increase the corporation tax to 16 per cent, to quadruple stamp tax rates, to increase again the first class postage rate to three cents and to levy other burdens on cigarettes, tobacco, musical instruments, candy, chewing gum, cosmetics, gasoline, sugar, tea, coffee, etc.

Regarding the accomplishment of this conference the American Farm Bureau Federation reports: "While this report is only tentative, and will not be formally acted upon by the National Industrial Conference for several weeks, it shows the way the lines are being laid for tax revision. Farmers have won a great victory in securing the condemnation of the sales tax and the Nolan bill by the conference. They can no doubt endorse most of the proposed new taxes, although the wisdom of a federal tax on automobiles and gasoline is very doubtful. The farmer uses his automobile and burns gasoline mainly for business purposes, and the proposed tax will be a tax on two necessary factors in food production."



A Great Convention of Experienced Horticulturists Fresno, November 11, 12, 13, 1920

At every session the men and women who grow, prepare and market \$200,000,000 worth of orchard, seed, florist and nursery products in California annually will present and exploit the best thought and practice of an enlightened horticultural development; there will not be a dull session nor a discussion that will not bristle with facts based on the experience and observation of the people who know.

Here are the basic topics to be covered by each session:

Thursday Forenoon, November 11

A GENERAL SURVEY OF HORTICULTURE

By the Twelve Standing Committees composed of recognized horticulturists in the California Association of Nurseriesmen.

Thursday Afternoon

FACTORS OF TODAY IN FRUIT CULTURE

A symposium of addresses by Fruit Growers, Capners, Shippers and Nurserymen.

Thursday Evening

SIDE LIGHTS ON PLANTING PROBLEMS

Embracing a retrospective glance at the Nursery Industry, Problems in Citrus Culture, and Kindred Subjects.

Friday Forenoon, November 12

A PLEA FOR THE BEAUTIFUL IN PLANT LIFE

A series of addresses on Ornamental Horticulture and its importance and value to California's development and progress.

Friday Afternoon

BUD SELECTION: A PIVOTAL MOVEMENT

A series of addresses by some of the foremost fruit growers, horticultural authorities and fruit tree nurserymen; a subject that is nothing less than revolutionary in its economic tendencies.

Friday Evening—Ladies Night

THE HOME AND THE CITY BEAUTIFUL

A session given over to the ladies of Fresno, who have generously provided a rare program (interspersed with musical numbers) covering a wide range of subjects dealing with public parks and private gardens, including a moving picture story of the California Nursery Industry.

Everybody interested is cordially invited to attend all the sessions.

A complete list of speakers and their subjects will be found in another portion of this paper.

Owing to the heavy travel at this season of the year, visitors should make room reservations in advance through Wm. T. Kirkman, Jr., Tulare and O Streets, Fresno, Calif.

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THROUGHOUT agricultural America today there is many a farmer who can make a report similar to the one given above, regarding the all-round utility and value of a truck on Goodyear Cord Tires.

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Have tried the One Man Kirstin Stump Puller and it works fine. My little boy 10 years old can pull a good size tree with it. F. G. Fule, Aberdeen, Md.

My pine stumps are sold in the ground, and average about one and a half to four feet across the top, but the LITTLE KIRSTIN takes them all out fine.—Mr. R. J. Stoltz, Washburn, Wis.

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The Citrus Experiments at Riverside Experiment Station

By R. R. Snowden



THESE experiments were conducted for scientific purposes, and they have served that object well; but as showing the results of the rational use of the several fertilizer materials they mean nothing.

From the growers' standpoint they show, not the use, but the abuse of these.

The agricultural department of the state emphasizes, and every orchardist realizes the indispensable necessity of continued addition of organic matter to the citrus orchard soils for the preservation of normal conditions for tree growth and fruiting. The groves quickly deteriorate when this practice is neglected.

Through the lack of organic matter and depletion of lime in some of these plots the soil has become so baked that it can be detected by merely walking over it. This alone is enough to have ruined the trees.

The demand for lime by citrus trees is so imperative that the extensive use of this material since ten years ago has revolutionized the stability of the citrus groves of the state. About that time mottle-leaf prevailed to such an alarming extent and the failure of the groves to produce fruit was so marked that a conference of the growers was called to discuss the situation.

The Covina Argus of October 15, 1910, has this to say on the subject: "From reliable sources we find that Covina has 1,000 acres of trees in bearing that are not producing one box to the tree on an average. This is not guesswork. These are facts." And suggests that Covina was no worse off in this respect than other citrus districts.

The deficiency of available lime in the orchard soils was discovered to be an adequate cause for the decline of the groves. Now the groves are generally thrifty and little is heard of mottle-leaf or general decadence of the groves. Mottle-leaf has long been recognized as due, among other causes, to a shortage of nitrogen, yet lime has cured most of it by enabling the trees to make use of the nitrogen already present or being supplied. Had lime and organic matter been adequately provided for the trees in the nitrate plot, the results would doubtless have been very different from what they are.

No new plant cells can be produced without lime, therefore growth and fruitage were checked when the supply of available lime—naturally low in this soil—became practically exhausted.

The use of nitrogen by the trees is restricted by lack of lime, hence the trees failed for lack of nitrogen even in the presence of abundance of this element, just as Hilgard pointed out that plants suffer from drouth even when growing in the wettest soils when factors are present preventing the absorption of the water.

When the nitrate of soda was added year after year in excessive quantities which would not be used by the trees, what could be expected but its accumulation?

The available lime has been reduced in the first three feet of the soil of the nitrate plot which contained most of the roots, to .0025 per cent, while organic matter must in 12 years without renewal have become entirely destroyed. The trees on the blood plot are also in a bad condition because, while blood is a more or less complete fertilizer, it does not supply sufficient organic matter. The manure plot contains the best trees of all, simply because manure is a complete fertilizer plus the necessary organic matter. In the sodium nitrate plot there is no trace of black alkali. There has been no increase of sulphates. Bicarbonate has increased to but a limited extent. The only marked accumulation is of nitrate of soda, which has been added year after year long after the trees could use it. It naturally accumulated. Any other material added would have accumulated under such circumstances. It is well known that citrus trees can be actually killed with super or acid phosphate or any other

fertilizer material, excepting none

Here is proof that nitrate of soda does not injure citrus trees when properly used. The appended photographs show fine orange and lemon trees that have received more nitrate of soda than those in the Riverside plot. The photo No. 1 shows lemon trees that have received 9,200 pounds of nitrate of soda per acre and are still thrifty and bearing much fine fruit. Yet Loughridge regards the lemon as the least tolerant of all the fruit trees. The photo No. 2 shows orange trees in Kenneth MacRae's grove at Rialto, that have received



Lemon and Orange Trees Showing Results at Riverside Experiment Station

The upper is photo No. 1 and the lower is photo No. 2 referred to in Dr. Snowden's article.

8,400 pounds of nitrate of soda per acre and are still thrifty and bearing good crops of the finest fruit in that district. The nitrate of soda has been used on the plots in the Riverside experiment in violation of every principle and requirement of correct agricultural practice, and nothing but most pronounced failure could be expected.

The rational method of procedure would have been to supply everything needed, then check such a combination with a particular plant food element against the same combination without such element and note the difference in results. This would have given each tested material a fair chance against every other and would have resulted in positive, practical benefit to the grower.

RAISIN COMPANY APPOINTS NEW SALES MANAGER

The directors of the Associated Raisin Company have announced the appointment of Stanley Q. Brady to succeed Holgate Thomas as sales manager. Mr. Brady, who is at present in Chicago, has been Western sales manager for Thomas H. Lipton and will begin his new duties about November 15 in order to familiarize himself with the work before Mr. Thomas leaves about the first of the year.

Rains did considerable damage to rice fields in Glenn and Colusa Counties, with the wind leveling and tugging the heavier growth so it cannot be harvested except by hand reaping.

Report of Deciduous Spraying Plots

Under Direction of H. J. Ryan, L. A. Co. Hort. Com.

Many deciduous growers during this past season had their fruit turned down by canneries, and some of them were at a loss to know why it was not accepted. Members of the farm adviser's staff were called on by various deciduous growers to determine what were the specific causes of the poor condition of the fruit. In a survey made of the fruit orchards of Los Angeles County it was found that a great deal of the fruit turned down by canneries was marred by scab and other fungi. It was also observed that those orchards which were sprayed properly produced clean fruit.

In order to call to the attention of deciduous growers the importance of spraying to protect against fungi attacks, such as bud blight, shot hole, curly leaf and scab, several spraying demonstrations were given by the farm adviser for Los Angeles County in cooperation with two spraying machine companies and two companies supplying lime-sulphur, under the auspices of the farm bureau. The first series was given during December and the second during February, just while the buds were swelling. Lime-sulphur in the proportions of 10 to 1 was used as the spray material.

To show what spraying will accomplish towards keeping trees healthy and the fruit clean, a summary of the results of the different plots is given as follows:

Owensmouth, place of J. C. Craig. A peach orchard was sprayed in December, 1919, one row unsprayed as a check. A second spraying was given in February, 1920. Results: The row left unsprayed had a severe attack of curly leaf, causing the trees to become weakened and the fruit not up to standard. The sprayed trees had no curly leaf and the fruit was clean.

Van Nuys, place of W. F. Clark. Eight apricot trees were sprayed in December and a second spraying was given in February. Results: The fruit was free from scab and the leaves showed but little shot hole fungus in comparison with the unsprayed orchard.

Van Nuys, place of C. W. Potter. Eight peach and one apricot trees were sprayed in December and a second spraying was given in February while buds were swelling. Results: Apricots were cleaner and freer from shot hole scabbing where sprayed. The peach trees sprayed were free from curly leaf, while those unsprayed that were of a susceptible variety were badly attacked.

Lankershim, place of Chas. Osborne. One row of peach trees was sprayed in December and a second spraying was given in February. Results: The sprayed trees had comparatively clean fruit, while the unsprayed trees were severely attacked by scab. Bud blight was much less severe on the sprayed trees. It happened that the sprayed row and the row next to it were of a variety which is not very susceptible to curly leaf disease, so the plot did not demonstrate the effectiveness of spraying to control curly leaf disease.

Burbank, place of G. D. Radcliff. Two rows of peach trees were sprayed in December and the entire orchard was sprayed in February of 1920. The unsprayed orchards surrounding this orchard served as checks. The sprayed trees had very clean fruit while the near by orchards had scabbed fruit.

These plots demonstrated clearly that spraying deciduous trees is a paying investment. Those orchards which were sprayed at the right times also produced clean fruit which canneries paid good prices for. Fruit growers must recognize the fact that canneries in the future will demand good clean fruit, and the only prevention of the attack of various fungus diseases is by spraying.

In order to again call to the attention of deciduous fruit growers the specific diseases that can be controlled by spraying and to demonstrate meth-

ods of applying spray materials, several field meetings will be held by the farm bureau in conjunction with commercial concerns who will supply the equipment and material needed, during the early winter and spring months. Publicity will be given by the local papers and post card notices will be sent to all farm bureau members of those centers where the demonstrations will be given, announcing the time and place of meetings.

UNIVERSITY FRUIT SHOW

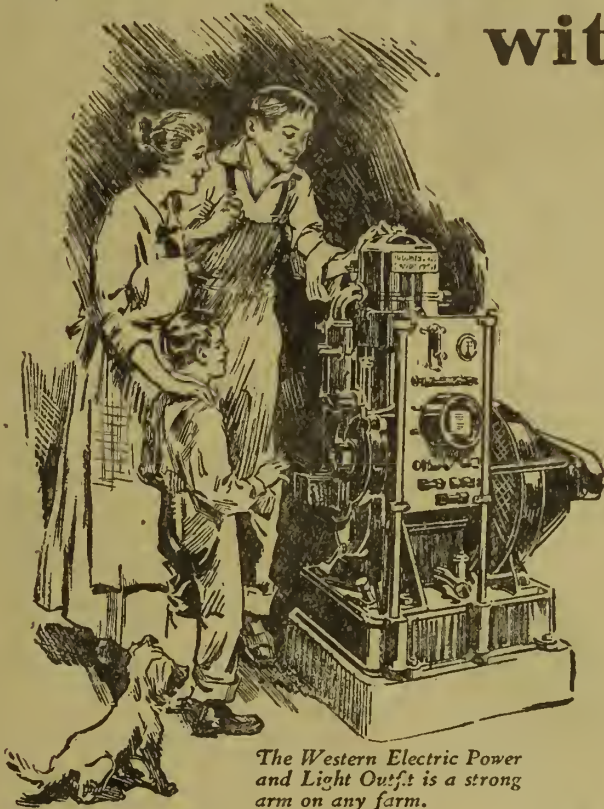
Not only are the farmers of our own state sending specimens to the division of pomology of the college of agriculture to be used in the fruit show that is to be held at Berkeley in November, but many Eastern farmers have signified their intention of having some of their fruit on exhibit. Among the outside states from which fruit will be had are New York, Michigan, South Carolina and West Virginia.

The way the fruit has been coming in for the past two weeks indicates that the show will be a success. Nevertheless it is earnestly hoped that ad-

ditional collections of plates can be obtained from other growers. Fruit for exhibition purposes can be sent postpaid any time before November 15, addressed Division of Pomology, Berkeley, California. It will be given the best of care by being placed in cold storage until the date of the show.

An interesting feature will be exhibits of fruits and vegetables dried under different conditions. The quality and color of fruits sun dried and dehydrated will be clearly shown, as a very complete collection will be on hand. There will also be an exhibit of by-products.

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B. B. Griesemer

Editor's Note: Mr. Griesemer is a farmer near Griesemerville, Berks County, Pa.

MAYBE you have done better in getting farmhands to work for you than I could. In recent years I've been a sort of a farmhand and chore boy rolled into one. I was so busy milking cows, grinding feed and pumping water that I couldn't get through all my work in the field.

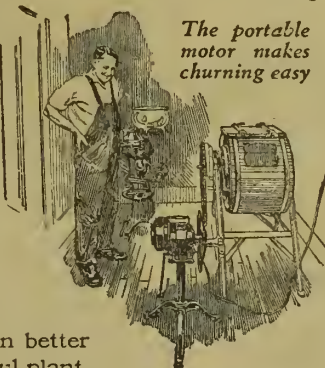
"Not long ago I began to notice the good work done by an electric farm plant belonging to one of my neighbors. It gave all the light needed, but what I liked even better was that it was a powerful plant, built with the idea of doing a man's work.

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grindstone. I tell you, that engine can handle a lot of work. The powerful battery gives all the light needed, and it runs my wife's washing machine and pumps the water.

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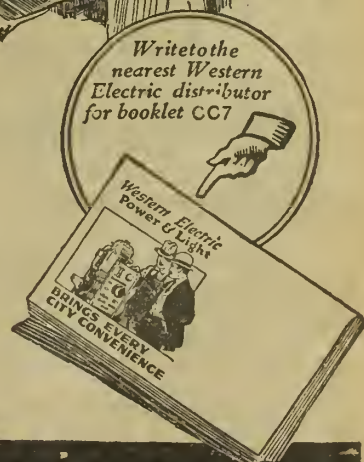
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CONVENTION WEEK PROGRAM

(Continued from Page 595.)

Wednesday Forenoon—Shipping Point and Terminal Market Inspection Service, O. W. Schleussner. Discussion by F. W. Read.

Commercial Value of Standardization, J. C. Whitten. Discussion by George P. Weldon.

Factors in Vegetable Marketing, Thos. O'Neill. Discussion by L. M. Spiegel.

Problems Confronting the Canning Industry, Charles M. Bentley.

Wednesday Afternoon—The State Government's Responsibility to Agriculture, Col. John S. Chambers.

Marketing California Deciduous Fruits Under Increased Freight Rates, W. D. Bennett.

Prospective Freight Service for California Perishables, Wm. S. Sproule. Discussion by Charles B. Bills.

Transportation Suggestions to the Railroads, Charles E. Virden. Discussion by A. B. Humphrey.

Thursday Forenoon—Important Phases of Crop Statistics, E. E. Kaufman. Discussion by R. G. Risser.

Freight Rates and a Protective Tariff, C. C. Teague.

Advertising as a Stimulus in Marketing of California Products, H. J. Eustace.

Thursday Afternoon—Work of Agricultural Legislative Committee, C. C. Teague.

Some of Our Legislative Needs, G. W. Pierce. Discussion by Frank T. Swett.

Report of Resolutions Committee.

Thursday Evening—Banquet, Wylie M. Giffen, toastmaster. Governor Wm. D. Stephens, E. O. McCormick, H. P. Anwalt, Ellis Purlee, speakers.

Friday Forenoon—Sun Drying vs. Evaporation, P. F. Nichols.

Rain Damage Insurance, W. V. Cruess.

Prevention and Control of Insects in Dried Fruits, E. R. de Ong.

A Successful Cooperative Evaporator, Burie J. Jones.

Friday Afternoon—Relation of Fruit By-Products to Horticulture, Frank T. Swett.

Evaporator Efficiency, A. W. Christie.

Drying of Prunes in Oregon, Ray Powers.

The Nurserymen

The Nurserymen's Convention begins Thursday morning at nine o'clock with call to order by President Bergholdt, welcome by Mayor Toomey, response by Ernest Braunton, president's annual address and report of the treasurer.

Thursday Afternoon—Resistant Stocks as a Factor in Pear Blight Control, A. L. Wisker.

The Raisin, Table and Wine Grape, Wylie M. Giffen.

Future of Canning Fruit in California, Kay Belew.

California Commercial Horticulture, Charles E. Virden.

Why Not Grow Root Stocks in U. S., George C. Roeding.

Fruits That Pay and Some That Don't, J. W. Barnicott.

Thursday Evening—Today's Problems in Citrus Culture, James Mills Jr.

Peach and Fig Planting in 1921, J. F. Niswander.

Past-Present Honest Nurserymen, Harry Stabler.

California Nurserymen of the Fifth and Sixth Decades, Prof. E. J. Wickson.

Three in One: Orchardist, Nurseryman and Commissioner, Frank T. Swett.

Friday Forenoon—Future of the Rose as a Standard, Fred H. Howard.

Fifty Thousand Orchard Homes Without an Ornamental Plant, Donald McLaren.

Growing Plants Formerly Imported, Roy F. Wilcox.

California Commercial Bulb Culture, Harold A. Hyde.

Standardizing Nursery Inspection, R. H. Taylor.

California New Plant Introductions, Ernest Braunton.

Friday Afternoon—Joint meeting State Fruit Growers, Fruit Canners, Driers, Fresh Fruit Shippers and Nurserymen.

Some Convention Topics, George H. Hecke.

Nurserymen's Bud Selection Association, Max J. Crow.

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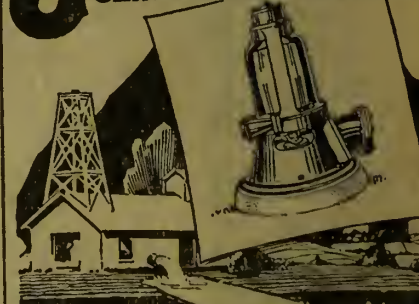
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Factors for Nurserymen to Consider, Prof. J. C. Whitten.

Is Bud Selection Worth While? J. H. Bonesteel.

An Opportunity for Nurserymen, Fred Roullard.

Fruit Bud Selection, Wm. T. Kirkman, Jr.

Friday Evening, Ladies Night—In charge of Ladies Auxiliary California Association of Nurserymen.

Parks and Trees as Memorials, Mrs. W. A. Fitzgerald.

Upsetting Theories, Mrs. F. E. Cook.

The Home Garden, Mrs. J. H. Pler-son.

The Garden Hobby, Johannes Reimers.

To Better Serve the Canning Industry, Mrs. H. C. Merritt Jr.

Observations on Farming, Mrs. Robert Hargrove.

A Bigger and Finer California, A. G. Wishon.

Saturday Morning—Unfinished Business, New Business, Reports of Committees, Selection of the 1921 Meeting Place, Election of Officers for 1921.

Fourth Annual Gathering of the Ladies Auxiliary will be in session Thursday, Friday and Saturday.

California Certified Seed Potato Growers

In connection with the Fruit Growers and Farmers Convention will be held the annual meeting of the California Certified Seed Potato Growers. President George H. Peters will preside and J. L. Olson, secretary, will be present. There will be discussion of certified seed potato situation in California, standardization of commercial potato packs and lessons to California growers from Eastern methods. This session will be on Friday, November 12.

State Association of County Horticultural Commissioners

The first convention of the week will be that of the state association of county horticultural commissioners. It will be called to order early Monday morning and another session will be held on Friday, November 12. There will doubtless be other sessions between times, though primarily the sessions of the state convention will be attended. Some of these sessions of the commissioners will be executive.

The state forestry bureau, the state highway commission and the landscape engineering department of the state university are cooperating in plans for systematic tree and shrub planting in harmony with surroundings.

PASADENA FLOWER SHOW

The Pasadena Horticultural Society again added to its already enviable record by staging another grand plant and floral exhibit on October 28-30, covering the same broad range of ornamental and economic plants and fruits as in the past, from acacia flowers and avocados to walnuts and zinnias. Two novelties of merit were shown, a new sword fern, *Nephrolepis Hillsii*, named for its originator, and a penstemon of large size, scarlet with white throat, named "Sierra Madre" by the hybridizer, W. W. Felgate. The attendance from the opening hour was all that was expected. The judging was by experts from various sections of the south, two coming from Santa Barbara, two from Pasadena, and one, a member of the Cultivator staff.



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NOVEMBER VEGETABLE GARDEN FOR SOUTHERN CALIFORNIA

(Continued from Page 597.)

be dug before frost if one wishes to retain their flavor and keeping qualities. If only a small quantity are to be put away, select clean, firm tubers, wrap each one separately in one thickness of newspaper and pack in boxes or pack in dry sand in boxes so that the tubers do not touch each other. To store in large quantities stack in a convenient place alternating layers of dry sand and potatoes, then cover the whole so as to keep the rain out. The important thing about keeping sweet potatoes is to keep them dry.

This is the month to begin planning what you are going to plant next year and where and when it will be planted. On all vacated ground spread a liberal coating of manure to be leached into the soil with the rains. If the rains are too slow coming, irrigation or sprinkling will have to be resorted to. However the moisture is obtained, there should be enough to soak down at least two feet. The ground should be worked to a depth of not less than one foot, so that it will be in condition to take all the moisture that may come to it during the winter.

Cultivate shortly after each rain storm, so that the surface will be thoroughly broken up, thus making a mulch to hold the moisture in the ground.

During these cool months it is not advisable to plant any of the tender summer vegetables such as beans, tomatoes, squash and corn.

Plants from seeds sown at this time do not develop as rapidly as during the warmer months. Plant now for early spring harvest Egyptian beets; carrots, turnips, radishes, early and winter varieties; Wonderful lettuce; prickly spinach; onions, seeds or sets; cabbage and cauliflower plants for winter or the seed for spring; salify and dwarf peas.

Jerusalem artichoke, horseradish, asparagus and rhubarb roots may be set from this time until early spring. In frostless sections potatoes may be planted during this month for early spring potatoes. Seed of egg plant, peppers and tomatoes are started in hot beds or hot houses for young plants to be set in early spring.

All stuff planted during the last few months will need irrigating as long as the rains hold off, and we should watch the young plants that they do not want for moisture.

Southern Arizona

By M. E. Bemis



ARDENING activities for November suffer a curtailment in variety of plantings. Seeds which may be planted and plants which may be transplanted are about the same as those for October, with a few exceptions.

The list includes beets, carrots, lettuce, onion seeds and onion sets, parsley, parsnips, peas, radishes, spinach, turnips, cabbage plants, cauliflower plants, and strawberry plants.

The nights now are getting quite cool; frosts will be common although the warm sunshine of the days will keep the ground from becoming chilled to such an extent as to prevent germination. I find that plantings of lettuce, parsley, radishes and similar seeds germinate now much more quickly than in September. We have a right to expect that such seeds as are recommended for planting in November will germinate and that the plants will make considerable growth during the warm days of winter and be only temporarily set back by the frosts. Of course the rapid growth of early spring is not to be expected, but plants like peas will come up, grow slowly and develop a root growth which will enable them to grow luxuriantly when the days begin to lengthen after Christmas. The varieties for November garden work have been described in previous articles so that a repetition is not necessary.

Strawberries are a somewhat neglected crop for the home garden. Old gardeners and strawberry growers seem well agreed that they do better when put out the latter part of November and through December, rather than in the spring. Probably this is due quite largely to the fact that they acquire a root growth without danger of wilting. The Arizona Ever-bearing has proved the best variety for our Southwestern conditions. Strawberries are grown commercially now almost altogether by Japanese and Chinese gardeners in southern Arizona, but for the home garden where space will permit there is nothing that will repay more largely in satisfaction than a few strawberry plants.

There is a little satisfaction in the fact that in the cooler months, while plants do not make quite so rapid a growth, neither do the weeds. Irrigation is not necessarily as frequent but care should be taken that a crust does not form after the irrigations or after rains, for while the nights are cool the sun is warm enough through the day to bake the soil if it is not broken at just the right time after wetting.

November in the Ornamental Garden

Southern California

By Ernest Branton



NOVEMBER is usually the most active gardening month for the reason that nearly all soil workers wait for rains before attempting serious gardening, and rains usually come early in November. At any rate, preparation should be made without regard to weather. Any seeds, bulbs should be included in this month's list.

Sweet peas sown now give splendid results both in size of bloom and length of stem for they develop best during cool weather. They thrive best in deep rich soil. Some dig three feet deep in preparation, finely pulverize the soil and mix it with a good supply of decomposed animal manures before refilling. Then sow seeds at the bottom of a six-inch trench and as plants grow gradually fill up the trench. That places the roots in cool moist soil.

Get a box of clean sharp sand and propagate hardy perennials for bedding and border. The edging plant, alternanthera, is one of them, and begonias, coleus, fuchsia, heliotrope and marguerite are others easily multiplied at this time. See that sand is clean, not less than four inches deep and of good drainage through box. Do not push cuttings into wet sand or the ends will be bruised and probable decay and failure follow. Make holes

with a stick larger than cuttings or make a slit through sand, along a straight edge with a knife or thin paddle.

Real hardy perennial tops such as penstemons should be cut back heavily to produce a winter flowering growth, but heliotrope, fuchsias and those subject to frost injury are better left until March, also tender vines needing pruning. Mulch pansy and violet beds now for the blooming season is at hand and a cool damp soil is necessary to fine flowers. This is a good season for bedding herbaceous perennials—they will give you winter blooms. Rose bushes are usually sparingly watered during late summer and will spring into active blooming growth under the stimulus of the first heavy rain. Cut away now all small and weak wood and open centers of bushes if growth is so thick as to exclude light and air. Give a heavy top mulch of stable manure and spade this under when spring warmth begins and renew the top dressing to stimulate the spring growth, for flowers will come then in greatest number.

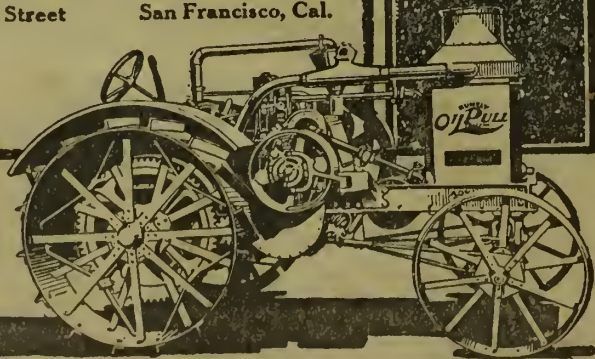
Take up chrysanthemum clumps, if space is needed, and replant temporarily close together so they may later be torn apart for 1921 planting or used as source for cuttings for propagation in sand. Take up clumps of cannas and all of a tropical nature whose tops are at a standstill or have been injured by frost. These should not be replanted until March or April. Nor need they be moved from pres-

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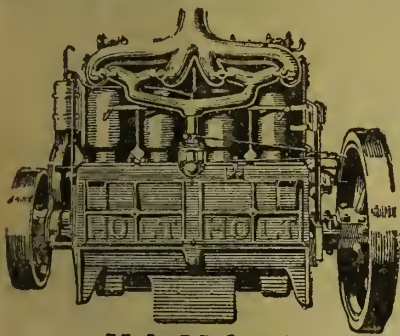
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ent quarters unless the space they occupy is needed; merely cut the tops off. Do not fertilize lawns now except in the warmest location for otherwise blue grass will make a new growth easily killed by a sharp frost. A better reason for not fertilizing is that the winter's rains will wash away or carry below the grass root zone fully 90 per cent of the food value of stable manure. The grass, moreover, does not need more food until making heavy spring growth. Therefore defer feeding until food is necessary and the diluting and destroying rains are nearly over. February is early enough.

Northern California

By A. R. Gould



THE recent early rains, which have been more than encouraging, have started garden operations in the ornamental section, and orders are being placed with the nurseries for all varieties of trees and shrubs, and those who contemplate extensive planting we would advise to prepare their list and get the order in. Go over your garden very carefully and form some idea as to the changes you would like to make. Some shrubs may have died, others may need replacing.

This also applies to roses, and when ordering these see that young stock is secured. Now is an excellent time to get the rose plots in shape and before planting have the ground thoroughly well manured. Lawns may also be renovated and new plantings made this month. When spading in farmyard manure during the preparations trench it well beneath the surface and allow the weeds to come through before sowing any grass seed, and the surface should be well raked.

Now that the winter is coming on the tuberous types of begonias must be dug up and stored from the frost. The same applies to dahlia tubers. It is advisable to label each for color before storing in the cellar. They must be kept dry. All tender varieties of water lilies should be removed from the pools and protected for the winter.

Propagation

Roses, hydrangeas, fuchsias and other ornamentals such as privet, crataegus, etc., may be propagated now in sandy soil. It is necessary that they be inserted firmly in the soil and kept moderately moist. Carnations may also be propagated by layering or cuttings.

The Spring Garden

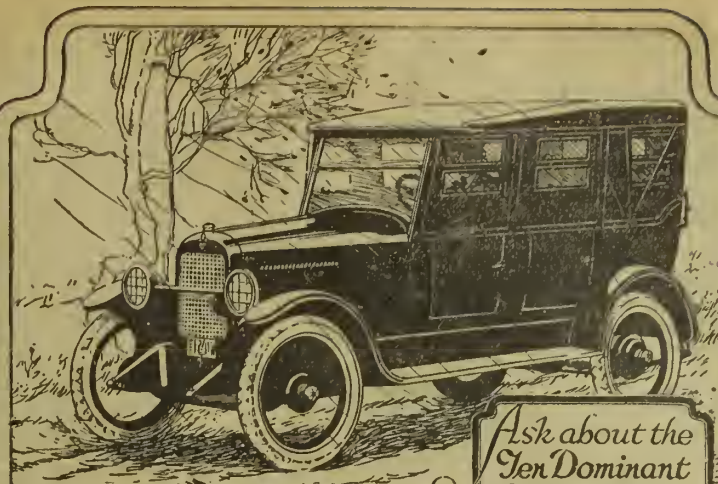
For a display of bloom in early spring we would suggest the following subjects: Crocus, snowdrops, muscari, narcissus, hyacinths, tulips, English daisy, ranunculus, iris, primulas in variety, aubretia, pansy, viola, wallflower, alyssum, saxatile, violets, forget-me-nots and winter flowering stocks. All these should be planted now and they will provide a successional supply of bloom from the early months of the year. For a selection of bulbs such as tulips, etc., see last month's calendar notes. Seeds of our California wild flowers such as the phacelia and nemophila, both charming blue subjects, clarkia, godetia, bartonia, gilia, California poppy, may be sown now and may be scattered broadcast on soil which has been previously cultivated. Nothing is more beautiful than masses of these wild flowers. Nemophila isignis will form a charming blue carpet over the ground.

Hollyhocks and Foxglove

These stately plants are effective planted at the back of a flower border and if sturdy plants are set out this month they will flower early next year. The hollyhock may be had in a number of shades, frilled, single and double.

Early Flowering Gladiolus

The best of this early flowering race are The Bride, Peach Blossom and Ne Plus Ultra. Bulbs of these may be planted in fairly rich soil now.



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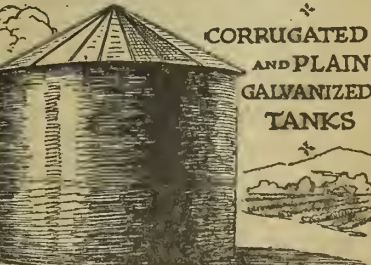
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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Marsh Pasture Land

I have a mountain place where some of the land is very springy the year around, the cattle punch it full of holes when pasturing on it. Would like to seed it to something that would make good pasture and not kill out from tramping.

Wild clover does well there, also timothy and red top. Several have told me to seed it to alsike clover so am asking your advice. If you advise it, what time should it be sown and how? The land is too springy to get on with drill or other implements. It snows about December and lies on until about March or April.—Subscriber, Standish, Lassen County.

The advice to sow alsike clover is good; it thrives most on wet soils. But we believe Paspalum dilatatum will prove superior to all others. The heavy tufts make a sod that will support cattle on land such as you describe. Ten pounds to the acre are usually sown, broadcasted. As it seeds freely you may get a good start by

using half that amount. No objection lies to sowing some alsike clover also. In your case no method is possible except sowing by hand. This should not be done until May or June, though the clover may be sown a month earlier.

Replanting Apricots

I have an old peach orchard with a few scattered two to four year old apricot trees in it and am taking out the trees to plant to vines and alfalfa. Can I transplant these apricot trees? Some of them bore a few 'cots this year and are 12 to 15 feet tall.—Subscriber, Caruthers.

No, we would not endeavor to replant the apricot trees. Nurserymen usually follow the practice of burning deciduous nursery trees rather than holding over and resetting. It is not satisfactory. With nursery trees at present prices the temptation is very strong but we believe the results will justify securing new trees only two years from seed.

Milo Fodder

I have a patch of Milo maize. Would you suggest feeding the stalks to my cow? Someone told me it was too sharp and would cut the stomach and

only the leaves should be cut off and fed.—Subscriber, Oxnard.

We would surely let the cow do her own stripping of leaves and use such of this fodder as she can handle. We never have heard of any injury whatever from cured milo fodder. Freshly cut and without wilting directly from the field might under certain conditions cause poisoning, but with wilting there is no danger, and we believe none from cutting or mechanical injury.

Alfalfa Variety

What variety of alfalfa would you recommend for this section? The common seems to predominate, but the Hairy Peruvian is very popular just now.—Subscriber, Turlock.

Unless your local conditions have proved unsatisfactory to Hairy Peruvian we would plant that in preference to the Chilean or "common" variety. The Hairy Peruvian has shown ability to continue growth later in the fall and give perhaps one more cutting than the ordinary variety.

Seasoning Eucalyptus Lumber

How is eucalyptus wood seasoned so it will not check nor warp out of shape?—Subscriber, Anaheim.

Uneven drying and checking can be largely prevented by careful piling and protecting, so far as possible, from wind and sun. The cross strips at ends should be placed as near to the end of the timbers as possible. Also, pile up lumber on good foundation where it will be perfectly even and cannot warp.

Rotation

How many years must newly plowed up alfalfa land be farmed before it can again be seeded to alfalfa?—Subscriber, Turlock.

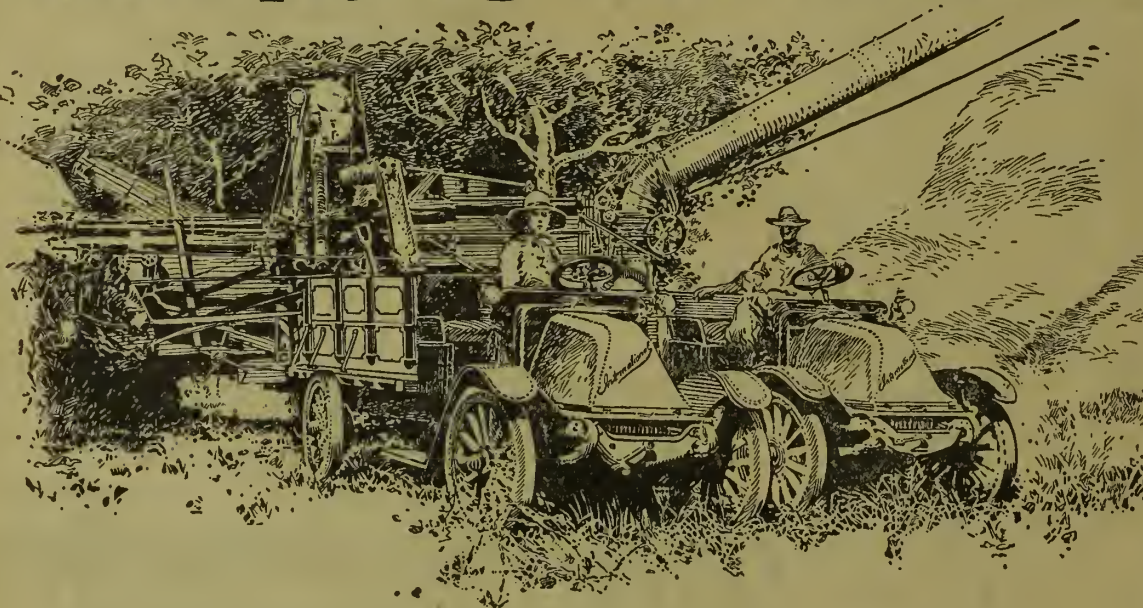
From two or four years, if possible. Alfalfa is one of the best soil builders, but like other clovers has a faculty of making the soil "clover sick." In other words, any crop does better when rotated with an entirely dissimilar crop. Of course we do not know the nature of this particular soil, but from the fact that it is located in Turlock would suggest cantaloupes as first crop in rotation. Sugar beets are excellent and necessitate deep culture, which fits the soil for the next planting of alfalfa. In that section sugar beets may not be so attractive, however, and if the inquirer is a dairyman then mangels or big stock beets would afford the same opportunity and prove wonderfully profitable. Then there are peanuts, which seem to be a coming crop, and also pumpkins, the various green sorghums, wheat and barley, and innumerable other crops which would prove profitable, give the soil a rest and, if thoroughly clean culture is given, afford opportunity to kill out Bermuda and other pests which are liable to be a serious menace to the alfalfa when it is planted again.

Figs Dropping

Will you tell me what is the trouble with my white fig trees. They are healthy and young but always shed the fruit before it is mature or ripe. I have been told to hang a limb from another fig tree in my trees. Would this be of any help and how should it be done? I secured the cuttings from Chico about three or four years ago.—Subscriber.

This is probably a case where the Blastophaga, or fig wasp, has not been introduced, and of course it is too late this season to be of any value. The true Smyrna fig requires pollination, but owing to the peculiar structure of the flowers of the fig, which are all within, the only way to successfully pollinate is to introduce the tiny fig wasp, which breeds in the capri or wild fig brought to this country from Asia Minor, as was the insect. The pollen from this capri answers the purpose of perfectly pollinating the Smyrna. Unless these fig wasps are in the fruit on the branch put in the tree there would be no benefit from it. This pollination should be done in June or July.

Multiplying Farm Hours



THE FARMER who is not properly equipped, has this problem to contend with: getting his farm work done on time and, at the same time, doing necessary hauling that requires labor and horses which cannot well be spared from pressing seasonal work on the farm.

During the days of plentiful, cheap labor, this problem was partly solved by hired help. But today it is being met in an entirely different way—by **International Motor Trucks**.

These efficient hauling units multiply farm hours—save for essential farm work about two-thirds of the time that was formerly spent on the road, in addition to saving the horses for work in the fields.

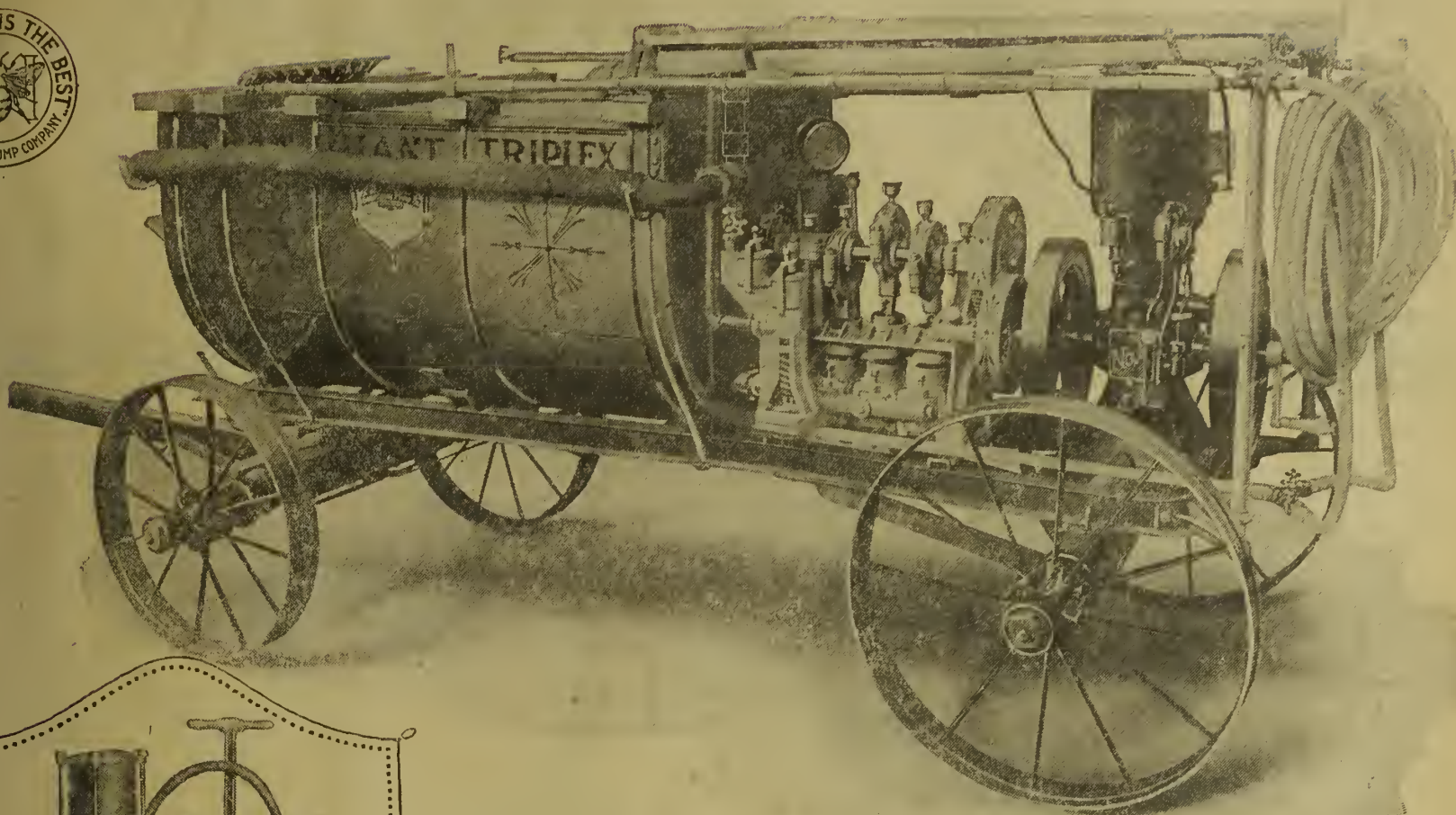
Do you feel the need of more farm hours? Do you begrudge the time that you devote to hauling farm products to town and needed supplies back to the farm? Does the distance between your farm and your local market sometimes seem much too far? Is the working efficiency of your horses impaired by hard trips to town?

Think about this; and while you are thinking, drop a post card to the address below so that we can mail you a pamphlet that will tell you how to multiply your farm hours and simplify your hauling—with an **International Motor Truck**. There is a style of body and a size of truck for every hauling requirement— $\frac{3}{4}$ -ton to $3\frac{1}{2}$ -ton capacities.

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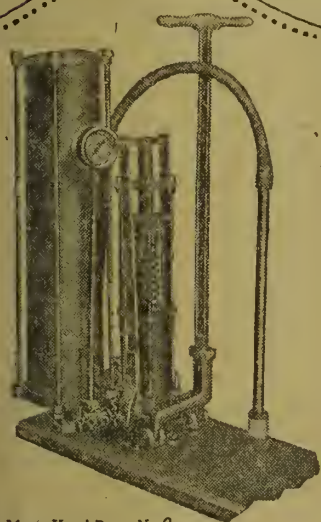
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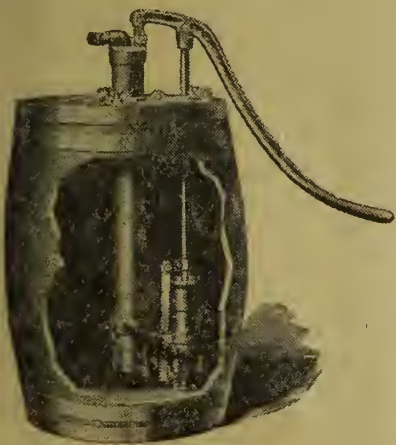
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As been necessary to exercise readjusted. DELCO-light electric light and power readjustment.

Of increased capacity will \$675—the 1¼ kilowatt labor load of your farm, try it.

Farmers of America follows LIGHT for the past five fit the farm for the front, -saving relief.

Higher wages for farm help are established. But present DELCO-LIGHT wages, paid in the form of fuel costs and upkeep, only amount to from 5 to 10 cents per day on the average farm. For this sum, the house and outbuildings equipped with labor-saving devices and also brilliantly lighted have complete service from an individually-owned electric light and power plant.

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You are invited to make a 30-day test on a money-back guarantee before purchasing. Demonstrate for yourself that DELCO-LIGHT operates at a cost of a few cents a day. Any user of DELCO-LIGHT—there are more than 3000 on the Pacific Coast alone—will tell you why he believes the plant will last a lifetime, and it will. It is ready for service on delivery.

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Livestock News Notes

Hollow Hill Farm at Colton is having wonderful luck with Guernsey calves from their show cows this fall. Imp. Cherry III of the Effards, who

was grand champion female at the Southern California fair, recently dropped a fine heifer sired by King of Hollow Hill, the great son of Itchen Daisy's May King of Langwater, whom W. H. Dupee sold last

spring for \$20,000. Fan of Bickleigh, the senior champion at Riverside in 1919, also dropped a heifer by King of Hollow Hill. Princess Selma, the first prize two year old and reserve senior champion at Riverside this year, repeated with a heifer by Effic's King of Hollow Hill Farm, a son of Imp. Cherry III of the Effards. All of these cows combine show type with high production records.

Jim Thorp of Lockeford, who has been at the Southern California shows with his fine herd of Jerseys, took home three spring Duroc gilts from the Diamond Bar Ranch. One was by the great herd boar, Ace of Pathfinders; one was by Mammoth Sensation Junior and the other by Great Pathfinder. Mr. Thorp also bought a spring boar sired by Mammoth Sensation Junior from A. L. Ludwig of Downey. This boar pig was the largest at the Los Angeles show.

Chas. Maurer, the man who is responsible for the great job of fitting and showing A. B. Humphrey's Guern-

seys and Berkshires from the Grape-wild Farm, Escalon, reports the sale of quite a few Berkshires recently, among which were four yearling boars to one purchaser.

William Briggs, senior member of the Hereford breeding firm, William Briggs & Son, Dixon, is now in the East visiting a number of the leading herds. He expects to attend the American Royal Show at Kansas City before he returns.

H. A. Hare of San Francisco was the buyer of the three year old Jersey bull, St. Mawes of Bellevue, consigned to the recent sale at Salem, Oregon for \$1,500.

D. G. Cummins and Son, Visalia, report that their good Duroc-Jersey sow, Golden Sensation, is still running true to form. Last spring this sow raised a litter of 14 pigs, ten of which were gilts. This fall she is raising a litter of 12.

A. Buckland and Son, Fresno, exhibited their Poland Chinas at the recent Chowchilla fair and won first in every class they entered, and most of the championships. Their boar California Jumbo Buster, was senior and grand champion, defeating the Sacramento winner.

M. Fortini, owner of the Tintagel herd of Jerseys that made such a record at the recent state fair, reports that Jewel of Tintagel, last year's junior champion, has recently given birth to a son. Fortini expects to have the young fellow out on the show circuit next year.

R. A. Condee, in charge of livestock, George Junior Republic, Chino, has sold the junior yearling Holstein bull, Republic Korndyke Pontiac, a son of the Los Angeles grand champion, Dichter Spofford Korndyke Lad 5th, to J. W. Welty, El Monte. The dam of this youngster has a two year old record of 501 pounds butter from 14,000 pounds milk.

In the dispersal sale of Holsteins held by E. Peterposten, Modesto, October 20, 36 head made a general average of \$330. Jane De Kol of Linwood topped the sale and was taken by H. A. Stammerjohan, Turlock, for \$1,000.

Prize Guernseys For Sale

A number of the prize winners—male and female—in our show herd are for sale. They combine type with high production.

Hollow-Hill Farm

B. W. Shaper, Mgr.

COLTON, CAL.

RHUBARB WAGNER'S GIANT

—NOW BEST TIME TO PLANT—
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Old style razors honed 50c ea.
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Second Public Sale

Caledonia Farms Shorthorns

West Sacramento, Cal.

Friday, November 12

60 Scotch and Scotch Topped Females and Bulls



IMP. CALEDONIA



GAINFORD MATCHLESS

Why Breed Shorthorns in California?

During the last two years the writer has gone to considerable length to point out the real opportunity that is open to the man in this state who undertakes the production of registered Shorthorns and he is of the firm opinion that under proper conditions there is no more attractive business. Every element necessary to success is present in California. In the first place, our climatic and feed conditions are unexcelled. Secondly, because of the wide importance of the range industry (and it will always be an important business) we at once have a market that will readily absorb vastly more bulls than we are producing even under present demand. Nothing is more certain than that the demand for bulls of better quality will increase as more and more men come to appreciate the real possibilities for increasing the efficiency of their cattle through the use of purebred bulls of the right sort. At the present time hundreds of bulls are bought in the East for the reason that they are not being produced here. Buyers would prefer home bred bulls. The production of more bulls depends upon the establishment of many more units of breeding cows. During the last few years the Shorthorn business has undergone a healthy expansion in this state and we have yet to find a new man who has bought the right sort of cattle and who has handled them along same lines who is not enthusiastic. At the same time the business is sorely undeveloped. The time has passed when it is necessary for buyers to leave this state for Shorthorn cattle suitable for foundation purposes. We now have some of the best herd bulls in the country and their blood is available to all. In view of the above we regard the coming draft sale from the Caledonia Farms' herd to be held on the above date as an opportunity of extreme importance.

What This Sale Offers

The offering that has been selected consists of 30 mature cows, and 20 heifers carrying their first calves. Individually the offering is the right sort and from the standpoint of breeding it is such that buyers can purchase with entire confidence. A glance through the catalog discloses the fact that there are six daughters of Pine Grove Kinz, easily one of the outstanding bulls in the West; eight daughters of Glenbrook's Marquis, one of the greatest sires ever in the West; four daughters of Whitehall Sultan; two by Fond Lavender, three by King of Paicinea—each a grand son of the famous Whitehall Sultan; four by the imported bull, Champion of Scotland and others. In addition to the above the sale offers a chance to add to your herd the blood of the three Caledonia herd bulls, Imp. Caledonia, Gainford Matchless, and Pine Grove Kinz. It is quite within the facts to state that no Western herd has three as valuable herd bulls. For the more critical buyers a few Scotch cows and heifers have been listed. These represent the Victoria, Lustre and Acanthus families. The major portion of the offering consists of tried and proven American sorts that have excellent Scotch tops. The ten bulls are all young fellows. Several are Scotch and all are the right sort. Fifteen of the cows will sell with calves at foot.

The sale will offer a striking demonstration of the real beef qualities of the Shorthorn as the cattle have never tasted grain yet are of great scale and thickness. They have been handled just as any practical cattleman would. Here is a real chance to get a start with Shorthorns and build up a profitable and pleasant business and the future will prove the soundness of all that has been said.

Signed: R. P. ROYCE,
For the California Cultivator.

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of Registered
Shorthorns
is a Sound
Business
Proposition

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California Breeders Sales and Pedigree Company

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Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Lungs, Rheumatism, and all Stiff Joints.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$100.00 paid in doctor's bills."
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Ready for immediate service. Ranging in age from October 24, 1919, to March, 1920. Good, strong, vigorous individuals. Best of blood lines and of present day type. Priced below their value for quick sale. \$75.00 each. Registered, crated and delivered, express paid, to your nearest station.

100—Berkshire Weanling Pigs—100

Special—For the next thirty days we will offer weanling pigs in quantities to suit, for breeders, farmers, or pig clubs. Choice stock, popular breeding, and all in thrifty condition. Priced to sell. Write today for full information. Order from this advertisement. Satisfaction guaranteed.

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Box C Hamilton, Calif.



ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, or Muscles. Stop the lameness and pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone and horse can be used. \$2.50 a bottle at druggists or delivered. Describe your case for special instructions and interesting horse Book 2 R Free. **ABSORBINE, JR.**, the antiseptic liniment for mankind, reduces Strained, Torn Ligaments, Swollen Glands, Veins or Muscles; Heals Cuts, Sores, Ulcers. Allays pain. Price \$1.25 a bottle at dealers or delivered. Book "Evidence" free. W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

Col. W. C. Lookingbill

Expert Livestock Auctioneer

Have now established permanent headquarters at my new U. & I. Union Stockyards, midway between Pomona and Ontario. Can thus command a wider field of rich dairy and swine breeding interests. 25 years' experience buying and selling in the heart of Iowa. For real service write me at

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Put one on your old machine or specify CUSHMAN when you order a new machine.

The CUSHMAN is RELIABLE

Write for Information

CUSHMAN MOTOR WORKS

Stockton Branch

STOCKTON CAL.



Betsy Lamb Prilly

Mr. H. E. Vogel, owner of Westlawn Farms, finds it necessary to reseed most of his alfalfa fields, and for that reason has decided to disperse his entire milking herd of registered Holsteins, selling also a number of bred heifers and a limited number of choice young bulls.

The herd as it stands today is the result of twenty years of constructive breeding, during which production, type, and good health have been maintained in splendid balance in the herd.

In respect to type, this is one of the very greatest herds in the west and visitors on sale day will find an array of young females with straight top lines, splendid udders, and all around type such as can rarely be found in one herd anywhere.

As to production and pedigree, the catalog pages tell a most interesting and satisfactory story that will interest those who appreciate the better sorts of Holsteins.

This herd has been regularly tuberculin tested for many years and has always borne an excellent reputation for good health generally. We believe it to be one of the most satisfactory herds in the state in this respect.

Among the females to be sold are

BETSY LAMB PRILLY, 35.03 lbs. butter from 743.3 lbs. milk in 7 days, grand champion cow at 1919 San Francisco Livestock Show, and she sells heavy with calf to King Aralia Mead, who is by King Mead of Riverside out of the 1161.48 lb. cow Margaret Aralia De Kol.

A DAUGHTER OF KING MEAD OF RIVERSIDE, out of a 24 lb. daughter of Ignaro De Kol that made 762.73 lbs. butter from 18,424.6 lbs. milk in one year.

A 22 POUND GRANDDAUGHTER OF ARLAIA DE KOL, with 717.01 lbs. butter from 16,946.8 lbs. milk in one year as a 3 year old, her dam a 954 lb. yearly record daughter of the 1,085 lb. former world's record milk cow Riverside Sadie De Kol Burke. Her three nearest dams average 1,060 lbs. butter in one year.

A 21 POUND DAUGHTER OF PRINCE GELSCHER WALKER, out of De Kol of Valley Mead 3d, 845.11 lbs. butter in one year.

A YEARLING DAUGHTER of the above cow, sired by Sir Aaggie De Kol Mead, who is by Sir Aaggie De Kol Acme and out of Miss Valley Mead De Kol Walker, dam of the \$12,000 bull King Korndyke Pontiac 20th.

75 REGISTERED HOLSTEINS

OF SUPERB TYPE

At Public Auction

Wednesday, December 1, 1920

WESTLAWN FARMS

Owned by H. E. VOGEL

Fresno, California

A DAUGHTER of Colantha Alcartra Fayne, 33 lb. grand-son of Colantha Johanna Lad, with 25.68 lbs. butter from 501.4 lbs. milk in 7 days as a junior 3 year old.

A 28.36 POUND DAUGHTER of Dutchland Hengerveld Sir Glad, in calf to a son of Betsy Lamb Prilly.

A 21 POUND GRANDDAUGHTER OF KING OF THE PONTIACS, heavy with calf to King Aralia Mead.

MANY OTHER COWS AND HEIFERS with official records up to over 24 pounds butter in 7 days, some now on yearly test, and all of breeding age in calf to the great Westlawn Farms herd sires.

EVERY ANIMAL POSITIVELY GUARANTEED TO BE A BREEDER; EVERY ANIMAL TUBERCULIN TESTED AND SOLD SUBJECT TO RETEST BY THE BUYER.

Catalog free on request.
Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneers:

Col. Ben A. Rhoades, Los Angeles Col. Geo. W. Bell, Tulare

DISPERSAL SALE

45 Registered Holsteins

25 Grade Holstein Cows and Heifers

60 Head Feeder Hogs

One Fine Team Horses

Small Ranch, Fresno, Cal.

Tuesday, November 16, 1920

The owners have decided to plant their ranch to vineyard and will make a complete dispersal of their dairy herd.

The foundation of this herd was purchased in the Stevens Bros. dispersal sale at Liverpool, New York, and contains animals of most substantial breeding, including a great young cow with an official record of over 26 lbs. butter in 7 days as a 3 year old.

The herd sire is IT SNOWBALL, a son of It out of a 24 lb. 4 year old daughter of King of the Pontiacs, and the sale list includes 17 of his young daughters.

Among other choice things in the offering are:

A DAUGHTER of the 31 lb. son of King of the Pontiacs, King Pontiac Diona Pietertje.

FIVE DAUGHTERS of the 32 lb. bull King Pontiac Pietertje De Kol.

A DAUGHTER of King Pontiac Ormsby Pietertje, who is by King Korndyke Hengerveld Ormsby out of a 27 lb. daughter of King of the Pontiacs.

PLEASE NOTE—The necessity for getting these cattle off the land in order to prepare for the vineyard this fall does not give us time to prepare the usual catalog. We will have ready by sale day a list showing the breeding of the various animals, and an extended pedigree of each animal will be furnished the buyer.

These cattle will be presented in ordinary working condition, every registered animal guaranteed to be a breeder, but no tuberculin test certificates will be furnished as the herd has never been tested.

THE 60 HOGS range in weight from 80 to 180 pounds, and are a good bunch for feeding purposes.

THE GRADE COWS AND HEIFERS include 13 cows, 5 two year old heifers, and 7 head of heifers from six months to one year old.

SALE BEGINS AT 10 A. M. on above date, on the Small Ranch, about 12 miles southwest of Fresno, 3 miles north of Caruthers, on Dinuba Avenue, between Marks and Valentine.

Owners: **SMALL & DAVENPORT**, Fresno, Cal.

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif.

Auctioneer—Col. Ben A. Rhoades, Los Angeles.

60 REGISTERED HOLSTEINS

Fourth Tulare Sale

Sales Pavilion, Tulare, Cal.

Thursday, December 2, 1920

There are not many surplus registered Holstein females for sale in the vicinity of Tulare County, and this offering will fill a real need in helping to meet the excellent local demand, as well as to furnish buyers from a distance an opportunity to secure well bred young breeding females.

Contributors to sale:

Gotshall & Magruder, Ripon.
Alex Whaley, Tulare.
R. C. Sturgeon, Tulare.
H. E. Spires, Caruthers.

F. S. Borrer & Son, Tipton.
Harry Hill & Son, Riverdale.
Peter Lowson, Tulare.
E. D. Barry, Jr., Daggett.

Females of excellent breeding and good type, mostly bred to high record bulls, will feature the sale, including

SPLENDID YEARLY RECORD COWS!
DAUGHTERS OF YEARLY RECORD COWS!
HEIFERS AND COWS IN CALF TO SOME OF CALIFORNIA'S BEST SIRES!

Watch for details of individuals in following issues, but write for catalog now.

Every animal positively guaranteed to be a breeder; every animal over six months old tuberculin tested and sold subject to retest by the buyer.

Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Calif.

Auctioneers: Col. Ben A. Rhoades; Col. Geo. W. Bell

CALIFORNIA BUTTER AND CHEESE SCORING CONTEST

By G. D. Turnbow, Assistant Professor of Dairy Industry

The second scoring of the 1920 California Educational Butter and Cheese Scoring Contest, conducted by the dairy industry division, university farm, was held at Makins Produce Company, San Francisco, on October 1.

The samples of butter and one of cheese were entered for scoring. G. J. Harris of San Francisco, S. L. Denning of Oakland and G. D. Turnbow of Davis were the judges.

F. Simonsen of the Northern California Milk Producers Association, Sacramento, received 93½, the highest commercial score awarded. Mr. Simonsen also received a composition score of 100, giving him a total average score of 96.63; this was the highest average score awarded. A. Wirz of

Hollister Creamery Company, Hollister, received 92½, the second highest commercial score. The second highest average score was awarded G. R. Jaehnig, university farm, who received a commercial score of 92 and a composition score of 100, giving him an average score of 96. O. A. Ghiggioli, university farm, received a score of 91 on cheddar cheese.

Following is a list of the commercial scores as awarded exhibitors receiving an average score of 95 or above:

F. Simonsen, N. C. M. P. Association, 93½; Bodega Cooperative Creamery, 91; Julian Series, Scotts Dairy Co., 90½; Salinas Creamery Co., 91½; G. R. Jaehnig, university farm, 92; Fred Deter, Montague Creamery, 91½; A. Wirz, Hollister Creamery Co., 92½.

Cheddar Cheese

O. A. Ghiggioli, university farm, 91. Quality of Butter

The entries of butter as a whole were of a poor quality. The average commercial score of the ten samples was 91.52. Several samples were criticized for having an unclear flavor and some showed that old cream had been used. Neutralizer flavors were scarce. A marked increase in the efficiency of the buttermaker was shown, the average composition score being 96.65, with six out of ten entries receiving a perfect score on composition. This is a far better record than has been shown in any previous scoring contest. A good many of the buttermakers are overworking their butter and received a cut on greasiness in the body of their butter.

The next scoring contest will be held at the dairy industry division, Davis, on November 4, in connection with the buttermakers short course and the fourth annual meeting of the California Butter, Cheese and Ice Cream Makers Association. There will be prominent speakers on the program, scoring contests for buttermakers and liberal prizes offered for buttermakers and cheesemakers. This will be the last scoring of the 1920 contest, and every buttermaker and cheesemaker should be on hand at this time, as every effort will be put forth to make this the most successful event of the year.

We believe that most of the free markets in the towns of California have been discontinued. We regret this but it seems to be a law of trade that it is the farmer's province to produce and the dealer's to handle the product and deliver it to the consumer. Hence the necessity for cooperation and the employment by the farmer of the dealer.

WESTERN CATTLEMEN PLAN DECEMBER MEETING



THE call sent out by the California Cattlemen's Association suggesting a conference of stockmen from the 12 Western states has received widespread approval. Opinion seems to be unanimous that Salt Lake City is the logical place for the meeting and the only remaining question is that of date. It is now proposed that the conference be held on December 6, 7 and 8. The annual meeting of the United Stockmen's Association for Federal Control of Public Grazing Lands will be held at that time, and it is probable that the meetings will be combined.

This is the most important movement of recent years toward solution of the marketing, financial and legislative troubles that beset cattle growers and that have become especially acute this year.

In its call suggesting the conference the California Cattlemen's Association proposed that definite plans be worked out for handling the seasonal surplus supplies of cattle from each state, for securing federal financial aid and for withholding half fat cattle and feeders from prime cattle markets.

The call was sent to cattlemen's associations in Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Washington, Wyoming and Utah.

JERSEY SALE

A very interesting public sale of registered Jersey cows was that made by Grant A. Brown at Clearwater on Friday, October 22. The offering from Mr. Brown's Eastmont herd at El Monte consisted of 17 cows, one heifer and a few bull calves, the latter selling separately from dams. All heifers sired by the Eastmont herd bull, Lady's Shylock's Financier, are reserved by Brown for foundation blood.

The sale crowd was one of the best assembled at the Rhoades & Rhoades sales headquarters in many months, there being about 30 ladies in attendance.

The selling was snappy from start to finish. An average of \$260 was realized on the entire lot, with no outstanding high price for the day.

A detailed statement of sales follows:

1. Nancy's Miss Raleigh, F. M. West, Fullerton, \$175.
2. Raleigh's Golden Lois, F. W. West, Fullerton, \$155.
3. Conquest's Nellie, J. R. Carhart, Fullerton, \$390.
4. Golden Grey Mist, W. E. De Sombre, Anaheim, \$250.
5. Marquis Golden Lou, J. W. Gaines, Hynes, \$200.
6. Olga's Irmalia Atta, M. O. Sullivan, Chino, \$230.
7. Gene of Willowood, Aaron Miller Whittier, \$410.
8. Dot of Willowood 2d, Ray Case, Lamanda Park, \$155.
9. Lottie of Willowood, L. E. West, Gardena, \$400.
10. Neoma of Willowood, J. W. Gaines, \$290.
11. Fawn of Willowood, James H. Scott, Los Angeles, \$275.
12. Irmalia of Willowood, L. A. Easton, Anaheim, \$200.
13. Jennie of Willowood, A. R. McIntosh, Compton, \$200.
14. Gertie of Willowood, F. M. West, \$410.
15. Alga's Golden Queen, C. Wiman, \$300.
16. Rioter's Golden Gladys, Ed Jennings, Covina, \$125.
17. June's Golden Girl, Fred Gale, Alhambra, \$240.

Guy H. Miller is a careful breeder of Jerseys, of Jerseys that are not only true in form but true producers. He writes:

"I wish to report the Register of Merit test of the Jersey heifer, Vega of Venadera, recently completed. Vega began test at 26 months of age. For the year she gave 6,123 pounds of milk with an average test of 5.83 per cent fat, making 356 pounds of butter fat. Vega was fed and milked but twice daily and ran with herd throughout the year. Vega was sired by our former herd sire, Altama Interest, and is his fourteenth daughter to enter the Register of Merit. Her dam is Beatrice of Venadera, one of the six Register of Merit daughters of Margery Goldens Fox."

NOW READY TO SHIP DRIED BEET PULP

Palatable succulent vegetable feed for dairy cows, beef cattle, sheep and hogs

We can take care of orders from any part of the country

The Larrowe Milling Company
Detroit, Mich. Los Angeles, Calif.

62---Registered Hereford Females---62

At Public Auction

Thursday, November 18, 1920

Finnell Stock Farm Company has on its ranch over 180 head of registered Herefords, representing the entire herd purchased from Kiesel Land & Stock Co. in Oregon, some months ago. This is a larger herd than the ranch will accommodate at present, and this sale is made to reduce the herd to proper size.

This is in no sense a sale of the tail ends, in fact the owners have kept out of the sale list entirely all animals about which there might be a reasonable doubt, or that are badly out of condition, of which there were only a few in the entire herd.

The herd is headed by BEAU BLANCHARD 37TH, a son of the famous Beau Blanchard, and by SIR THOMAS, a proven breeding bull. Both of these sires will be represented in the sale by groups of excellent daughters, and all females in calf carry their services.

Out of the 62 lots of females, 43 WERE BORN IN 1917 OR LATER, the balance in 1913 or later, comprising a most useful herd of young females of substantial breeding and individual merit. Among them are

- 16 COWS WITH CALVES AT FOOT
- 25 BRED COWS AND HEIFERS
- 21 OPEN HEIFERS OF BREEDING AGE

These cattle have been raised strictly under range conditions, are in good thrifty condition, and present an unusually attractive opportunity for investment either for beginners or established breeders as young, clean brood material.

Every animal sold as a single lot guaranteed to be a breeder; every animal tuberculin tested and individual certificates furnished.

FINNELL STOCK FARM, is what was formerly the Henderson Ranch, about 9 miles east and slightly south of Galt, about 35 miles southeast of Sacramento.

Owners:

Finnell Stock Farm Company
Galt (Sacramento County) California

Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. John A. Davis, Manteca

Special Notice

The owners have on hand 28 yearling and 2 year old bulls suitable for range service. None of these will appear in the public sale but may be bargained for at private treaty now or on sale day.

SMALL INVESTMENT IN HEREFORDS BRINGS GOOD RETURNS

The small farmer is too often led to believe that the breeding of pure bred cattle presents too many difficulties and too large an outlay of capital for him to attempt to do anything with. He has heard and read of the long prices paid for breeding stock, the expense connected with advertising and public sales, until he has put away the idea of ever getting into the business, labeling it a rich man's game.

"It is unfortunate that so many of our small farmers have been so led to believe," says R. J. Kinzer, secretary of the American Hereford Breeders Association, "for many would make successful breeders. In fact, there are many instances where this is the case. The trouble is we have heard more of the big men in the business who are breeding cattle as a plaything than of the man of limited means who is paying for his farm and making his living out of Herefords."

"A striking example of what can be done on a small farm with a limited outlay of money is that of E. C. Smith, Mechanicsville, Iowa. Mr. Smith bought his first Herefords seven years ago. More out of curiosity than anything else, he attended a dispersion sale of pure bred Herefords in 1913. When the sale was over he owned three three-year-old bred cows and three yearling heifers. He then bought a well bred young bull from a neighbor, which was his last purchase until two years later when he attended another auction sale and bought a bred cow and a yearling heifer."

"The total outlay for pure bred Herefords on Mr. Smith's farm was \$2,497.50. Starting with these few females he has up to the present time recorded 91 head of calves. During this time \$10,763.12 worth of pure bred cattle have been sold from the farm and the present herd contains 40 head of registered Herefords valued by Mr. Smith at \$13,000."

"Records have not been kept of the expense of raising these cattle, but practically all of the feed has been produced on the farm and no expensive labor has been employed, so that Mr. Smith feels that with \$23,763.12 gross returns against an original investment of \$2,497.50, Herefords have paid him well for his time."

PREPARING MEAT FOR STORAGE

After successfully curing a supply of meat, the question of storage must be considered. This can be accomplished by first wrapping each piece separately in good strong paper and then placing the same in a cotton or canvas bag. If you have a supply of flour bags on hand, these will answer the purpose. Now securely tie the bags and paint the outside with a coat of whitewash to which some glue has been added. Or better still, prepare the following mixture, which has been found superior to the whitewash: 3 pounds of barium sulphate, .06 pound of glue, .08 pound of lead chromate and .4 pound of wheat flour.

First mix the flour with a small quantity of water to a smooth consistency, then add water to make four gallons. In a separate vessel dissolve the lead chromate in one or two quarts of water, then add the lead chromate solution and the glue to the flour mixture. While bringing this to a boil, add slowly the barium sulphate and stir thoroughly. This solution should be made the day before.

The sacks can be dipped and the meat packages put in, or the sacks can be filled and tied, and the solution applied by means of an ordinary whitewash or paint brush.

The sacks and their contents should be hung in a cool, dry place which is well ventilated. Meat stored in this manner should not be disturbed until needed for use, since handling of the dried sacks would cause the coating to break and peel.

Orange County cow testing report shows for the last month membership of 700 cows, many of which went above the 50 pound mark. Sixty-three tested above 40 pounds and the average of these high testers was 43.44. The highest testing cow was in the herd of Wm. Segerstrom. This cow gave an average daily milk production of 48 pounds testing five per cent, a total fat for the month of 72 pounds.

LAST CALL!

—REGISTERED—FEDERAL TESTED—

155 HOLSTEINS 155

State Fair Grounds, Sacramento, Cal.

November 10-11, 1920

If You Want

To buy from the first entire sale of Federal tested and inspected Holsteins ever sold in California—

To buy from a selection of 100 high class cows of milking age—

To buy from an offering that is a notable one in breeding, production, and high average type—

To buy females in calf to five bulls of most popular and high record breeding—

To buy from an offering in which the owners have used the most conscientious efforts to exclude from the sale list any animal that might prove unsatisfactory to the buyer—

To buy from an offering of bulls, mostly ready for service, that is one of the choicest ever offered to dairymen in California—

BE SURE AND BE AT THIS SALE!

Owners: TOYON FARM ASSOCIATION

Farms: Los Altos and Brentwood

Office: Mills Building, San Francisco

Auctioneers:
Col. Ben A. Rhoades
Col. John A. Davis

Management
California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Manager, Sacramento, Cal.

King Korndyke Pontiac Mead

Average of his Dam and Sire's Dam (Both Former World Record Holders)

At Average Age of 4 yrs. 2 mo. 10 dys.
Semi-Official, 365 Days

{ 1062.64 lb. Butter
21173.75 lb. Milk

Official Test, 7 Days

{ 31.91 lb. Butter
615.60 lb. Milk

His Sire—King Korndyke Pontiac 20th

His Dam—De Kol of Valley Mead 2d

Four of his seven nearest Dams have held World's Records

LOS ANGELES COUNTY FARM

Hondo, Cal.

3 miles south of Downey on Downey-Long Beach Boulevard



Sunny Side Farm

where efficiency is our watchword and the production of extra heavy milking Holsteins and big type Poland Chinas is our specialty. A few choice animals of either breed or sex for sale at all times at reasonable figures. Write for information.

R. F. Guerin

Visalia, Cal.

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Col. Ben A. Rhoades

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Increase Milk Production

Secure uniform and correct dairy type. Increase butter production. Insure greater net returns.

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My Herefords have size, bone, constitution and are notably thick fleshed. Visit my ranch and get my prices. Send for free literature.

Mission Hereford Farm

John A. Bunting

Mission San Jose

Cal.

DIAMOND G HEREFORDS

A few choice young bulls, big, heavy-boned husky fellows sired by DON PERFECT 2nd, one of the best sires in the West. Priced right and guaranteed.

H. H. Gable

Esparto, Cal.

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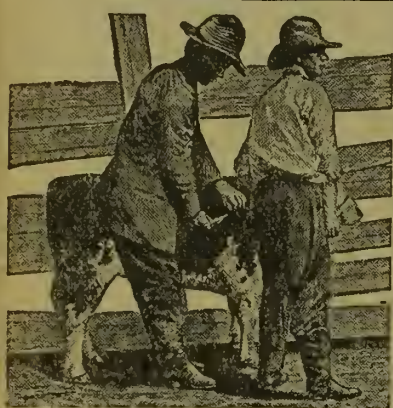
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If you are needing lumber don't fail to answer this ad. It is a bona fide effort to get your trade by offering genuine bargains.

"Woody" is favorably known to hundreds of progressive Poultrymen in Southern California.

Be sure to tell us what and how you are building so we can offer you the best possible bargains adapted to your purposes.

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Venadera Herd

REGISTER OF MERIT JERSEYS

Offers two cows six years old that have yearly Register of Merit records. Also a few bull calves sired by Jap's Perfection Owl.

GUY H. MILLER
Route 1, Modesto, Cal.

Young Jersey Bulls For Sale

One at the head of your herd will pay big dividends on his cost. Write to

W. J. Hackett

Modesto Cal

Jersey Bull

FOR SALE

A fine straight one, bred right, priced right.

S. F. Williams
Chico, Cal.

Member Orland Jersey Cattle Club

Lady Milky Aaggie Pontiac!

This great 17 month old daughter of the world's record senior three-year-old, Lady Aaggie Echo Hengerveld, "the \$10,000 cow" and the only living Holstein to hold as many as three world's records (her world records are: 24.69 lbs. butter from 494.4 lbs. milk in seven days, eight months after calving; 1,200.7 lbs. butter from 28,008 lbs. milk in 365 days as a senior three-year-old), and sired by Chimacum Spring Farm King Pontiac who now has 21 A. R. O. daughters with average 365 day records as two-year-olds of 500-900 lbs. butter, and seven day records from 16.00 to 23.77 lbs. butter will head

Milky-Way Farm's Consignment Pacific International Holstein Sale Portland, Ore., Friday, Nov. 19

We also sell Maldeta de Pauline 2d, a 26.32 lb. daughter of Sir Johanna Ruth Fayne; Maldeta Ormsby a daughter of Greenbank Sir Ormsby Hengerveld Jr.; Maldeta Prilly, a 16.376 lb. two-year-old; Colony Netherland Segis Newman with a 365 day record of 840 lbs. butter from 20,104.8 lbs. milk, is a daughter of Aaggie Cornucopia Newman and out of Netherland Segis 2d; Nooksack Lunde Oregon De Kol, a 28.75 lb. five-year-old; Jacoby Canary Hartog, a promising daughter of Canary Hartog Paul 2d; Peconic Lady of Donnybrook, Hengerveld Pontiac of Donnybrook and Carrie Pontiac of Donnybrook are fine big two-year-olds. Netherland Valdessa Fayne, a 34 lb. son of Funderne Mutual Fayne Valdessa is our only bull entered.

Attend the sale and watch for our consignment.

MILKY-WAY FARM

SUMAS

WASH.

JERSEYS



The Sure Breeders

LOOK at a line of Jerseys and note their even conformation. Straight udders, straight teats, good dairy type! Truly, Jerseys are the cows without a fault. 200 years of careful breeding have made them the certain breeders. There are now more bulls owned by cooperative bull clubs than all other breeds combined. Take advantage of the service offered by the Jersey Information Bureau which will tell you about The Profit Breed and of the profits their owners are making with them. Address

The American Jersey Cattle Club, 324 West 23d St., New York

TECUMSEH "BLANC"

No. 1469.

Pure Toggenburg Buck

Son of Bedella, a more than 7½-qt. doe and imported 6-qt. grandams.

Famous for his 6-qt. daughters. Breeding fee \$10. Pure breeds, \$15.

Stock for sale.

MRS. A. L. S. HANSEN

R.D. 1, 251 N. Craig Ave., Pasadena, Cal.

BLACKHAWK RANCH BUYS GREAT SHORTHORN BULL

Announcement has just been made that Messrs. Easton and Ward, owners of the famous Blackhawk Ranch, Diablo, were the successful bidders for the great young bull, Collynie Prince Lavender, that was the top of the great Duthie sale in Scotland. Collynie Prince Lavender is a white January son of the noted bull, Masterstroke, and his dam is Sittyton Lavender 26th. In a recent issue of the Shorthorn World appeared the following statement by one of the staff who recently visited the leading Scottish herds: "Sittyton Lavender 26th is a grand cow. She produced the calf that topped last year's sale, Collynie King Lavender, that went to Cazelet for 5,200 guineas (\$26,000). For this year she was nursing a white January calf by the great Masterstroke. The calves were not named at the time we were there but whoever gets a white bull calf by Masterstroke out of Sittyton Lavender 26th will have one of the best prospects I have seen in many a long day. I am anxiously awaiting a report of the sale that I may congratulate the buyer." No announcement of the price has been made, but word has been received that the sale averaged \$3,750 and that the top was 3,200 guineas — and it is known that the bull secured by the Blackhawk Ranch was regarded as one of the choicest lots.

The bringing to this state of such a bull means much for the future of the breed in the West. For one thing it is evidence that California breeders are determined to own as good bulls as the breed affords and that it will be possible for breeders of California to secure bloodlines that are not surpassed in America. Messrs. Ward and Easton are to be congratulated on their new purchase and we feel sure that the entire Shorthorn fraternity will appreciate their splendid enterprise. In addition to the bull four high class heifers have been selected and the entire shipment is expected to arrive about the middle of December. Mr. Loveii, manager of Blackhawk Ranch, made the selections and will accompany the cattle to the ranch.

LIVESTOCK MARKETING CONFERENCE

The conference called by President Howard of the American Farm Bureau Federation to consider means of developing a more satisfactory livestock marketing plan, brought representatives of all the important livestock producing and marketing organizations of the Midwest. The chief action of the conference was the decision to delegate to a committee of not less than 15 the duty of making a thorough study of livestock marketing conditions and methods.

This was similar to action taken by the grain marketing conference in July, from which has developed the Farmers Marketing Committee of Seventeen, which met in Chicago and started on plans for marketing the nation's grain crop.

The question of securing better livestock statistical reports was discussed at considerable length. The value of such figures would depend largely upon the speed and accuracy with which they are collected, the skill used in interpreting same, and the completeness with which the facts and advice arrived at are put into the hands of the farmer. A representative of the bureau of crop estimates stated that if the machinery of the existing farmers organizations, particularly the farm bureaus, could be utilized in collecting the figures and disseminating the advice based on the compiled figures, an additional appropriation of \$200,000 would enable the bureau to establish a very satisfactory livestock reporting service.

Meetings of the farm centers of the Tehama County farm bureau will be held at Dairyville, Nov. 10; Antelope, 11; Oak Park, 12; Richfield, 15; Proberta, 17; Corning, 18; Bend, 19; Los Molinos, 22; Liberal, 25; Manton, 26; Bowman, 27.

STALDER HOLSTEIN SALE

List of great sales at Rosamaines unfortunately crowded out again. Paper shortage. Next week sure.

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HEADLIGHT

the finest junior yearling boar in the state; two of his sons and our aged boar, Mouw's Special 7th, will be sold.

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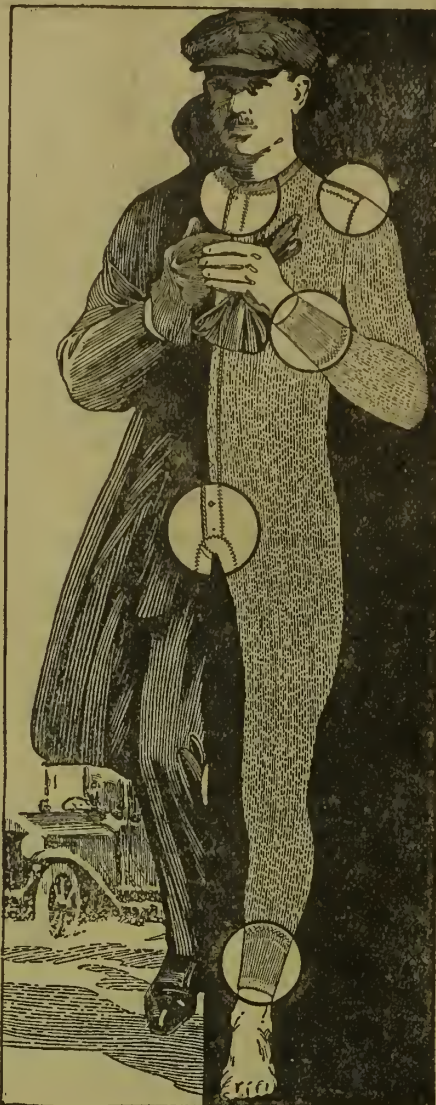
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A man of the hour every minute.
—Stuart W. Knight in Harvester World.

ALL ABOARD FOR THE FURNITURE ISLANDS

By Clara Peterson

(Continued from last week.)

WOULD your father let you walk down to the palace with us?" asked Jennie timidly.

She had no sooner said "palace" than the fawn was on its feet, and though the girls looked to every side there was nothing to be seen of the little deer and its father.

"How can they get away so quickly?" pouted Janie. "This is the funniest country!"

Now that they were nearer to the palace it looked more splendid than ever. The hill was so steep that the twins had quite a time getting down it. Once in a while they were afraid they would fall straight into the King's front yard. There was an oblong lake on the other side of the palace. The sisters could catch glimpses of it sparkling like silver, and they didn't think it a bit queer that the lake looked so much like the mirror on their bureau.

Finally they found a path and in 10 minutes they were down on the first terrace. There were colored flowers everywhere and a marble walk leading up to a low balcony. And sitting in a satin chair on the balcony, with her back toward them and her hair down in two golden braids, was a slender lady in a shimmering lavender gown.

"Janie—do you think it could be Cinderella?" whispered Jennie.

Before Janie had time to answer, a little fuzzy white dog jumped down from the Queen's lap, and sticking his head through an opening in the white balustrade, said, "Ki yi! Ki yi! Ki yi!" until the lady held her pretty hands to her ears and turned around.

Her face was so lovely and she made such a picture standing there and smiling down at them, that the twins couldn't say a word. The lady spoke first, shaking the little dog and then standing him on the broad rail.

Isn't he funny? He's trying to frighten you away, but even the birds aren't afraid of him. Just a moment and I'll let you in."

She pointed to a bronze door a few steps from the twins, and they skipped over to it and stood waiting, almost too happy to breathe. It was a very homey door in spite of being the door of a palace. There was a long panel of dotted lace over the glass and two great rose trees in tubs stood on guard.

The twins hadn't even time to stick their noses into the lowest fragrant blossoms for the door opened without a sound and the Queen stood there smiling.

"I am so glad to see you. And may I ask who you are? But now, I won't tease you. You are Janie and Jennie and I'm Cinderella."

She had led them into a soft carpeted hall full of paintings, and she kept right on talking to make them feel at home.

"Come. We'll all sit down on this bearskin. Isn't it soft? The cook is freezing some banana sherbet for us. She's been awfully cross today for Paintetta and Cammie ate up everything she had cooked for over Sunday and Cammie went right into the kitchen while she was out. He lifted up the top of the ice chest with his nose and drank 16 quarts of raspberry punch she had whipped up for dinner. Now tell me all about yourselves. I'm such a talker you will have to excuse me."

But the twins thought they would like to hear her talk forever, for Cinderella had the most musical voice in the world and her teeth were like little snowy grains of corn when she laughed.

Janie told her about Pussycat Mew and the funny sea lion children (the Queen said she had had them all to a party not long before and Rex had pretended to think that Mewlinda's tall was a fish so there was quite a bit of excitement for a while), and Jennie had just commenced on the story of the disappearing bunnies and the fawn, when a little page in black velvet announced lunch.

They all ran out to the dining room. The walls were covered with purple satin and the curtains were silver peacock feathers on which glistened dew drops of pearl. There was a round table covered by a spread of cobweb lace, and the twins had two small gilt chairs just like Cinderella's big one.

The banana sherbet was so delicious and the twins were so busy trying not to spoil the ice cream lily which decorated each dish that no one said a word for quite a few minutes. But when the crystal glasses were empty Cinderella said:

"I am so glad you came, for this has been the loneliest day! My lady in waiting has cried for hours and hours. She and her knight, Sir Arthur, have had a dreadful quarrel, and though I've done my best I can't get Alicia to make up."

"Now what shall we do?"

Without waiting for the twins' answer she jumped up from her high backed chair and, taking hold of their hands, ran out the dining room doors which opened into an old fashioned garden of hollyhocks and bachelor buttons and verbenas.

"You see," chattered Cinderella.

"The King, my husband, is away for the day and I hardly know what to do without him. Paintetta and Cammie were fighting so that they weren't much company and I was so happy when I heard that you were coming."

"What should you like to see most of all?"

"I suppose we couldn't see the coach," whispered Janie.

"Or the slipper—" said Jennie more loudly.

With the jolliest kind of a smile Cinderella led them down the terraces past a fountain of yellow speckled marble, and straight to the coach house which stood at the foot of the bluff. She touched a button and the wooden doors flew open.

"You can imagine how grand I thought I was, riding in that," said Cinderella. "It was quite different from doing piles and stacks of dishes and scrubbing the floors."

The twins were gazing at the carriage with wide eyes, for it was the right one without a doubt. The coach house was hung with dusky velvet so that the coach stood out like a topaz in an ebony frame.

It was pumpkin color and shaped like a jack o' lantern. There was a cunning round door with a gold handle, and the wheels were shiny black.

Cinderella turned the handle for the twins and they bumped their heads together peeping in. The coach was paneled with orange silk and there were a great many big round cushions of golden cloth with a small black clock face embroidered in each corner—and the hands of every clock were pointing to 12.

"The slipper is in my husband's jewel casket and that is locked," said Cinderella. "It is nothing but plain glass just exactly like the pictures—Paintetta has done it often. I'm sure I don't know why the King should be so fond of it."

But she did know and she blushed happily as she said it.

Then the three went through a lane of pomegranate trees to a grassy hill overlooking the lake, and Cinderella pointed out in the distance a white pillared cottage.

"My stepmother and my father live there and they are very happy now. As for my sisters, they married gentlemen of the court and moved to another country, but I often hear from them. The elder has the darlinest baby boy you ever saw."

"Now let's go to Alicia."

The Cultivator Patterns



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Alicia was in her boudoir. She was exactly different from Cinderella. Her hair and eyes were black. She was daintily plump and she wore a trailing dress of heavy sapphire lace.

Cinderella and the twins sat down on a tapestry bench and waited while Alicia bathed her eyes and powdered her nose. She smiled at Janie and Jennie when she had finished, but her eyes didn't smile; they were very sad.

"Haven't you forgiven him?" asked Cinderella patiently.

"I can't forgive him," answered Alicia, biting her cherry lips to keep from crying. "He says he loves me, but what he does love are his gun and his sword. He is forever killing, just for the sport of it—not for food but for pleasure. He cannot see that it is wrong. I shall not marry him."

Cinderella took Alicia's hand and the twins felt suddenly that they were in the way, so arising they tiptoed to the long window beside the dressing table. The Queen nodded her head and they stepped out upon the grass. For a long time they walked about the lawn, admiring the flowers and the gorgeous trees.

"Isn't it too bad about Lady Alicia?" asked Janie suddenly.

"Yes, it—" began Jennie. She stopped, for with a sudden turn they had come to an area way enclosed by an evergreen hedge. The twins found themselves at the little green hedge gate. Inside were two men, one with a deer over his shoulder and one who looked like Uncle Bob. The one with the deer had on blue overalls, but the Uncle Bob man wore a hunting suit of emerald green and a cocked hat with a white feather. He did not see the twins and he was laughing over something the other man had said. His face was brown but his eyes looked blue and he was tall and slim.

"A fine one that, eh Jacob?" said he. "I'll have to find a place for it."

"That's Sir Arthur!" whispered Jennie, but Janie did not answer and looking around, her sister saw that she was crying.

"It's the little fawn's father—it is, the face is just like his," said Janie. "Oh, the poor little fawn."

Then Sir Arthur saw them.

"Well, well! And who, pray, are these small maids? Come in; I have something to show you."

He drew them inside the hedge and looked down, smiling, but Janie's eyes were running over.

"Why is she weeping?" asked the knight in surprise. Janie could not answer.

"I'll tell you why. It's why Lady Alicia is crying too—it's because you kill things," said Jennie rather fiercely.

"But, child," answered the knight, "I do not kill the small ones, or those half grown—why should your sister weep? I do not harm her playmates."

"Yes, you do, you do too!" cried Jennie, standing in front of her twin. "Now we know why all the animals on the hill hate the palace. It is because you have been there killing when you don't need to. What if you don't kill the little ones, you kill their mothers and their fathers and they starve!"

The knight was so amazed at this outbreak that he sat down on a wooden bench and simply stared at the twins. Finally he spoke:

"You are right. Many a time I have killed a mother rabbit or a squirrel, never thinking of the young ones. You're right. Alicia shall have her way."

The last was said so very softly that Jennie could hardly hear it. She had turned to Janie and was comforting her.

(Continued next week.)

HOW TO AVOID JAR BREAKAGE

Do not place cold jars, either filled or unfilled, in hot water.

Do not place hot jars in cold water.

Do not overpack jars which are to be processed. Some products, like corn, pumpkin, peas, Lima beans and sweet potatoes, swell in processing. Pack jar only to within one-half inch of top.

Do not allow draft of cold air to strike jars when they are removed from the canner.

The wire bail should not fit too tightly or the jar will break when the lever is forced down.

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Pure Bred White Plymouth Rock cockerels U. R. Fishel strain, splendid birds. Prices \$5 to \$15. **Mrs. B. M. Jesch, Fallon**, Nevada.

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Thoroughbred Barred Plymouth Rocks. **Mrs. M. A. Warren**, 36 Little Delmas Ave., San Jose, California.

Baby Chicks from selected egg type S. C. White Leghorn hens. **Tupman Poultry Farm**, Box 7-C, Ceres, California.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence, stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. **The Kruckeberg Press**, 227-241 Court St., Los Angeles.

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Gypsum and Lime—Price Right
Order early for prompt delivery
E. B. Matthews, 1010 N. Madison Ave., Pasadena.

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WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

TURKEYS

Earl E. Sanders, Modesto, breeder of Mammoth Bronze turkeys and Single Comb White Minorcas, is booking orders for eggs, chicks and breeding stock. **Route D, Box 1880**.

Bourbon Red Turkeys, Buff Orpingtons. **The Ferris Ranch & Reservoir**, Po., California.

For Sale—Bourbon Red Turkeys. **Mrs. Palmer Smith, Patterson**, California.

RABBITS

Pedigreed Flemish Giants—Also Utility stock. No fancy prices. **MAUD BEECHING**, 1578 W. 46th Street, Los Angeles, California.

CATTLE

For Sale—Pure-bred Jersey Bull, 16 months old. Prize winner at two fairs this fall. \$250.00 if taken now. **W. H. ALFRED, Loleta**, Humboldt County, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. **T. T. Miller, Hollister**, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. **A. W. Morris & Sons**, Woodland, California.

Registered Guernseys—Well bred young bull calves and a few females for sale. **Russell S. Coe, Sycamore Ranch**, San Marcos, San Diego County, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. **John Lynch Ranch**, Box 321, Petaluma.

Registered Holstein Bulls, various ages at **Nuevo Stock Farm**, Wineville, California. **E. R. Stalder**, owner.

Registered Holstein Bulls of various ages for sale. **Millbrae Dairy**, Millbrae, California.

Reg. Shorthorns—Fair Oaks Ranch, Willets, California.

TREES

Nursery Stock—We are offering commercial lots in Bartlett pear trees, at prices which will save you planters big money. Have apple, pears, prunes, cherry, strawberry, berries, etc. **NO AGENTS**. Try our Mail Order System. Send for Planters List. 30 years in business. **CARLTON NURSERY COMPANY, CARLTON, OREGON**.

For Sale—Oregon Plum and Dollar Strawberry plants now ready for delivery. \$2.00 per hundred, postpaid. **Burbank Thornless Blackberry** \$15.00 per hundred. Seedling Black Walnut, 2 to 3 feet, \$15.00 per hundred. **Ben Putnam Nursery**, Winters, California.

50,000 Florida Sour Stock; 100,000 California Sweet Seedling orange seed-bed stock, 15 months old, suitable for fall planting. It will pay you to plant this fall. **SOUTHLAND NURSERIES**, 1941 East Colorado Street, Pasadena, California. Phone Colorado 6352.

For Sale—Placenta Perfection and Eureka walnut trees, also Eureka Lemon and Almond stock. These are all high grade stock. **Ketscher's Nursery**, 1101 E. 4th St., Santa Ana, California. Phone 572WK.

For Sale—30,000 Black Walnut Seedling trees, one year old next spring, ready to graft, at **Van Nuys**, California. Can leave on ground as long as desired. Get my price. **Geo. M. Ketscher**, 1101 E. 4th Street, Santa Ana, Phone 572W.

For Sale—Walnut trees, fine stock Eureka grafted on black root. Prices, 4-6 feet in height \$2.00; 6-8 \$2.25; 8-10 \$2.50; 10-12 \$2.75. **La Puente Walnut Nursery**, Puente, California. Phone 103.

For Sale—A few thousand Peach and Plum trees. Write for prices, grade and varieties. **Imperial Valley Nursery and Seed House**, El Centro, California.

TREES—TREES—ALFALFA SEED Etc. Full stock—best varieties, now. Write **J. L. LAWSON**, San Jose, California.

For Sale—Wonderful Pomegranate, French Prune Trees, Rooted Grape Vines. **W. M. Burton Nursery**, Box 43, Porterville.

Citrus Nurseries, **Murphy Oil Company**, East Whittier, California. Selected stock for sale. Inspection invited.

For Sale—Three thousand Mission and Manzanilla olive trees. **York Nurseries**, Highland, California.

For Sale—All kinds of fruit trees, grape vines, etc. **Burke's Nursery**, Lodi, California.

Grape Vines, orange, lemon, grapefruit trees; citrus seed bed stock. **L. A. TUTTLE**, R. 1, Box 385, Pasadena.

Peach and Apricot Trees—Leading varieties. **C. Truelsen and Son**, Hemet, California.

Certified Kadota Fig Trees and cuttings. **The Beckwith Fig Gardens**, Reedley.

MACHINERY

For Sale—1919 Fordson Tractor, sand rims, draw-bar and heavy orchard fenders; 5-ft. 18-in. Killifer disc; 5-ft. light Killifer chisel; 12-inch two-bottom Oliver plow with three sets shares; two 5-ft. sections heavy orchard harrow; one 100-gallon and three 50-gallon oil tanks; set of tractor lights and the necessary tractor and implement tools. The tractor and implements are in good condition and the right price will be made to anyone interested. **Box M-1, Cultivator**, Los Angeles.

For Sale—Trundar tractor and 4-bottom 14-inch mould Board P & O plow. Tractor has been used about four months. For further information address **Lambert Ranch**, R. F. D. No. 1, Box 166, Pasadena, California.

For Sale—Used ranch material, windmills, pumps, tanks, irrigating pipe, nine ft. dings, cylinders, rods. Write for our "Special Bargain" price list. **Demmitt Co**, Unstair, 120 N. Main, Los Angeles.

For Sale or Exchange—Big Sandusky tractor, has never been run. Have no use for same. Will sacrifice. **Box 333**, Placenta, California.

For Sale—Almost new Junior cider mill complete—West 4907—3007 South Hobart Blvd., Los Angeles.

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ROOFING PAPER
One ply \$1.50, 2 ply \$2.00, 3 ply \$2.50 complete with fixtures. Rubber roof paint 50¢ per gallon in 5 gal. lots.
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Orland, California.

BRED GILTS FOR SALE

The Only Herd of English Berkshires in the west. Bigger, better, stronger litters. More pounds of meat for less feed. Weanling pig \$35. Satisfaction guaranteed or money refunded at once.

SANDERCOCK LAND COMPANY
703 Market St., San Francisco
IN CHARGE OF NATOMAS LAND SALES.

Grape Wild Farm—Berkshires, Guernseys. Big Type Berkshire Boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion. **A. B. Humphrey, Prop.**, Calaveras, California.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. **Calac Orchards**, Martinez, California.

Real Good Berkshires, cholera immune. **Frank B. Anderson**, Box 724, Sacramento, California.

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Lamb's Durocs—Seven good sows with litters, twenty open gilts ready to breed, weaned pigs, two good boars. All of best blood lines. Priced right to close out the herd. Satisfaction guaranteed. **Elmer Lamb, Ceres**, California.

FOR SALE

% Duroc Pigs—\$6.00 each.
Sire—Registered Duroc.
Dam: ½ Duroc—½ Berkshire.
Rio Hondo Rancho, Compton, Cal.

The Home of the Durocs—The blood of Giant Wonder, Big Model, Orion King Gano, Top Sensation 1st, and Great Model. At head of herd is Col. Great Wonder I Am. Maxwell & Penfield, Lankershim, California.

For Sale—Two year old Duroc boar, grandson of Pathfinder and Great Wonder on sire's side and of Prince Albert and Disturber on the dam's side. Sires large, strong litters of the correct type. **Ray McMillan, Ethanac**, California.

Big Type Durocs; head headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. **Harvey M. Berglund, Dixon**, California.

Big Type Durocs at **Keystone Ranch** by Top Sensation 1st, May Rose King, Winsor's Giant Orion, Choice March boars and gilts for sale. **E. F. Myers**, Lankershim.

Bred Sows and Gilts and young stock. Pathfinder and Great Wonder I Am breeding. Monthly payments if you wish. **Derryfield Farm**, Capital National Bank Building, Sacramento.

Big Type Duroc-Jersey Boars and spring gilts for sale; from Monarch and Orion breeding. All are prize stock. Price right. Guaranteed. **Lowell Beaver**, Fresno, California. **R. C. Box 397**.

Boyanna Big Type Durocs—Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. **J. Boyd Harrold, Dixon**, California.

Durocs—Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. **J. L. Stevenson**, Van Nuys, California.

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. **Hollow Hill Farm**, B. W. Shaper, Manager, Colton.

Winsor Ranch Durocs—Boars and bred gilts of our own and eastern breeding. Write us your needs. **Morris C. Allen**, Manager, Bonita, California.

High Class Durocs—Two fine early litters, 10 each. Dam 2nd in strong class, Owensmouth. See **A. V. Austin**, Van Nuys, California.

For the Best in Durocs write **June Acres Stock Farm**, Davis, California.

WANTED

Wanted—Tractor and implements by private party for 600 acres of diversified farming. Will pay all cash. Holt 45 or 75 tractor preferred. Describe fully and state price. **Walter W. Atkinson**, 845 South San Pedro Street, Los Angeles, California.

Wanted—Walnut Meats and Cull Walnuts. We have been in this business 15 years, solicit calls for cracking only, paying cash. **Fred L. Mitchell & Son**, 214 French Street, Santa Ana, California. Phone 551-M.

Wanted—Reliable man to take charge of herd of registered Hampshire hogs. Give experience, references and wages desired. Good future for right man. **Box H. O., Cultivator**, Los Angeles.

Wanted to Buy One or Two carloads of young Jersey grades, springing with first and second calf. **J. H. Porter**, 548 Broadway, El Centro, California.

Wanted—To hear from owner of good particulars. **D. P. Bush**, Minneapolis, ranch for sale. State cash price, full Minnesota.

Wanted to Purchase—One thousand seedling avocado seeds. **T. J. WALKER**, San Fernando, California.

Wanted—Pairs of guinea chickens. Write **Mrs. H. Gantz**, R. F. D., Santa Barbara, California.

SALESMEN WANTED

Men with Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn over spare time into cash. Write **J. H. Yetter**, 115½ North Broadway, Los Angeles.

MEXICO LANDS

For Sale—Farming and Stock Ranch land \$1.50 to \$12.50 an acre. Large and small tracts. Buy now—prices are sure to advance. **Watson**, 508 Van Nuys Bldg., Los Angeles, Calif.

FARM LANDS FOR SALE

\$1,000 Cash Secures
Money-making City Farm.
Last year's income \$2,810; on paved state highway, electric cars pass; gas, electricity, city water, telephone, 4½ acres rich level fields, ideal poultry, 350 pounds apricots last year, also walnuts, grapes; good 6-room bungalow, piped water, gas, beautiful shade trees, magnificent view; barn, brooder house, garage, many other buildings; owner unable care for it, includes lot farm implements, tools, some household furniture; everything \$3,300, only \$1,000 cash, balance easy terms. Details this, many other farms California, 32 other states, page 91 Strout's Big New Illustrated Catalog Farm Bargains. Copy free. **STROUT FARM AGENCY**, 503 E. J. Wright-Callender Bldg., Los Angeles, California.

ARBUCKLE ALMOND LAND
18½ acres 2 miles west of Arbuttle, facing on Main county road.
12 acres in 4-year-old apricots
5 acres in 4-year-old almonds
1½ acres in 1-year-old apricots

This property has a Layne-Bowler irrigating pump with 500-gal. per minute capacity; 15 H.P. electric motor. Well is capable of irrigating 100 acres of land. Plenty of opportunity to sell water if desired. A dandy home-site and an excellent value.

Price, \$8,000.00
NELSON REALTY CO., Arbuttle, Cal.
Pioneer Dealers in Almond Land

For Sale—55 acres—45 acres in alfalfa, 10 acres in 3 year old prunes, 5 miles north of Chico, 2 pumping plants, small barn, and small house and also 60 tons of hay. Water supply unlimited. This place can be bought for \$5000 cash payment and \$2000 a year with 7% interest. Address owner—**A. C. Musselman**, 937 Orient St., Chico, California.

FOR SALE AND EXCHANGE
10-20-40-60 and 80-acre ranches, rich level, plenty water; proven grape (Thompson seedless), fig and alfalfa land Price right, easy terms.

FOR SALE
Some of the finest dairies in the state. **Chas. McNeely**, Alpaugh, California.

For Sale—55 acres of A-1 land near school and good town, near high school. Water goes with land. 30 acres of this land good for fruit or vines. Nine year mules, two good saddle horses. **Chas. Hubbard**, Riverdale, California.

For Sale—686 acre mountain ranch; family orchard, house, barns, abundance of gravity spring water; good soil; ten acres damp land; sixty acres tillable, balance range; some timber. Price \$15.00 per acre. **F. A. WOLFSKILL**, Cameron, California.

For Sale—By owner. 160 acres deep peat soil, buildings, orchard, riparian water rights. With or without stock and equipment. **W. D. Nichols**, Box 62, Bishop, California.

Shawnee, Oklahoma, center of a great farming country. Write for free agricultural booklet. **Board of Commerce**, Shawnee, Oklahoma.

For Sale—Ranches, Homes, Acres, free list. **Wilson Bros.**, Santa Cruz, California.

Bishop Land Co. can furnish from 5 to 1200 acres of the best land in the Valley. Address **Bishop**, California.

Irrigated Farms—Five acres and up **Alex. Murdock**, Brentwood, California.

MISCELLANEOUS

WANTED DAIRY HERDS
to consume our alfalfa hay. Dairy opportunities unexcelled on the Newlands Project. Never failing water supply, great variety of crops. 1920 alfalfa crop 100,000 tons. Ideal climate. Good dairy market. Leasing opportunities or feeding contracts available. Address: **NEWLANDS PROJECT ALFALFA ASSOCIATION**, Fallon, Nevada.

Powerene Is Equal to Gasoline at 5¢ a gallon. Salesmen and agents wanted. Exclusive territory granted. Powerene is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed, power. An amount equal to 20 gallons of gasoline sent to any address in the United States, charges prepaid, for \$1.00. **W. Porter Barnes**, Box 424A32, Santa Rosa, California.

Lumber Bargains—Until our surplus of ½ and ¾ inch boards, cheap flooring, short redwood ceiling, and other specials are reduced. Always bargains for poultrymen at our yards, 5800 South Main Street, or our Florence yard. Phones South 50 or 3592. **Woodhead Lumber Company**, Los Angeles.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the **Engineering Service Company**, 1316 Washington Building, Los Angeles, California.

Have Cash Buyers for salable farms. Will deal with owners only. Give description and cash price. **Morris M. Perkins**, Columbia, Mo.

Avoid Law Suits by having your property lines properly surveyed and established by the **Engineering Service Company**, 1316 Washington Building, Los Angeles, California.

Either one, land, hog, cattle in exchange for 1 Holt Caterpillar and 3 plows, cost \$6,600. Valued at \$5,000. **P. Miller**, Gustine, California.

If You Want to sell or exchange your property write me. **John J. Black**, Iowa St., Chisholm Falls, Wis.

FOR LEASE

Farm For Lease—My ranch of 320 acres near Daggett, California. 45 acres under cultivation, 5 acres in alfalfa, 1 acre in orchard, balance in grain and cotton. Abundance water, good farm buildings, implements, furniture, horses. Will lease for one to three years on very favorable terms to experienced farmer. Address: **S. Odell**, 524 Van Nuys Bldg., Los Angeles.

For Rent—Sugar Beet, Harley and Alfalfa land for rent. Have also for sale one 75 H. P. and two 60 H. P. Tractors. **Montana Land Company**, Hynes, California.

SEEDS AND PLANTS

Strawberries—Carolina and Superb, two of the leading everbearing varieties, and heavy producers, particularly the Carolina. Berries large, firm and of good flavor, \$3.00 per 100 and \$25.00 per 1000. Also, Brandywine and Klondyke, \$2.50 and \$20.00. All stock offered strictly first-class, prices F. O. B. HARRIS SEED COMPANY, San Diego.

Strawberries—1,000,000 plants leading varieties; 200,000 Cuthbert raspberry; 100,000 Black Cap tips; 100,000 Loganberry tips. Order now low prices. Also 100,000 choice peach seedlings—will graft in plums or prunes on contract for fall delivery 1921. Lafayette Nursery Company, Lafayette, Oregon.

For Sale—Best rooted grape vines of Thompson, Malaga, Emperor, Sultan, Muscat and Fig Trees of Calimyrna, Black Mission, Adriatic and red wonderful Pomegranate Trees at cheap price. This stock is growing at Madera, Delano and Cutler. P. O. Box 605, Dinuba, California—S. K. Hahn and Company.

For Sale—Strong Mountain Grown Brandywine, Carolina and Klondike strawberry plants at two dollars per hundred, postpaid. B. BRYAN, Camp Baldy, California.

Early Winningsstadt Cabbage Plants. Strong and healthy stock \$3.00 per 1,000. Prizetaker onion plants \$2.00 per 1000. M. Pazos, 1639 E. 53rd Street, Los Angeles.

Austin and Lucretia Dewberry plants and Concord Grapes. World's best—lowest price. Pilot Point Dewberry Farm, Pilot Point, Texas.

Cabbage Plants For Sale—Winningsstadt and Cannon Ball varieties. Apply daytime Victor Duran, 200 S. 3rd St., Alhambra, California. Phone 1055.

For Sale—Strawberry, Rhubarb plants. Will make special rates in quantity lots. J. A. Schoonover, 105 N. Alhambra Street, Alhambra. Phone 76 Alhambra.

For Sale, about a million cabbage plants of different varieties. L. C. Johnson, Pomona.

Brandywine and Banner Strawberry Plants, prices reasonable. Lon King, 1158 West Fourth, Riverside, California.

Onion Sets—Four pounds postpaid 60 cents. Harry Wooding, Van Nuys, California.

Pumpkin Seed—Mixed Pumpkin Seed, good germination, 25c per lb. Aurora Seed Mill, Stockton, California.

Strawberries—Plant 'em now. Cash Nurseries, Sebastopol.

LIVE STOCK

For Sale—Beautiful gentle young Shetland mare, children's pet. Also pony buggy and harness. Prices right, going away. L. L. Darveau, Route 2, Ventura.

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. W. P. Dwyer and W. S. Gullford, Box C, Butte City, Glenn County, California.

One Registered Two Year Old Shropshire Ram—Prize winner at eastern state fairs. Also took first prize at L. A. livestock show. W. A. Barber, 507 Amethyst Street, Station T, Rose Hill, Los Angeles.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

GOVERNMENT LAND

300,000,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book THE HOMESEAKER which tells you where this land is and how to acquire it, or send \$2.00 for book direct. The Homeseaker, Dept. M, 336 S. Broadway, Los Angeles, California.

POLAND-CHINAS

I Would Sell My topnotcher boar by Kings Big Bone Leader; two bred sows by Long Smooth Jumbo; also spring pigs—everything big type stuff. H. Christian, Arlington. Write me.

We Won 10 Ribbons in the Los Angeles Livestock Show; the ribbons are fine, but the pigs are finer. Viola L. Renwick, Santa Barbara, California.

Bred Poland-China Glits sired by California Gerstale and bred to Some Price. \$75.00 and up. J. A. Crawshaw, Hanford, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. For more info write to Tohoqua, California.

IT SELDOM FAILS

Many boys and girls as they progress in their teens, outgrow strength.

Scott's Emulsion

should be given generously and regularly to most children of school-age. Scott's Emulsion is tonic-nourishment that seldom fails.

Scott & Bowne, Bloomfield, N. J. 20-47

Take KI-MOIDS for Indigestion.



LARGEST FARM BUREAU HOME DEPARTMENT

By C. M. Bloom, Escondido

The Escondido home department of the farm bureau which claims the largest membership of any in the United States is truly a boon to the women of the Sun Kist valley.

Its first chairman, Mrs. N. Matzen, had the courage to organize it during the war when women seemed taxed to the utmost, both as to time and money. That her unbounded enthusiasm has had much to do with its success no one can deny.

It was rather a small band of women who gathered for the first meeting; but subsequent meetings were advertised, and all the women of the surrounding country, whether or not members of the farm bureau, were invited to attend. As soon as the splendid work done under the leadership of Miss Fleda Smith, home demonstrator of the farm bureau of San Diego County, and Mrs. Matzen, the local chairman, became known the membership increased from ten to 120.

The monthly meetings are held in the Escondido Woman's Club House, through the courtesy of the club. If each and every member of the club would drop in at one of the meetings and see the large crowd of earnest women and girls at work, they would feel well content that they are giving the use of their club house for such a purpose.

At first cooking demonstrations were held. Later came canning and drying of fruits and vegetables. Recently the demand for millinery and dress-making has been so great that the time has been given up to those two branches. One of the special things they have done is the making of dress forms. We are informed that interior decoration and landscape gardening are to be taken up later.

Miss Jessie Lee Decker of Berkeley, state demonstrator at large, comes occasionally, bringing new ideas and new enthusiasm to the women.

It seems fitting that such things should be taught at this time when the nation wide slogan is "Thrift," for the women go from these meetings to their homes and often fashion, with but trifling cost, hats, dresses and other garments which are truly smart.

HOUSEHOLD QUERIES

Avocado Ice Cream

I was interested in reading in recent issue of the Cultivator about the avocado luncheon of the Association and particularly in the mention of avocado ice cream. Will you please send me a recipe for making that kind of ice cream. It sounds awfully good.—Subscriber, San Francisco.

Here is the recipe given out by the California Avocado Association:

Yolks of five eggs, one quart milk, green Maraschino cherries, two cups sugar, four medium sized avocados, almond and vanilla extract. Make a boiled custard with the milk, egg and one cup sugar, flavor with vanilla. Mash the fruit to a pulp with one cup sugar and flavor with almond. When the custard is cool add the fruit and freeze. Serve with green Maraschino cherries on top of each dish.

Soap Turns Rancid

What is the trouble with my home made soap? It is nice and white and hard but gets rancid after keeping for a time. Is it because of too much grease for the amount of lye? Which is the best brand of lye for soap making? We think the Cultivator the paper.—Subscriber, Bakersfield.

Excess of grease is the cause of the soap turning rancid. We think there is no choice between either of the standard brands of lye. Perhaps the best help we can give our Bakersfield inquirer is to give complete directions for making soft and hard soap. The first was sent to the Cultivator by Mrs. E. T. Smith of Upper

Solve the Labor Problem



No Pushing
Runs Itself
Boy or Girl
Can
Operate It

The Merry Garden Auto Cultivator enables one man to do the work of four. No pushing or pulling—and simply guide it. Travels 120 to 200 feet per minute and cultivates four to five inches deep and within one-half inch of plants.

Equipped with Evinrude 2 H. P. motor and costs but three to four cents per hour to operate.

PRICE, \$230, F. O. F. CLEVELAND
Deliveries made from Los Angeles

Manufactured by
ATLANTIC MACHINE AND MFG. CO.,
Cleveland, Ohio.

Southern California Distributor

FRED A. BENNETT

223-225 North Los Angeles Street, Los Angeles

ALFALFA SEED

A Letter to California Farmers and Seedsmen

During the past sixty days we have selected for our trade approximately 1,000 bags of the finest and purest alfalfa seed grown in the Yuma Valley, and until further notice will fill all orders at the following prices:

Hairy Peruvian 35c. Smooth Peruvian 30c.

American (Common) 24c.

DELIVERED BY EXPRESS. WE PAY THE CHARGES

The Hairy Peruvian and Smooth Peruvian comprising our stock come from fields with absolutely PERFECT PEDIGREES. Every bag is CERTIFIED, LABELED AND SEALED under direction of the State Agricultural Department. All three varieties show a fine, golden color, and were carefully selected for high purity and germination.

For 11 years our seed has won first prize at the Arizona State Fair in competition with other growers and dealers of the State.

At the Fourteenth International Soil-Products Exposition held in Kansas City last year, in competition with the entire United States, our seed won BOTH FIRST AND SECOND PRIZES.

We are proud of this record. We have a reputation to maintain. We guarantee every bag of seed we sell to be exactly as represented.

Place your orders now and take advantage of the low prices ruling at the beginning of the season.

Alfalfa Seed Company, Inc.

Yuma, Arizona

Growers—Recleaners—Wholesale Dealers

RELIABLE
Seeds

Aggeler & Musser Seed Co.

620 So. Spring Street
MARKET BRANCH:
767 So. Central Ave.

Los Angeles

Cal.

When Writing Advertisers Mention California Cultivator

Lake; the second is from the head of the household economics department of the Colorado agricultural college.

Soft soap. In the first place, when you wish to save ashes for soap be sure you burn nothing but oak or ash wood. Prepare a leach anyway you please, but I take a barrel and bore some holes across the bottom of it, then set it on an inclined platform, placing a piece of board on each side of the holes to make a channel for the lye to run through; then, before filling the barrel with ashes, place two or three inches of clean straw in the bottom of the barrel, then put your ashes in, leaving a little place scooped out at the top in which to put water. The first lye that runs through will be very strong, but it becomes weaker the more it is drained off. I have a 15 gallon kettle in which I make soap and I pour the lye in this until it is about three-fourths full, then test it with a fresh egg, and if the egg shows more than a spot the size of a silver dime above the surface of the lye it is too strong and must be weakened by adding water; if the egg barely floats it is too weak and will require more boiling. To have it the proper strength is very essential. Having the lye the proper strength, put your grease in and start your fire. If, when it comes to a boil, the lye absorbs all the grease, add some more until some floats on top after the soap thickens, which it is apt to do almost as soon as it comes to a boil. I boil it half or three-quarters of an hour. Sometimes it seems thin at first, but thickens after it gets cold; if it absorbs the grease it will be soap.

Hard Soap. Make soap of fats which cannot be used for cooking. First clarify the fat. Melt it up and add water, bring to a boil and allow to cool. The fat will form a solid cake on the top of the water. The impurities may be removed from the bottom of the fat. Melt fat again and heat until all water has evaporated, all bubbling stops. Then slice a medium sized potato into the fat and strain through a dry piece of cheese

cloth. To each five pounds of lukewarm grease use one small can lye, one quart cold water, one-half cup hot water, three tablespoons borax, one-fourth cup household ammonia, two tablespoons sugar, one teaspoon salt. Mix lye and cold water; let stand till cold, stirring occasionally. Mix one-half cup hot water with three tablespoons borax. Let this cool and add one-fourth cup household ammonia, two tablespoons sugar and one teaspoon salt. Pour lye into grease slowly, stirring continually with a wooden spoon or spatula. Add other mixture, stir until light and thick. Pour into an enameled pan lined with paraffin paper. Crease before soap gets cold.

If any of our housekeeper readers can help from their experience in soap-making we shall be glad to give subscription credit for suggestions published.

"In Flanders Fields"

Will you please print the poem, "In Flanders Fields." I think I first saw it some time ago in the Cultivator, but don't remember just when. Think it was about the beginning of the war. —Subscriber, Los Angeles.

This was first printed in the Cultivator in November, 1917. It was written by Lieut. Col. John McRae of the Canadian Expeditionary Forces, who shortly after gave up his life on Flanders fields. It first appeared under title "The Torch," though we believe it is almost universally known as "In Flanders Fields."

"IN FLANDERS FIELDS"

In Flanders fields the poppies blow
Between the crosses, row on row,
That mark our place, and in the sky
The larks, still bravely singing, fly,
Scarce heard amidst the guns below.
We are the dead. Short days ago
We lived, felt dawn, saw sunset glow,
Loved and were loved, and now we lie
In Flanders fields.

Take up our quarrel with the foe,
To you from falling hands we throw
The torch—be yours to hold it high,
If ye break faith with us who die,
We shall not sleep though poppies grow
In Flanders fields.

Coconut Custard Pie Recipe Wanted

Will you please print in California Cultivator recipe for a good old fashioned coconut custard pie and in return I will give a very good recipe for

Cheese Pie:

Beat half cup butter to cream. Half cup of milk may be added if not wanted too rich. Add yolks of 3 eggs and two-thirds cup sugar beaten to a froth, then 2 cups cottage cheese and stir all together briskly. Bake in one crust. When done spread over meringue made of the beaten whites of the eggs and three tablespoons powdered sugar, flavoring. Brown lightly in oven. This is a very good recipe.—Subscriber, Davis.

Coconut Custard Pie:

Here is one that sounds old fashioned in that it calls for four eggs:

Beat 3 whole eggs and one yolk until light. Add one-half teaspoon salt and two-thirds cup sugar and beat again. Add one cup grated coconut and two and a half cups milk. Mix all well together, turn into a deep pie plate lined with paste and bake until the custard is set. Beat the white of one egg until stiff, add one tablespoon sugar, beat well, spread on top of pie and bake in oven to delicate brown.

HINTS FROM HOUSEKEEPERS

Fig Leather

Wonder if anyone ever made fig leather (I call it)? I disliked to use my sugar so freely, so mashed up my figs as for jam, though no sugar, and spread it in thin layers on paper in my dryer. It's fine. Does not take so long as drying otherwise.—Nellie E. Crest.

Pear Syrup

Here is a very nice recipe for pear syrup, made from pears which are too ripe to can and still too good to waste, is delicious without a drop of sugar. Take pears too ripe for canning, wash and put in kettle, cover with water and let boil till well done, then strain

through bag. Put strained juice in saucepan and let boil about ten minutes. Then take it off the fire and put aside. To one gallon of boiled juice add 1 level teaspoon baking soda in 1 cup water (lukewarm). When dissolved put in with boiled juice. Be sure the pan the juice is in is large enough so that when soda is put in it won't overflow. As soon as scum rises take all scum off to clear syrup, then put it on to boil. Still be careful as the scum may rise while boiling, and again clean it off the syrup till pure and clean, then let boil steadily till in one-half hour test with spoon to see if it sticks to spoon and threads. Then it is done, but be sure it doesn't boil too much and be too thick, as it will change taste and not have such a nice flavor. When cooked to the right degree it is very sweet and rich, just what is wanted for table use. It may be late in the season to make or try the syrup, but if recipe is kept it will help someone next year. Once tried it will always be used.—Mrs L. Hagopian, Petaluma.

Mock Mincement

I am sending a recipe which I have never seen printed in Cultivator and which is not distinguishable from the old fashioned mincemeat when in the pie: 1 peck green tomatoes chopped fine. Drain, cover with water and boil once, drain, add same amount chopped apple, 2 teaspoons salt, 2 teaspoons cloves, 2 teaspoons cinnamon, 1 teaspoon nutmeg, sugar to taste (more spice if desired), 3 pounds raisins (or less according to taste), ½ cup vinegar, juice of one lemon. Cook until thick. It is good also made entirely without apples. When making the pies add one teaspoon butter or other shortening to each and ½ teaspoon salt. When making the mincemeat I also put in juice left from sweet pickles, also grape juice, or in fact any little odds I've had left over, such as blackberry juice, etc. Quince can be used in place of part apples.—Mrs Otis O. Carpenter, Earlimart.

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Calumet Baking Powder will save you all of that. Because when you use it—there are no failures—no losses. Every baking is sweet and palatable—and stays moist, tender and delicious to the last tasty bite.

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"BEST BY TEST"



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Calumet Sunshine Cake Recipe

½ cup of butter,
1½ cups granulated sugar, 2½ cups flour, 1 cup water, 2 level teaspoons Calumet Baking Powder, 1 teaspoon lemon, yolks of 9 eggs. Then mix in the regular way.

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Somehow, Ghirardelli's never tastes so good, so warming, so comforting, as on raw mornings when you're up just a bit ahead of the sun, with lots of chores to be done. Then it is that you're doubly grateful for a strong cup of this delicious food-drink. It nourishes and sustains!

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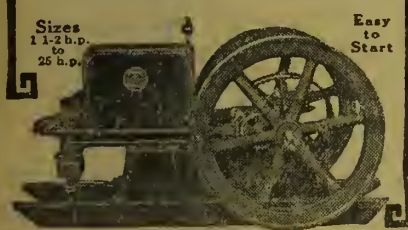
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Petaluma California

How To Get More Eggs and Save Feed!

How to tell slackers and poor layers; how to feed to double egg yield; how to keep flocks healthy; ventilate houses in winter; get good hatches, strong chicks—1,000 poultry secrets made plain in 38 lessons. Recommended by 25,000 students. Guaranteed to double profits. **FREE BOOK**, "Dollars and Sense," gives all the facts. Write today. **AMERICAN POULTRY SCHOOL**
Dept. 1416 Kansas City, Missouri.



Poultry Queries

Conducted by J. A. Koethen

Sick Turkeys

I have two tom turkeys about six months old which are ailing. They eat and drink, but not with any relish, and their heads are a dark red. They have free range, plenty of fresh water, scur milk daily and milo or grain feed. I have given one of them two doses of castor oil, but see no change.—Subscriber, Santa Ana.

This is just what happens to many turkeys that had been fed a little too heavily the first two or three months. At first they do well and there are no signs of disease. Finally the effects of overfeeding begin to show, and the dark head and lack of appetite show that the dreaded blackhead germ is developing. As your turkeys are so old and do not seem very sick as yet, you may be able to save them by giving a liver pill once a day for several

AMERICAN AGRICULTURE REPRESENTED AT ROME

Three of the delegates from the United States to the general assembly of the International Institute of Agriculture at Rome, November 3-15, were Dr. Thomas F. Hunt, dean of the college of agriculture of the University of California, permanent delegate; Leon M. Estabrook, statistician and chief of the bureau of crop estimates, and Harvey J. Sconce, former president of the Illinois Agricultural Association. Because of failure of congress to provide a specific appropriation for the payment of the expenses of the American representatives it has been necessary to delegate men who will be in Europe at the time on other business or who are willing to pay their own expenses. Dean Hunt, who was appointed permanent delegate to succeed David Lubin, is now in Europe on sabbatical leave from the university, and will reach Rome in time to take part in the meeting.

The International Institute of Agriculture was organized in 1905, through the assistance of King Victor Emmanuel III, at the instance of the late David Lubin of California, who had first tried to interest several other

POULTRYMAN'S CALENDAR—NOVEMBER, FEEDING FOR EGGS

From the time the pullets are six months of age a good laying mash should be kept before them constantly. The mash may be either bought prepared or mixed at home. For those who prefer to mix their own mash, this formula, which is recommended by the experiment station at Berkeley, is simple and good: Bran, 5 parts (by measure); middlings, 3 parts; corn meal, 1½ parts; soy bean meal, ¾ part; beef scrap, 1 part; bone meal, ½ part. With this should be used a mixture of at least two grains, one of which should, if possible, be wheat. This scratch grain is fed at night, about an hour before sunset, and a sufficient quantity should be fed to make sure that every pullet has a full crop, with a little left over in the litter for morning. A quart of grain a day for 15 hens is about the right amount, but no one can say exactly how much a hen should eat. Green feed is given sometimes in the middle of the forenoon, some times at noon. A moist mash, fed about 2 o'clock, is often useful in keeping up production in fall and winter. This is moistened with buttermilk or sour milk or one of the commercial milk preparations. An abundance of green feed is one of the best stimulants to egg production.

days and putting them on a diet of greens and clabbered milk with no grain at all except what they may pick up on range.

Soft Shells

I have a three year old R. I. Red hen that for six months has been laying soft shelled eggs. She has the same feed as the rest of the flock—grain, green, shell, table scraps—but is the only one that does not lay an egg with a good hard shell. As she is an excellent layer I would like to keep her.—Subscriber, Sherman.

The soft shells show that your hen is getting too fat, a very common trouble with old hens of the heavy breeds. If you can manage to reduce her by cutting out the grain feed, and if possible letting her run and forage for her living for a while, she may be profitable for another season, but as a rule these old hens will put on fat in spite of all one can do. I notice you are not feeding a mash. The table scraps may take its place for a while, but the chances are you are feeding more hard grain than is good. Better get one of the prepared mashes and keep it before your hens, meanwhile cutting down the amount of grain fed. The whole grain is the fattening portion of the ration and it is very easy to feed too much.

It is reported that the state highway commission will pave the plank road now connecting Holtville and Yuma.

countries in the project. Mr. Lubin conceived the idea of an international clearing house for crop and livestock statistics which would make available systematically, on the same dates for the entire world, information regarding the production, consumption, marketing and distribution of agricultural commodities. He was the permanent delegate of the United States to the institute from the time of its organization until his death in 1919.

The institute has a direct interest to American farmers, because the prices of American products are determined, to a considerable extent, by the relation between supply and demand which is world wide in its application. The price of bread and meat in this country is influenced to a considerable extent by the surplus or deficient production of bread grains and meat animals in many foreign countries as well as at home.

The general assembly meets every two years to review the work of the institute and to outline plans for the succeeding two years. The last meeting was held in May, 1913, the war having interrupted meetings since. The International Institute is maintained by contributions from 55 adherent countries, these contributions being proportionate to the part taken by each country in the activities of the institute. The United States and other countries of first rank contribute annually \$16,000 for its support.

In addition to the crop and livestock statistical service, the institute collects and publishes information with regard to trade in agricultural products and fertilizers, cooperation among farmers, wages and conditions of farm labor, rail and water transportation rates, credit, finance and exchange, and other economic factors affecting agriculture. In addition it issues a monthly review of progress in the science and practice of agriculture.

With \$40,000,000 invested by California farmers in tractors numbering one for every 700 acres of improved land in this state, with over 33,500 electric motors and 20,000 stationary gas and oil engines used on the farms, the California farmer uses more mechanical power per acre than any other farmer in the United States.

1-12-20
OAK DALE FARMS
Austin, Minn.

The S. C. White Leghorns you sent me recently arrived in first class shape. We won first young pen, first pullet, and on the cockerel in the first young pen we were awarded the cup for having the best cockerel in the show, all breeds competing; also the silver medal given by the American Beauty Poultry Association.

Yours truly,
Matt. C. Abts,
Columbus, Neb.

This is only one of the thousands of letters we have received from careful poultry raisers who buy from our famous flocks of prize winning or heavy egg producing strains of S. C. White Leghorns.

Write for our Free Catalogue.

Dept. B-2

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Farmers, Miners, Builders—people in every kind of business are saving money buying used or renewed pipe from us. We sell every kind of pipe. Send in a list of your requirements today and get our prices. We have saved hundreds of people. 33 1-3 to 50% on their pipe bills. Here's a partial list of some of the miles of pipe we have in stock for immediate delivery:

8000 ft.	6-Inch Riveted	16 gauge
700 ft.	8-Inch Riveted	16 gauge
5000 ft.	12-Inch Riveted	12 gauge
1000 ft.	18-Inch Riveted	12 gauge
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300 ft.	24-Inch Riveted	14 gauge
500 ft.	36-Inch Riveted	12 gauge
10,000 feet	light wrought iron 8-Inch pipe with cast iron collars.	

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GLOBE "A1" FEEDS

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FEED FOR SWINE,
STOCK AND POULTRY

ASK YOUR DEALER

Los Angeles Markets

Los Angeles, November 3, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 58 cents.
Dairy Exchange price last week on extras:

Oct.	27	28	29	30 Nov. 1	2
'20	57	57	57	58	58

CHEESE

Brokers' prices:
California flats, 23@25.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 79 per dozen; case count Produce Exchange closing price 73 per dozen; pullets, Produce Exchange closing price 64 per dozen; pewee pullets, 51.

Dairy Exchange prices last week on extras:

Oct.	27	28	29	30 Nov. 1	2
'20	75	75	77	79	79

POULTRY

Price to consumers: Hens, lt., 30; heavy, 32; colored, 35; broilers, 38@42; roasters, 44; old roasters, 14; fryers, 34; ducks, old, 23; ducklings, Pekin, 3½ up, 25; others 23; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47.
Belgian hares, live, 16@21; old, 9.

LIVESTOCK

Los Angeles, Nov. 2. — Weighed and

delivered off cars without food or water:
Hogs (hard-grain): 125 to 175 lbs., 13.75; 175 to 225 lbs., 14.25.
Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.
Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, November 2, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market unsettled; Stocktons: Burbanks, best, 2.25@2.50 sacked; poorer low as 2.00. Idaho Russets 2.50 mostly. Sweet mostly 85@1.10 per lug.

Onions: Supplies heavy, market dull. Stocktons: Whites 2.00@2.25; Browns mostly 1.35@1.50 per 100 lbs. sacked; Yellows: 1.25@1.35 cwt.
Garlic, lb., 12@14.

VEGETABLES

These are the actual prices obtained November 2 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 9@11.
Beets: Doz., 50@60; sk., 1.75@2.00.
Cabbage: Supplies liberal, market steady, movement slow, wide range in

quality. Best mostly 2@3 per lb.; per field crate, best, 1.50@2.00.
Carrots: Doz., 30@40; sack, 1.20@1.50.
Cauliflower: Supply liberal, field cr., 90@1.25 according to quality.
Celery: Doz. bunches, 1.00@1.25; cr., 3.00@3.50.

Cucumber: Market firm; local, best, lug, 1.00@1.25, few high as 1.60.
Egg Plant: Lb., 3@5.
Lettuce: Field crs., 1.75@2.00.
Peas: Local, 14@16.
Peppers: Bells and Chilis, lb., 3@5.
Squash: Local summer, lug, 75@1.10; Hubbard, lb., 1½@2.
Tomatoes: Local lugs, best, mostly 35@50.
Turnips: Per doz., 40@50; sk., 2.25@2.50.

DECIDUOUS FRUITS

These are the actual prices obtained November 2 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal; market firm. California bushel boxes Bellefleurs, 4 tiers, 1.75@1.95; 4½ tier, 1.50@1.60; Jonathans, fancy, 3.00@3.25; Delicious fancy, 3.25@3.75. Idahos and Utahs, loose Jonathans large, 6@7, small low as 5 per lb.

Bananas: Lb., 10½@11.
Cranberries: Bbl., 14.50@14.75.
Figs: Box, 1.25@1.50; few high as 2.00.
Grapes: Supplies liberal, market strong. Muscats, 8@10; Tokays, 9@11; Cornichons, 9@11; Malagas, 10@12; poorer low as 5.

Pears: Bartlett's, best, lb., local, mostly 7@8; Northern mostly, 9@11.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.75@3.00; special packed brands, 3.50@4.00.

Lemons: Market dull, wide range in prices: Local stock: Packed, box, 2.75@3.25; loose, 1.00@1.50; lug, mostly 50@60. Oranges: Supplies liberal, market firm. Valencias: Packed special brands, 12¢'s, 15¢'s and 17¢'s, 7.50@8.00. Local packed, second grade, mostly 4.25@5.00.

GRAIN AND FEEDS

Grain Exch. prices bid November 1:
Barley: 2.23½@2.26¼.
Milo: Charlots, 2.70@2.75.
Corn: Blk. Yellow No. 2, 2.30; White No. 2, 2.20.
Bran: Kansas, 35.00.
Wheat: Mixed, Utah-Idaho, 42.00.

San Francisco Markets

San Francisco, Nov. 2, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations:
Extras 56½
Dairy Exchange prices extras this week and year ago:
October 19 20 21 22 23 25
Oct. 26 27 28 29 30 Nov. 1
'20 ... 57½ 56 56 .. 56½
'19 66 65½ .. 60

CHEESE

Dairy Exchange quotations:
Jack, full cream 22@24
Jack, half skimmed 17@20
Ore. Y. A. 35
Cal. Flats 27
Oregon Trips 39

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:
Extras 84½
Extra Pullets 73
Undersized 61
Dairy Exchange prices, extras this week and year ago:
Oct. 26 27 28 29 30 Nov. 1
'20 ... 78 78½ 84 .. 84½
'19 86½ 84 .. 88½

POULTRY

Wholesale prices are:
Broilers, 15 pounds per dozen, 53@55.
Colored fryers—2 to 3 lbs., 34@36.
Colored young roosters (smooth), 3 to 4 lbs., 38, staggy, 25@27.
Old roosters (colored), 20@23; market firm.
Leghorns hens, 3 lbs., 36@38; under, 25.
Large colored hens, 38@40.
Young Pekin ducks, 25; old ducks, 25@25; young geese, 25; market easy.
Live Belgian hare, 20@22; dressed, 25@30; market firm.
Dressed Turkeys—Young, large, 62; market firm. Live turkeys, young, 47@52; old, 47@52.
Squabs—Large, 75-80 per lb., market.
Pigeons—3.00@4.00 per dozen; market firm.

LIVESTOCK

Western Meat Company prices are:
Cattle: Grass steers, No. 1, weighing 1000 to 1200 lbs., 9@9½; do, 1200 to 1400 lbs., 8½@9; do, second quality, 7@7½; thin, 5½@6.
Cows and helpers: No. 1, 7½@8; second quality, 6@7; common to thin, 5@4.
Calves: Light weight, 10@11; medium, 8@9; heavy, 7@8.
Lambs: Milk, 9@10; yearlings, 7½@8.
Sheep: Wethers, 7@7½; ewes, 5@5½.
Hogs: Weighing 100 to 150 lbs., 14; 150 to 225 lbs., 15; 225 to 300 lbs., 14½; 300 to 400 lbs., 13½.

POTATOES AND ONIONS

Wholesale prices:
Potatoes, per cental: Street prices. River, 2.00@2.40 for No. 1, 1.50 for No. 2; do, Oregon Burbanks, 3.00; Sallinas, 3.25@3.50; Idaho Gems, 3.00. Sweet potatoes, 2½@3 lb.
Onions: Yellow, 90@1.00 per cental. Australian brown, 1.00@1.25; do, white 1.50@2.00.
Garlic: New, 6@8.

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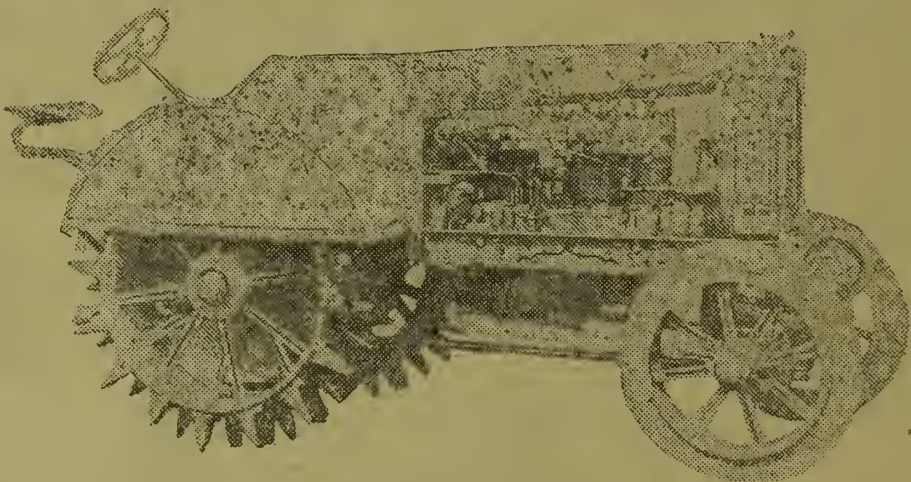
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Can be supplied by no other Pacific Coast nursery this season. Sold under guarantee to refund price if blight-killed within TEN YEARS. For particulars, write

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Coast after that Thanksgiving dinner. Climb in your Auto-Wheel on the hill, shove 'er off and ride to the bottom. You'll not say "coasting" you'll say "Auto-Wheeling" once you travel down a hill in su

Auto-Wheel Coaster

It's a new sensation that you've never enjoyed before. The Auto-Wheel is a wonderful wagon. Look at the wood. Notice the steel tires and axles. Examine the genuine roller-bearings. You will agree that the Auto-Wheel will win races and last a lifetime. Send for "The Auto-Wheel Spokesman," and learn about our prize contests. We'll send it FREE for six months. Give the names of three coaster dealers, telling which sell wagons with the name "Auto-Wheel" on sides.

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DEALERS EVERYWHERE

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ESTABLISHED 1836
BOSTON
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VEGETABLES
Wholesale selling price:
Beans: Lb., 5@9; garden, 8@10; Italian, 8@10; Lima, 12@13.
Beets: Sk., 1.50@1.75.
Brussel Sprouts: 5@7 lb.
Carrots: 1.50@1.75 sk.
Cauliflower: Doz., 1.00.
Cucumbers: Lug, 1.00@1.50.
Cabbage: Lb., 1.
Celery: Cr., 2.00@4.00.
Corn: Sk., 2.00@2.50; fy., 3.00@3.50.
Egg Plant: Stockton, lug, 50@75; Livingston, 1.00@1.35.
Lettuce: Doz., 35@40.
Onions: Green, per bx., 1.75@2.00.
Peas: Lb., 13@15.
Peppers: Lug bx., Stockton Bells, 75@90; Bay, 1.00@1.25; Chili, 75@90.
Spinach: Lb., 6.
Squash, Summer: Lug, 75@1.25; Cream 75@1.00; Hubbard, 1.25@1.50, sk.; Mar rowfat, sk., 1.00@1.25.
Tomatoes: Bx., for canning 25@50; fy., 1.50@1.75.
Turnips: Sk., 1.50@1.75.

CITRUS
Valencia Oranges: 7.00@9.00; Lemons, 2.50@4.50; Grapefruit, 3.00@4.50, Ariz., 4.50@5.00.

DRIED FRUITS
Raisins: Sunmaid, seeded, 36 15-oz. packages, 23 lb.; seedless Sultanas, 25-lb. boxes, 22 1/2 lb.; Thompson Seedless, 25-lb. boxes, 23 lb.; 3 cr. L. M. raisins, 25-lb. boxes, 25 lb.; 2 cr. L. M. raisins, 25-lb. boxes, 24; 1-lb. clusters, 20-lb. boxes, 5.50 bx.
Figs: Fancy black, 25-lb. boxes, 11 lb.; extra choice black, 25-lb. boxes, 9 1/2 lb.; choice black, 25-lb. boxes, 8 1/2 lb.; fancy white, 25-lb. boxes, 18 lb.; extra choice white, 25-lb. boxes, 15 lb.
Prunes: 30-40s, 25-lb. boxes, 19 lb.; 40-50s, do, 17 lb.; 50-60s, do, 15 lb.; 60-70s, do, 13 1/2 lb.; 70-80s, do, 11 1/2 lb.; 80-90s, do, 10 lb.; 90-100s, do, 9 1/2 lb.
Apples: Fancy, 50-lb. boxes, 14 lb.; extra choice, do, 10 1/2 lb.; choice, do, 10 lb.
Peaches: Blue ribbon brand, 48 11-oz. to case, 10.00 per case; do, 24 2-lb. boxes to case, 11.00 case; extra fancy peaches, 25-lb. boxes, 22 lb.; fancy, do, 20 lb.; extra choice, do, 18 lb.; choice, do, 17 lb.
Apricots: Fancy, 25-lb. boxes, 30 lb.; extra choice, do, 26 lb.; choice, do, 25 lb.; standard, do, 22 lb.
Pears: Fancy, 25-lb. boxes, 20 lb.; extra choice, do, 17 lb.; choice, do, 14 lb.

BEANS
Jobbers prices:
Small white, 5 per lb.; large white, 5; pinks, 6; Limas, 8; cranberry, 6 1/2; Mexican Gravanzas, 8; Lentils, 12 1/2; Blackeye, 6 1/2; Mexican Reds, 6 1/2; Pop-corn, 8; California Bayo, 9; split peas, 7; green peas, 4.

GRAIN
Sales grain exchange November 1:
Wheat: 3.50@3.75 cwt.; mill run, 2.75 @2.85.
Oats: Red feed, new crop, 2.40@2.65.
Barley: New feed, 2.05@2.15; shipping, 2.15@2.17 1/2.
Shorts: 60@63.
Middlings, 68@72.

HAY
Alfalfa Growers of California under date of October 26:
No. 1 Dairy Alfalfa.....27.00
Standard Dairy.....25.00
Rock Hay.....22.00
A. W. Scott Co. quotes wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers, charge of cartage, commission and handling expenses must be added according to conditions):

Per Ton
Wheat hay, fancy.....28.00@29.00
Wheat hay (light 5-wire bales) fair to No. 1.....24.00@27.00
Tame oat hay, fair to choice.....24.00@27.00
Wild oat hay.....18.00@20.00
Barley hay.....17.00@20.00
Alfalfa hay.....22.00@25.00

Citrus Markets
Los Angeles, November 3.
The citrus shipping year ended Sunday night, October 31. Practically all of the Valencias have gone forward, though there may be a dozen or 15 cars yet in Southern California. Northern and Central California will soon be shipping new crop Navels. Oroville, Butte County, will probably win first honors, expecting to ship its first car Saturday of this week, though Covina, Los Angeles County, claims credit for first car of new crop Navels, which went forward Saturday, October 30. This, however, is shipment of freak "off bloom" which resulted from a warm January spell. These shipments, of which there will be about 20 cars, are now going forward. Last year at this date there were still 2,200 cars of Valencias to go forward.

Shipments 1919-1920
Southern California: Oranges, 30,025; lemons, 8,733; total, 37,758. Last year: Oranges, 35,436; lemons, 9,441 total, 45,177. The year 1917-18: Oranges, 14,346; lemons, 6,197; total, 20,543.
Central California: Oranges, 5,391; lemon, 289; total, 5,680. Last year: Oranges, 3,737; lemons 264; total, 4,001. The year 1917-18: Oranges, 2,536; lemons, 115; total, 2,651.
Northern California: Oranges, 261; lemons, 23; total, 284. Last year: Oranges, 256; lemons, 5; total, 261. The year 1917-18: Oranges, 203.
This makes total shipments for all citrus fruits in California: Oranges, 35,445; lemons, 8,843; total, 44,288. Total for all citrus the year 1918-19: Oranges, 39,429; lemons, 10,010; total, 49,439. For the year 1917-18: All citrus, 23,397. 1916-17: All citrus, 54,504.

Shipments This Year
Shipments of citrus fruit to date since November 1, 1920, Southern California: Oranges, 14 cars; lemons 18; total, 32. To same date last season: Oranges, 213; lemons, 26; total, 249.

TIRES ON Time Payments LESS THAN WHOLESALE!

In order to raise cash for the next 30 days on a \$100,000 stock of the famous

PORTAGE TIRES

we are making the following most extraordinary bargain offer. These tires are new STANDARD FIRST QUALITY (see letter below), and made by a factory that has a reputation of selling one of the best tires manufactured. In order to raise cash quickly on this purchase, we offer this \$100,000 stock at

33 1/3 % Discount

with an extra 10 per cent discount for cash in full with order.

Terms: One-half cash, balance \$5.00 per month on lease contract.

Stock consists of Standard Portage Tires, smooth, non-skid and cord, at the following list of sizes and prices, f. o. b. Los Angeles.

Price List

Tire Size	Description	Retail List Price Was	Now	Price With 33 1-3 off Terms	10% Additional Disc. Cash
30x3 1/2	Regular Clincher, Smooth.....	\$25.62		\$17.08	\$15.38
30x3 1/2	Straight Side, Smooth.....	29.76		19.84	17.86
32x3 1/2	Straight Side, Non-Skid.....	33.40		22.27	20.05
31x4	Regular Clincher, Smooth.....	35.90		23.94	21.55
31x4	Regular Clincher, Non-Skid.....	37.58		25.06	22.56
32x4	Straight Side, Smooth.....	38.75		25.83	23.25
32x4	Straight Side, Non-Skid.....	42.90		28.60	25.74
33x4	Straight Side, Smooth.....	40.30		26.87	24.19
33x4	Straight Side, Non-Skid.....	45.20		29.80	26.82
34x4	Straight Side, Smooth.....	44.10		29.40	26.46
34x4	Straight Side, Non-Skid.....	46.05		30.70	27.63
33x4 1/2	Straight Side, Non-Skid.....	60.65		40.45	36.40
34x4 1/2	Straight Side, Non-Skid.....	61.10		40.77	36.70
35x4 1/2	Straight Side, Non-Skid.....	63.55		42.37	38.14
36x4 1/2	Straight Side, Non-Skid.....	64.30		42.87	38.60
35x5	Straight Side, Non-Skid.....	76.90		51.27	55.15
37x5	Straight Side, Non-Skid.....	80.60		53.74	48.37
CORDS					
34x4	Straight Side, Non-Skid.....	65.30		43.54	39.19
32x4 1/2	Straight Side, Non-Skid.....	73.60		49.07	44.17
34x4 1/2	Straight Side, Non-Skid.....	77.40		51.60	46.44
35x4 1/2	Straight Side, Non-Skid.....	79.40		52.94	47.65
36x4 1/2	Straight Side, Non-Skid.....	81.17		54.02	49.10
35x5	Straight Side, Non-Skid.....	94.71		63.14	56.83
37x5	Straight Side, Non-Skid.....	100.95		67.20	60.57
36x4 1/2	Straight Side, Non-Skid.....	81.27		54.18	48.77
35x5	Quick Detachable, Non-Skid.....	94.71		63.14	56.83
32x4	Straight Side, Ribbed Cord.....	61.79		41.20	37.08
33x4	Straight Side, Ribbed Cord.....	62.37		41.58	34.43
34x4	Straight Side, Ribbed Cord.....	68.82		45.88	41.30
34x4 1/2	Straight Side, Ribbed Cord.....	72.08		48.06	43.26
35x4 1/2	Straight Side, Ribbed Cord.....	73.86		49.24	44.32
36x4 1/2	Straight Side, Ribbed Cord.....	75.60		50.40	45.36
35x5	Straight Side, Ribbed Cord.....	89.72		59.82	53.84
37x5	Straight Side, Ribbed Cord.....	93.92		62.62	56.36
36x4 1/2	Quick Detachable, Ribbed Cord.....	75.60		50.40	45.36

All tires are shipped in original wrappers, which assures you that there are no blemishes. In case we are out of sizes we reserve the right to refund money to any purchaser.

Letter Confirming This Extraordinary Purchase

PORTAGE TIRE & RUBBER COMPANY,
Akron, Ohio
San Francisco Branch

October 26th, 1920.

Mr. Max Livingston,
Los Angeles, Cal.

Confirming our telephone conversation of today and thanking you for the business which you have just seen fit to give us, will say that we are very busy in the office this afternoon making arrangements to get the shipment of tires on its way.

The tires that you have just bought are the standard first quality tires manufactured by the Portage Tire and Rubber Company, and our only reason for offering these tires at this exceptional discount is to make room for our new SKIDLOCK TIRE. This you will realize does not make what is generally known as a "factory second" out of our tires. The factory gave us permission to sell these tires with the understanding that we would brand them with a small second stamp over the serial number.

Yours very truly,
PORTAGE TIRE & RUBBER COMPANY,
By A. B. Chapman.

ABC-EBC

Now is the Time to Stock Up!

We are looking for good substantial people who appreciate good tires at the lowest prices yet offered. We would not offer these tires on time payments if we did not think it was safe to do so. You will like them and order more. Be sure to give sizes wanted and shipping instructions complete. Make all checks payable to MAX LIVINGSTON. Shipments will be made promptly.

Max Livingston
150 South Main St., Los Angeles, Cal.

Every Hen Advertises

THE hen that is fed on SURELAY advertises her appreciation by giving you a uniform, profitable egg-production. She is happy on her job—and she makes good! Just so, the hen that does not give you a uniform, profitable egg-production advertises her need for a balanced feed like SURELAY.

It's the whole story—there's no secret about it. Neither is there any secret about SURELAY—or what it will do. It is a clean, prime quality-feed that has stood the test of time—that has won the favor of countless hens and the faith of thousands of poultrymen.

SURELAY contains the exact ingredients your hens need to bring about the greatest egg-production in the most natural way. And these ingredients are balanced and blended more skillfully than can possibly be done by hand. There is nothing in SURELAY to throw your hens "off their feed." Our daily laboratory tests insure absolute cleanliness and uniformity day-in-and-day-out!

If you want to see why SURELAY has won a host of friends who advertise its profit-producing power—if you want to see how this uniform quality-feed "makes your hens pay by making them lay"—send for our booklet, "Makes Hens Happy."

*Your copy is waiting for you
—all you need do is to fill in
the coupon and mail today!*



SURELAY

"A Sperry Product"

STOCK AND POULTRY FEED DEPT. SPERRY FLOUR CO. 602 ORIENT BLDG., SAN FRANCISCO

Please send me, without obligation, your booklet, "Makes Hens Happy."

Name _____

Address _____

CALIFORNIA CULTIVATOR

and **LIVESTOCK** *and* **DAIRY JOURNAL**

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

November 13, 1920

No. 20





OAKLAND OWNERS REPORT RETURNS OF FROM
18 TO 25 MILES PER GALLON OF GASOLINE
AND FROM 8,000 TO 12,000 MILES ON TIRES



THIS NEW OAKLAND SENSIBLE SIX FOUR DOOR SEDAN IS POWERED WITH THE FAMOUS 44-HORSEPOWER, OVERHEAD-VALVE OAKLAND ENGINE

LET your new car be an Oakland Sensible Six Sedan. For the farmer, as for every other class of citizen, this is the thoroughly practical automobile. It is the most useful car, providing homelike comfort and security in any weather. It is the most sensible car, linking its many advantages to the minimum of operating

cost. The present Oakland Sensible Six Sedan retains the proved high-power and light-weight principle of construction in an even stronger chassis of longer wheelbase. However you judge it, whether by performance, reliability or economy, it affords a value not to be duplicated in any other type of automobile.

OPEN CAR, \$1395; ROADSTER, \$1395; FOUR DOOR SEDAN, \$2065; COUPE, \$2065
F. O. B. PONTIAC, MICHIGAN. ADDITIONAL FOR WIRE WHEEL EQUIPMENT, \$85

OAKLAND MOTOR CAR COMPANY, *Pontiac, Michigan*

OAKLAND
SENSIBLE SIX

California Cultivator

Vol. LV, No. 20

Los Angeles, November 13, 1920

One Dollar Yearly

The Dairyman's Opportunity

By R. P. Royce



HERE are many reasons why the present might prove a good time for the dairymen of this state to take a little time off and do some figuring on their business—take stock of their present operations and take a peep ahead a few years.

The dairy industry represents one of the most important industries of California, and in many ways we have reached a commanding place, but during the past few years it must be admitted that certain factors have developed that have tended to discourage the average producer. Generally speaking, it has been felt that dairying did not return the profit to the producer that he had a right to expect. In an effort to correct that state of affairs the industry has found it necessary to effect an organization that is primarily engaged in marketing problems. Though beset by a formidable array of interests that have sought to break down the organization, much headway has been made and there is promise that, if followed up, better conditions will be established in the marketing end of the business.

Broadly speaking, there are two main problems that confront the dairyman. One is the problem of marketing, the other is the problem of production. Of the two, it is difficult to state which is the greater, but the writer is inclined to place greater emphasis on production for the reason

that the marketing problem is limited in development by certain economic factors that simply will not down, whereas the problem of production need acknowledge no limitations except those established by the intelligent effort the producer brings to his business.

In other words, while the price of dairy products can be forced to higher levels, the price can only go to such a point as will be met by the consumer, for there can be no doubt that there is a price point where the consumer will cease to buy freely. We don't know exactly where that point is (during the last few years our ideas have been very materially revised), but we do know that the peak point of dairy products will be lowered along with peak points for other commodities. On the other hand, the cost of production can be lowered by the producer employing factors over which the consumer has no control.

Recognizing the above facts, and they must in the end be recognized, the profit of the producer will depend upon the margin between production costs and selling price—the wider the margin the greater the profit. The producer's big problem, then, is to keep lowering his production costs, and the man with the lowest production cost will be making the most

profit, regardless of what the selling price happens to be.

That the dairy industry is certain to face a readjustment along with other farm and factory products there can be no doubt, and while no one knows how soon or how great will come this readjustment, the dairyman who believes otherwise is just whistling in the dark and treading on unsafe ground.

The wise dairyman will therefore, while making his plans for the future, keep in mind that sooner or later his industry is due for a readjustment and make every effort to place himself in a position of strategy.

This can be accomplished most certainly through the use of better cows, and the problem of better cows begins and ends with pure bred. It begins with pure bred for the reason that only through the use of such well bred cattle can improvement operate, and it ends with pure bred for the reason that the possession of an entire pure bred herd should be the ultimate goal of all.

There is no question as to the value of pure bred dairy cattle, and right now we are having a striking demonstration of the value of better blood in the prices that are being paid for the better sort of grade cows. During the past few months grade values have

gone skyward until we are no longer impressed with prices ranging from \$200 up. Of course such prices are only being fetched by the better things—the inferior sorts are not wanted.

Now what has been the cause of new price levels being established for the better sort of grade cows? Why are dairymen willing to pay \$200, \$250, \$300, and in some cases more, for certain grade cows when other grades can be purchased for \$125 to \$150? Simply that the hard headed, practical dairymen know that there is a wide difference in the producing ability of cows and are willing to increase their investment in order to get the more economical producers. It's just sound business and nothing more.

Why do some cows produce more economically than others? There's only one answer; they are better bred. They are better through inheritance, and that inheritance has come from the use of pure bred bulls. And there you have the whole philosophy of the pure bred, and, strange as it may seem, we have seen "practical" dairymen prejudice themselves against pure bred and at the same time recognize quality in grade cattle, quality that only came from pure bred, to the extent of setting a premium on the better bred things.

The point of it all is this: If some grade cows are better than others because they carry more top crosses of

(Continued on Page 646.)

California Farm Bureau Egg Laying Contest

By W. J. Tocher



EARLY every Californian is familiar with cow testing associations and their work.

Every month the tester in charge makes his rounds and each individual in every herd is tested. The records are authentic and official. The motive of the whole work is to develop better dairy animals. Every year we see more and more of the poorer individuals going to the butcher. By eliminating the "boarders" the dairyman can give more of his time to breeding and developing his herd and to augmenting the satisfaction that goes with better stock.

In the poultry industry, as in dairying, the farmer has the "boarder" question on his hands. By various systems of culling—taking into account such points as capacity, constitutional vigor and time of moulting—the skillful poultryman can remove many of his poorer hens. But poultrymen are coming to agree that the only sure method of testing stock is by means of the trapnest. This is a simple device whereby the hen is trapped when she goes on the nest. Here she must remain until released and her leg band number taken. By this method the record of every individual hen is kept and at the end of the year there is no guessing as to her production. Miss Biddy has laid a certain number of eggs, and at so much a dozen her income is easily figured.

So the trapnest is coming into more general use. But what about official records? It is not practical for anyone to go from farm to farm and keep records of each hen. On the face of it the idea is not possible. But poultrymen want records that are official and of whose authentic value there is no question.

It is entirely possible for poultrymen to send their birds to a central location where they may be tested, and tested under identical conditions. Each individual has the same chance as every other. Housing, feeding and care in general are the same and records made are kept by a trained man whose interests are only those of manager. So what is known as the egg laying contest has come into being.

History of Egg Laying Contests

So far as can be learned from a fairly careful examination of the literature at hand, the Utility Poultry Club of England is a pioneer in the matter of holding poultry laying contests. In America we find the history of egg laying contests dating to 1911. The idea of the International Laying Contest at Storrs apparently originated in the office of the North American, a daily newspaper published in Philadelphia. This paper sought suitable supervision and a proper background if it was destined to win the

confidence of the poultry public. Thus it happened that the matter was brought to the attention of those in charge of the poultry work at Storrs (experiment station for Connecticut college of agriculture) and plans were perfected by which the first international laying contest in America was inaugurated on November 1, 1911, and terminated on October 31 of the following year. At about the same time (1911) we find that a contest was established at Mountain Grove, Missouri, through appropriation of funds by the legislature. We find records of contests conducted by state experiment stations at Pullman, Washington; Fayetteville, Arkansas; Lexington, Kentucky; Newark, Delaware; Vineland, New Jersey, and College Station, Texas.

California Contest

In 1918 a few poultrymen of Santa Cruz started a small local contest. Each entrant sent ten birds to the contest building, erected by popular subscription and by the businessmen of the town. Each owner's birds were kept in separate pens; no trapnesting was done. At the end of the year the record was a pen record. Some were very good, but still there was no comparison of the individuals.

In 1919 the Santa Cruz County farm bureau became interested in the work

through the local farm center, and took over the plant. A new house was built and a manager secured to assume charge of the California Farm Bureau Egg Laying Contest. Entries came from various parts of the state and when the contest opened on November 15, 34 different poultrymen had entered 12 of their best birds. The University of California poultry division was asked to supervise the work, which it did through its extension system, represented at Santa Cruz by Farm Adviser H. L. Washburn and Assistant Farm Adviser W. J. Tocher. The work of this department was advisory only. The funds were provided by businessmen and from the sale of eggs. Max Kortum, graduate of the farm school and a man of several years practical experience, was secured to manage the contest.

The contest is still in progress and some very creditable records have been made—records that compare favorably with those of any other contest. The following pen records are for ten hens for a period of 329 days: Bellows Bros., Lakeside, 1,980 eggs; D. B. Walls, Petaluma, 1,926; S. L. Gibson, Santa Cruz, 1,908; W. J. Neef, Santa Cruz, 1,888; Enterprise Ranch, Chino, 1,882. Leading individuals for the same period: D. B. Walls, Petaluma, 272 eggs; Enterprise Ranch, Chino, 241; A. M. Webb, Santa Cruz, 239; R. C. Gibson, Newhall, 237; H. Peck, Santa Cruz, 235.

(Continued on Page 654.)

Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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Combined with California Cultivator 1914
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Saturday, Nov. 13, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

BETTER ROADS

More good roads are coming. The recent election resulted in a big majority for the recall of the four per cent bonds and issuance in their place of others bearing interest rate which will sell them in the present state of the money market. This will give the highway commission power to do work which has been held in abeyance because of lack of funds. Doubtless the commission has been taking advantage of the slowing up of construction work in making plans which will result within a very short time in extension of many miles of good roads. Very fortunately the labor situation will also somewhat advance the work. The board has already announced early resumption of work on the Ocean to Ocean Highway, which will mean relief for Colorado desert sections.

NEW ORANGES

An immense crop of Washington Navelis is just beginning to ripen. Florida fruit has been arriving in Eastern markets for some two or three weeks. It is said to be of very fair quality, but the state is laboring under the handicap of unscrupulous shippers sending much green stuff into market to get advantage of the very earliest prices. The state laws have been set aside, at least as to their most efficient enforcement. On the other hand, California shippers are

asking for more rigid enforcement of state laws and both color and sugar tests are desired. The state department of agriculture reports:

"Shippers of oranges and lemons in Tulare County and Southern California have requested official state inspection for the coming season. One of the largest independent orange distributors in the state in writing to Eastern agents and buyers states: 'All members of the American Fruit and Vegetable Shippers Association, and, I believe, most members of the Western Fruit Jobbers Association, have repeatedly urged the necessity of state or government inspection service at the shipping point to eradicate misunderstandings and controversies that arise in handling f. o. b. purchases. This greatly desired service is now available for the first time in California. Certificates as to the quality and condition of the products inspected are prima facie evidence in any court in the state and thus provide the shipper with a definite protection in case of attempted rejection or railroad claims, and similarly protect the buyer against the shipper billing orders and applying cars that fall below the requirements of the agreed upon conditions of the purchase, whether it be

will be located at Sacramento. The active work of the San Francisco office will be in charge of L. A. Strong, who is one of the thoroughgoing workers and has been deputy quarantine officer for several years. It is difficult to say whether the ocean ports or the railway gateways from the East are most important, but certain it is the railways, especially the railway mail service, present the greatest problem to our quarantine service.

BUY A BAG OF RICE

Here is an editorial written by Secretary R. C. Mason of the Rice Association of California. The rice growers find themselves in a serious situation, and if we, the Cultivator family, can all add a bit more rice to our daily menu it will materially aid in increasing the outlet for this product. Secretary Mason writes:

"The California rice industry is facing a serious marketing crisis and to date talk and more talk is about the only thing that has been accomplished to solve the problem of the

GROWERS ASSOCIATIONS TO MARKET THEIR OWN PRODUCTS

Fresno, November 9.—Special wire from Fruit Growers Convention:

The State Fruit Growers and Farmers Convention opened this morning with large attendance. Every speaker scheduled on the program was present. The theme of this first day was cooperation, and speakers representing a dozen of California's greatest cooperative marketing associations urged the necessity of correct marketing methods. The proposal to establish one great distribution and marketing association, with its own warehouses or centers in all large markets, was met with great enthusiasm, such distributor to be liberally capitalized and governed by existing cooperative associations.—C. B. M.

grade pack or condition of the goods at the time of shipment. We have agreed to pay to this inspection bureau \$250 to apply on our Tulare County business."

This inspection service is under the direction of F. W. Reed, and Mr. Reed is receiving fullest support of shipper and receiver.

STATE QUARANTINE

In the retirement of Frederick Maskew from the office of state quarantine official Director Hecke of the state department of agriculture has been confronted with the problem of finding a successor. The quarantine division has been reorganized and a new office created, or, rather, there has been a transfer of responsibilities from the director of the department to the quarantine division, and the office of chief quarantine officer of California has been created. To take the responsibilities of this office D. B. Mackie has been appointed.

Mr. Mackie comes from the ranks of economic entomologists and brings to the new office a wide experience ranging from the New England states to the Philippine Islands. He had most complete experience with the gypsy and brown-tailed moths in Massachusetts, later was with the scientific staff of the Smithsonian Institute, in 1908 entered the plant quarantine and pest control service in the Philippines, where he remained for ten years, then coming to California, where he became field entomologist of the state department of agriculture and collaborator with the federal department in dried fruit insect work. His practical experiments with control of insects of dried fruits have resulted in the perfection of the vacuum fumigation process which is now being used in a large commercial way, not only in all kinds of dried fruit handling but in the cotton industry. It has proven especially valuable in handling cotton seed brought to this state from other sections. Its value to the date industry is shown in another article in this issue.

Mr. Mackie took up the duties of the new office on November 1. He

growers and the millers. Decisive action is needed to save the industry. For several seasons past the rice growers of California have paid tremendous costs of production, but they have made profits because of their high markets. This season with even greater costs of production than ever before the growers are facing a declining market.

"The Louisiana and Texas rice crops will be large this year, and Burma, Saigon and Siam have large exportable surpluses, figuring into the millions of tons. The law of supply and demand is inexorable, and the California rice industry will suffer seriously unless something is done to increase the demand. The first relief must come from the home market. What we need is more buying of California rice by our own people. Here in our own Golden State we have a type of rice which is the finest cooking rice produced anywhere. The reason it is not more popular is because the consuming public is ignorant of the fact that it is superior to the long grain rices. The mellow sweet California rice meets with big demand wherever its qualities are understood. There is no rice superior in flavor to California rice properly cooked.

"We therefore appeal to the consumer to start something today to help the California rice industry. Buy a bag of rice. With the help of every consumer and grower the rice industry of California will be saved and there will be added to our daily diet an economical food which will bring health and strength to the entire family. For the preservation of the rice industry of California, buy a bag of rice."

EDITORIALETTES

"United, we stick; divided, we're stuck." This is the slogan of the Farmers National Congress and presumably will be set to good lively music at a meeting which is to be held next week at Columbus, Ohio. We are not fully informed as to all the ambitious of this congress, but certain it is they have chosen a great text which, we take it, will be used in various of the sermons or preachments of their convention. California cooperators are rapidly finding themselves in the matter of staying united. Even the federal government has tried to discourage some of the cooperative organizations, but, Glory be! we're still sticking.

A speaker once said, "Thank God for work. Men have never been a spineless race of creatures who shrank from effort. Since the beginning of civilization men have delighted in exertion of strength or faculties for the accomplishment of something." And it seems the greater the difficulties the harder we work and the more we accomplish. And look at the results in comfort and luxuries enjoyed by the human race in 1920!

Are farmers carrying sufficient fire insurance? Where they have had occasion to purchase a bill of lumber or of hardware during the last few months presumably they have been reminded, but the one who has not been in close contact with present day prices it may be well to remind that the cost of building has wonderfully increased and there may be a greater amount of money in implements, sheds and barns than the owner appreciates. In that case, he should call in the county mutual association to extend its protection over his buildings.

Oroville will hold her Orange and Olive Exposition this year on November 15, for the first time since 1914. In 1915 this celebration was omitted because of the Panama-Pacific Exposition. Then came the years of the war, but now in the fall of 1920 Oroville announces the biggest and best Orange and Olive Exposition and its yearly appearance hereafter. It will be a county wide celebration. There will be exhibits of all fruits, but, of course, oranges and olives will be featured. The farm bureau will make an especially large exhibit and will maintain rest room and information bureau where the visitor may learn as to productions and possibilities of Butte County. Oroville expects to entertain visitors from all over the county and the Sacramento Valley.

It may be we can make some money on flax. It seems there is no outlet for fiber in this state, but the demand for oil is greater than ever and at longer prices. A San Francisco mill has discontinued buying the seed, but we believe there is a market in Portland. This is a special crop and should not be undertaken by the smaller inexperienced farmer.

Stick to your Libertys. Of course, we mean Liberty bonds, but it may mean liberties later. They are coming up, and the time is not far away when they will be back at par.

The anti-alien ownership bill won by a most decided majority. The Japanese announce that they will contest it in the courts, and of course the courts are competent to test its validity. Whether the law stands the test is not so important as the fact that the agitation which has brought about the favorable vote for this measure has proved of wonderful educational value. People of the East have learned that there is a question confronting California above that of race prejudice. It is an economic question. Presumably this will be but the beginning of a long campaign which will educate not only Easterners but many on the Pacific Coast as to the true situation.

Answering the question, "What's the matter with America?" a writer has suggested, amongst other answers, "Too many diamonds and not enough alarm clocks; too much envy of results of hard work and too little desire to emulate it." We all have a natural desire for the independence which comes from possession of a sufficiency of worldly wealth, but there are few of us who are willing to pay the price. The vast number in this class will perhaps be more apparent as the months go by.

Down in the Land of Cotton, Dates and Onions

By C. B. Messenger

NOTE in the title we say "down." This word is chosen with full appreciation of its value, for the other day we attended an event scheduled as the "Lowest down event of its kind in history." In fact, the low down-ness of the location is capitalized by the "low down" inhabitants, who maintain that they have arranged the altitude and the climate and that they are proving a great asset.

It was to see the products of this community that a meeting of secretaries of chambers of commerce of Southern California was arranged. Now, chambers of commerce hardly have to do with the field covered by the Cultivator, that is, if we follow the line of thought suggested by the words "chamber of commerce." But in California it is different, and so long as it is different we wish these chambers of commerce would change their names to give a truer impression of their attitude toward our great productive industries. If the name were "chamber of commerce and of agriculture" we believe the organizations would prove truer to name and secure greater interest and greater support from those who are engaged in the agricultural industry which these chambers endeavor to encourage.

But to the story. The secretaries gathered in force last week, some by autos, some by train. All of the talk of all of the sessions had to do, not with commerce but with the agricultural productions of the great Coachella Valley. We say great, not with reference to size so much as to the wonderful quality and range—dates of higher quality than those of Algeria or Arabia, Bermuda onions superior to those of Bermuda, Durango cotton of quality better than the fiber produced in far older cotton growing sections, grapes and grapefruit, the earliness and sweetness of which are remarkable; early figs, and, in fact, nearly all of California's fruits produced at a season from a week to many weeks earlier than those fruits ripen in other portions of the state.

Taking advantage of the occasion when their fellow workers from other fields were there, the slogan of the Coachella Valley chamber was, "We—Want—a—Highway—From—Indio—to—Banning."

This valley was "discovered" only about a score of years ago. A part of the Colorado desert, its only value was considered to rest in the coating of salt over the sink at the lowest portion of the valley and a railway was laid in from the Southern Pacific, salt was scraped up and shipped out in trainloads. Later, someone discovered that a hole sunk into the "worthless" soils higher up the slope brought forth bubbling, pure water. The water on the soil proved so productive that the word was soon passed, and desert claims were staked out all the way from Palm Springs to down near the center of the "sea." Almost everything was planted at first and gradually crops of lesser worth were weeded out. Today the greatest industries of the section are culture of cotton, dates, onions and the other crops mentioned above.

In producing these crops little time was left for the construction of good roads, and during the last two or three years the state has been appealed to to extend its highway system to, or

rather through, the valley. The Ocean to Ocean highway traverses this valley. Still, with lack of ability to dispose of the highway bonds, to secure a route acceptable to all, and the right of way, the desired construction has been delayed. Since the election of November 2 one of these obstacles is about to be removed. Farther, the state commission has decided on a route following the Southern Pacific from Banning to Indio and the right of way is being secured as rapidly as possible, and we understand the long deferred hopes of Coachella and Imperial Valleys as to highway construction are to be realized. However, at the banquet, which was one feature of the event, these cards were at each place: "The people of Coachella Valley request your influence and assistance to 'speed up' the paving of the highway from Indio to Banning," and as the banquet followed a 70 mile all day drive over valley roads it is perhaps not necessary to suggest that the request met with heartiest response.

As a day's ride covered some 50 or 60 different producing ranches it is impossible to describe in detail. The government date gardens, one near Mecca, the oldest in the state, and the other above Indio, were both visited. The Mecca garden has proved a wonderful help in guiding settlers in their work of propagating and planting dates. These gardens are under the supervision of Bruce Drummond, who has been in charge of them for something over 15 years. The reason for the two gardens is that the original planting near Mecca was threatened at the time of the break in the levees of the Colorado when the Salton Sea covered not only the salt beds in the center but created a great inland sea more than 80 miles in length and more than 100 feet deep. Before the break was repaired the waters had risen within a short distance of the Mecca garden and many of the more valuable plants were removed farther up the slope nearly two miles above Indio.

More of Mr. Drummond's work and his success in hybridizing will be given in a later Cultivator.

The commercial side of date production is another story, but in a word, it was shown best at the packing house of the cooperative association of date growers. The dates are delivered at the house in shallow boxes or trays, and the first process consists of putting them into the vacuum fumigator. Several hundred pounds are placed in a great steel container, somewhat like a large steam boiler, and the electrically operated vacuum pump exhausts the air, or rather nearly all the air, for it has been found that the creation of an absolute vacuum causes a bursting of fruit cells and a less attractive product is secured than by exhausting to 26 or within two degrees of an absolute vacuum. Then the pump is stopped and the chamber filled with carbon bisulphide gas. This is the process invented by D. B. Mackie of the state horticultural commission and has been used successfully on many products. It has been shown that the eggs of insects in the interior of a bale of cotton are burst by the outward pressure of their own gases when placed in this vacuum.

(Continued on Page 640.)



Down Where the Dates and Cotton Grow

Photographs taken by Cultivator camera. For description see last paragraph of this article.

Agricultural News Notes of the Pacific Coast

Northern California

Heavy shipments of onions are being sent from Sutter Basin to Cuba.

\$2,200 per acre is reported paid for a Lodi vineyard, no buildings on the place.

Extravagant prices are still reported for carloads of wine grapes purchased by Eastern buyers.

Heavy shipments of celery are now being made from the Walnut Grove and Antioch sections.

Farm Adviser Sullivan of Sutter County is arranging for a women's home canned fruit contest.

D. B. Mackie has been appointed chief quarantine officer for the state, succeeding Frederick Maskew.

Shipments of deciduous fruit from California this year are estimated by shipping companies at 35,500 carloads.

The first conference of high school agricultural instructors of Northern California is to be held some time this month.

A large acreage of barley is being planted in the Sutter Basin this fall, mostly to the new heavy yielding varieties.

Canneries of Sacramento County are said to be urging larger planting of canning plums, particularly Yellow Egg variety.

Sacramento and Placer County farm bureaus have decided to increase their annual dues to \$5.

Fruit growers of the Sonoma County farm bureau have formed a cooperative organization for dissemination of cultural information.

The fruit packing plant of the Zerrillo Packing Company at Healdsburg burned last week, together with a \$5,000 stock of fruit.

Eastern buyers of green grapes have found their purchases disappointing for home wine making, as the grapes did not contain sufficient sugar.

Some \$25,000 worth of California Bartlett pears have been condemned by the Boston board of health because of presence of poison spray on the skins.

Local meetings of the Butte County farm bureau will be held at Durham, November 15; Manzanita (Gridley), 16; directors' meeting, 17; Rio Bonita, 22; Gridley Colony, 24.

Favorable decision was rendered in the suit brought by the California Prune and Apricot Growers against a Napa County grower who after contracting had sold his crop to another party.

R. L. Nougaret of the viticultural division of the state department of agriculture says that California grape syrup was featured at the Cincinnati Beverage Exposition, November 8-13.

The first year of the operation of the Libby, McNeill and Libby cannery at Gridley shows output of 1,000,000 cans of peaches. Additions will be made to the plant before next canning season.

California grape men are beginning early to insist that more refrigerator cars are necessary to handle their crops properly. The ventilated box cars as a substitute this year were not generally considered satisfactory.

Central California

A new dehydrating plant for sweet potatoes will probably be installed at Turlock.

The Fresno County farm bureau held its annual picnic at Selma Park, October 30.

The Merced farm bureau has formed a grain department to handle marketing affairs.

The Kern County farm bureau has reelected all last year's officers. J. J. Duell is president.

The annual meeting and picnic of the Kern County farm bureau was attended by 600 people.

The Visalia plant of the California Cooperative Canneries will be equipped to make olive oil.

Clovis, Fresno County, is shipping two to three cars of raisins per day and the local packing house employs 70 men.

The newly organized olive association at Lindsay, Tulare County, reports the sale of 400 tons of olives. Picking has commenced.

The Sequoia National Park is now closed to visitors while the usual fall work of grading and making turnouts on the roads is being done.

At the last quarterly meeting of the Stanislaus County Farmers Union a resolution was adopted asking congress to put a tariff on almonds.

A record breaking crowd attended the joint picnic of the Merced and Stanislaus County farm bureaus at Livingston Bridge on October 30.

Damages to the extent of \$2,263,000 are claimed by the Tulare irrigation district against the Lindsay-Strathmore district, in legal papers recently filed.

The sawmill project being considered by the directors of the Tulare County farm bureau will come up for thorough discussion at the meeting held November 15.

Estimated increase of 20 per cent in shipments of Washington Navel oranges from Tulare County has been announced by the California Fruit Growers Exchange.

The Arizona American Cotton Growers Association expects to establish a branch at Bakersfield to care for the 27,000 acres of cotton grown in the San Joaquin Valley.

Fig growers in the San Joaquin Valley are up in arms over heavy fig importations. Last year White Adriatics sold for 15 cents a pound; this year five cents is the best offer.

Tulare County orchardists will ask for a law making it mandatory for every manufacturer of spray material to place on containers the full formula of the contents enclosed.

The sale of the Kounias herd of Holsteins at Modesto recently brought to the owner \$20,500. The top price, \$1,225, was paid for a six year old cow, Dominita Colantha De Kol 2d.

The California Peach Growers have contracted with the government for timber, to supply box materials, of about 60,000,000 feet, in addition to 10,000,000 feet from the Yosemite Company.

Farm home department meetings in Kern County are scheduled for November at Weed Patch, 16; Inyokern, 18; Kern Delta, 23; Beardsley, 24; Wasco, 25; Edison-Fairfax, 26.

Southern California

The new creamery at Escondido is now in full working order.

It is estimated that Imperial Valley will send out 40 carloads of grapefruit.

Rabbits are being imported from Australia to supply the markets of Los Angeles.

The Orange County farm bureau is considering raising dues to \$4 or \$5 a year.

The Escondido Citrus Union held its annual meeting and basket picnic November 1.

Hemet, Riverside County, will hold its second annual exhibit of "Arts and Crafts" December 2-5.

Some 250 cattlemen from Ventura and nearby counties attended the cattlemen's barbecue at Foster Park.

The El Sobrante Rancho near Elsinore is planning to set out several thousand carob trees for stock feed.

Imperial Valley's grapefruit is ripening fully a month ahead of last year's. Several shipments have already been sent out.

The Orange Belt Honey Producers at their recent annual meeting elected S. P. Nealey of Rialto and R. E. Fairchild of Redlands directors.

There is talk of establishing a community dehydrating plant at Nuevo, Riverside County, the plant to be the property of the farm bureau.

The San Jacinto city council is considering returning some municipal territory to Riverside County, as present boundaries include too much farm land.

Japanese of California have announced that they will start court action to enjoin the state against placing in effect the anti-Japanese program voted upon.

A New York visitor at Santa Paula, Ventura County, reports California walnuts on sale at retail stores at 50 cents a pound with no European nuts to be found.

The Hemet, Riverside County, chamber of commerce proposes a Hemet-Brawley highway that will shorten the Los Angeles-Brawley travel by 62 miles.

The \$600,000 dam across San Dimas Canyon, Los Angeles County, is now under construction and a new temporary city of bungalows and tents is rapidly building.

The California Lima Bean Growers Association reports no probable changes in November, carload lots standing at \$6.75 per hundred, but supply is getting lower.

General Manager Millsbaugh of the California Honey Producers Exchange announces that the "Sunni-Hunni" advertising campaign is already showing results in stronger demand.

Official apple picking under the association began in the Yucaipa Valley, San Bernardino County, October 13, with the exception of Oak Glen, which is at least a week later. Wine-sap and Rome Beauty are the two earliest.

Santa Paula has a new "bug house" with a capacity sufficient for hundreds of thousands of inmates—parasites of citrus insect pests. It belongs to the Santa Paula Citrus Association and is in charge of A. A. Brock, formerly horticultural commissioner.

The Coast and General

Alaska is demanding better roads and more of them.

It is expected that cotton fields of lower California will produce 70,000 bales.

Strawberry fields in Lewis County, Washington, are reported seriously infested with strawberry weevil.

In the first nine months of 1920 more than a million tons of phosphate were shipped from Tampa, Florida.

Florida has 1,384 dipping vats to help control cattle tick and 55,000 cattle were dipped during September.

The annual meeting of the Washington Horticultural Association will take place at Spokane, December 13-17.

Oregon prune growers estimate loss of 60 per cent of the value of their crop due to rains at harvesting season.

A new agricultural college for the Northwest is proposed to be established by the Presbyterian church at Yakima, Washington.

There is shortage of storage space for Yakima Valley, Washington, potato crop and much of it will have to be pitted on the farm.

The October precipitation of snow and rain about Flagstaff and Williams, Arizona, was the heaviest in years and the stockmen are jubilant.

In a recent test crop at the experiment station at Moro, Oregon, Triplet winter wheat gave the heaviest yield of the several varieties tried.

A cotton grower from the South, now in Butte County, states that many sections of California and probably farther north will produce good cotton.

A 45 acre loganberry field near Salem, Oregon, returned a gross income to its owner of more than \$1,000 an acre. Net return per pound was more than 13 cents.

Entries for the Pacific International Exposition at Portland show an average increase in all classes over last year of 60 per cent. The exposition is to be held November 13-20.

The first farm bureau booth ever shown in western Washington was displayed at the district fair, Puyallup, and attracted much attention, being filled with excellent soil products.

The federal forest reserve has announced that Nevada stockmen will be allowed grazing privileges in the Humboldt forest reserve as in 1920, but for a shorter season by 15 to 30 days.

At a meeting in Johannesburg the Chamber of Commerce of the United States of America in South Africa was organized. The purpose of the chamber of course is to extend American trade in that section.

Professor T. Harvey Johnston, from the University of Brisbane, Australia, is visiting California and hopes to receive aid as to the best means of controlling the prickly pear cactus pest, introduced from California.

"The Coast Packer" reports that a bright stranger on the Erie dock in New York took up his stand by a car of grapes and in fifteen minutes sold \$2,000 worth to a swarm of Italian buyers. While the buyers went after their trucks and push carts the stranger vanished with the money in his pocket and the real owner of the grapes had to do the explaining.

Dr. H. S. Reed on Citrus Pruning

By Ernest Branton

UNDER the auspices of the Orange County farm bureau, Farm Adviser Wahlberg presiding, a citrus school, with orchard demonstrations, was held at Anaheim, October 27-30. The lectures were given under a huge pepper tree on the W. R. Ward ranch. Dr. H. S. Reed spoke at the forenoon session of the 27th on lemon pruning and in the afternoon on orange pruning; saw and shears work following in near by orchards. The main points of the talks, as caught in copious longhand notes, were as follows:

"We prune lemon trees for crop and to shape correctly for permanent production. Trees will produce heavily for years without pruning and then need heavy surgery, but this is not the best way. Rational pruning should induce a good crop each and every year. Lemon trees naturally bear long upright shoots, with few laterals, but which branch on the end, bear

parable with those on deciduous trees recording annual growths. The lemon makes a growth, stops, the mere tip of the terminal seems to die but eventually resumes growth and a slight ring is formed where the tip apparently died.

Pruning

"Cut out the rankest growths only. Nip off terminals with thumb nail when 18 to 24 inches long. Cutting back to stubs of six inches, as often practiced, provokes large woody growths, not fruit. So cut back for elbows not less than 12 to 16 inches apart which compare favorably with the tree's best crop producing growth. Prune centers open so light may get in (not air, for there is always plenty of fresh air), and induce inside growth and inside fruit. Leaves cannot function except in light, so no fruit spurs can develop in congested centers; the twigs start but leaves soon fall off



Dr. Reed Talks and Prunes

Upper view, Dr. Reed and listeners under W. R. Ward's large pepper tree. Lower view, Dr. Reed about to prune a lemon tree. Farm Adviser Wahlberg on his left; C. T. Davis of Davis Brothers, owner of orchard, on his right.

fruits and subsequently arch over. Objections to these growths are that they swing about and bang fruit against everything in reach and may break if pulled down by heavy yields.

"Some pruners take off these shoots, but this will not build a large tree, so we must leave some for framework. We also need all the leaves we can save, for they manufacture organic food for building wood. Crude sap is nearly pure water with a small mineral content, but building material all comes from the leaves, so do not remove all so-called sucker wood. Moderately head back the chosen long shoots to make framework, but always head to a lateral, generally one leading outward. By this heading of length growth we force out laterals as the rapidly growing shoot steals sap from others and heading throws back and breaks flow so dormant buds below will develop. Arching throws only topside laterals but a headed shoot sends forth on all sides.

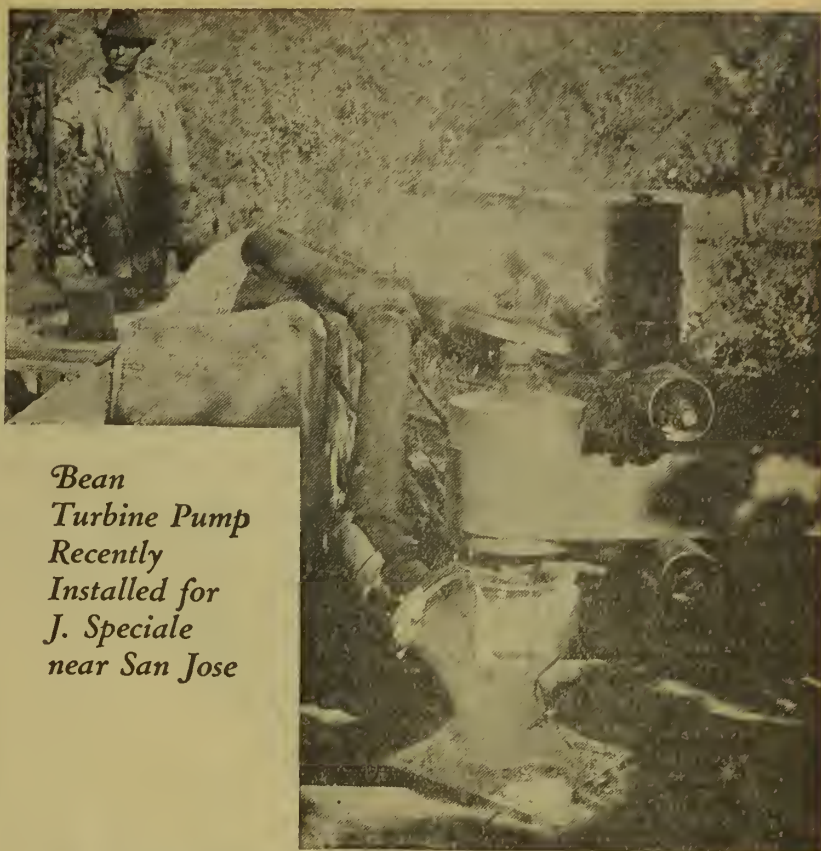
"There are some conditions peculiar to lemons. A framework of elbows is common, branches running up a distance and then making an elbow or set-off before resuming upward growth. But central growths make no elbows and bear little or no fruit. Somehow, we know not how, the natural elbows check sap flow and thereby produce fruit. Select your wood. Strong shoots of upright uninterrupted growth are not so good as those with slight rings showing seasonal growth, rings com-

and twig dies. The heaviest pruning should be done in the spring and but lightly at other times. Keep lower branches from actual contact with soil but allow them to hang low. Prune between growth cycles or when length growth has ceased and the tiny dead tips spoken of are to be seen. Lemons set now bring summer crop, when demand is strongest.

Pruning the Orange Tree

"Young orange trees make bushy tops for first year or two and afterward long weak growths in direction with the prevailing winds. Twice each year go over your orchards to train young trees. Too many branches come out at same point of main trunk and some of these, become nearly choked in after years. There is improper distribution; nurserymen should pay more attention to training. If they do not the orchardist should.

"Trees should be headed not less than 30 nor more than 36 inches high. Three to five leaders are enough and no two of these should issue at same height, but be evenly distributed around the trunk at four inches apart up the trunk. Do not allow 'cross over' limbs, for when the tree grows larger they will have to be removed, so do it when young and thus conserve energy. If new growths shoot up pinch off terminals, but if not done then wait until laterals start and



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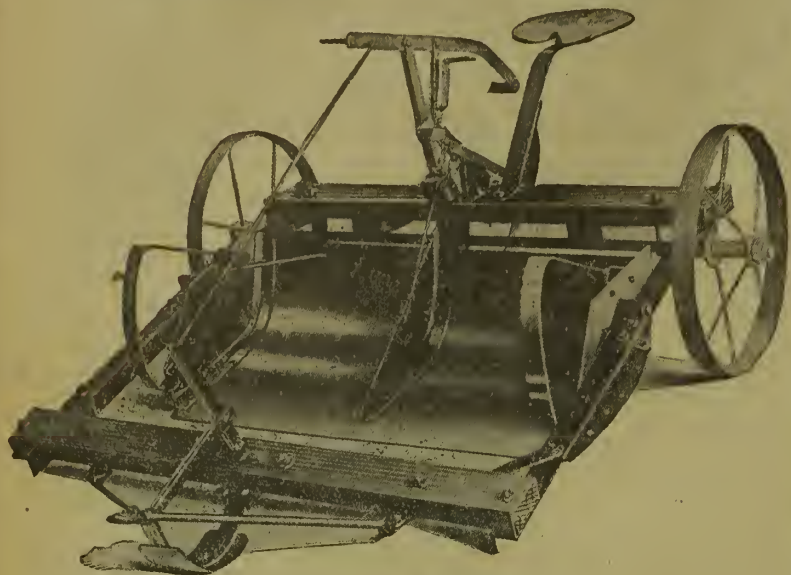
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prune just above a good lateral while terminal is still growing.

"In older trees, those in bearing, a good rule is to prune moderately, never severely. Remove only wood that has ceased to produce—it is generally dead or nearly so. Remove real suckers or riders. Thin to let in light to centers, for the orange, if left to itself, becomes a dense tree. Do not prune an open top and allow inside limbs to sunburn on top side, but let in light, for new wood will not come to take place of old wood if light is insufficient. The aim should be to thin to let light in from sides, not from top. If top is opened and wood sunburns no new growth will start from the burned wood. Whitewash if too much exposed.

"After pruning, the tree should have

the same general outline as before but one should be able to see through the top. If suckers or riders come always remove before they get more than a foot or two long. If left they soon reach the top and branch freely, making an unwieldy, long handled umbrella. They are then robbing the tree at both ends, of sap supply below, and by overshadowing at top. Riders run up to three or four feet, branch out and fruit pulls them down on top of parent limb and the latter ceases to bear. On young trees leave lower branches as a curtain to protect the trunk, for sap flows more freely through delicate or tender bark and trees fruit most heavily near ground. Ideal soil for citrus trees is sandy loam for three feet and clayey loam beneath."

The Northern Citrus Belt



MEMBER of the Cultivator editorial staff recently visited the extensive holdings of the James Mills Orchards Corporation at Maxwell, Colusa County, and at Hamilton City, Glenn County. Though a thorough inspection was made, it was felt that in view of his extensive experience with citrus orchards in Riverside County, Mr. Mills should draw a comparison between the practices found necessary in the two widely separated regions and we give herewith the contents of a recent letter from Mr. Mills:

"We found that we had to immediately change from horse tools to tractor tools. At first there were no orchard tractors which were fit for our work, but at the present time we have an excellent equipment which handles our work in the best possible way. We have found it absolutely impracticable to handle the orchards in a satisfactory way with shallow cultivation and we are now working our land to a depth of eight inches.

"At first we decided to grow cover crops, but the natural vegetation was so rank that it crowded out our cover

what higher. We need more water here, particularly at Hamilton, than we did in the southern part of the state. Our soil is practically uniform in depth and of a fine silty loamy texture to approximately 18 feet where we have good water bearing gravel, and this soil does not hold the water as our soils in the south did. This is, of course, particularly due to the fact that the soils here are lacking in sufficient vegetable matter yet not poor in humus. I do not mean to imply that the soils of the south held the water because they were rich in vegetable matter, where as a matter of fact in most cases they held the water because the water did not have a tendency to run through them, due to the nature of the subsoil. Here we have no sub-soil which is in any way impervious to water.

"To more rapidly increase the humus content of our soil we planted alfalfa in several of our orchards. With the equipment we had it was impossible for us to keep the alfalfa from crowding in toward the trees and while the alfalfa was in the orchard the trees did not make a growth equal to the growth on our other plantings. We consequently plowed it under. At the present time the orchards in which the alfalfa was planted are making by far the largest growth, and more interesting yet we have only had to irrigate them every six weeks to two months, while the other orchards have required a thorough irrigation at least every month to five weeks. This was not true before so we can only attribute the change to the very large amount of vegetable matter which we have incorporated in the soil.

"Another big factor which we have had to combat is the factor of winds. This trouble, of course, was experienced by all the early farmers in the south when the Santa Ana swept over the Riverside country. We planted windbreaks, as you saw when you were here, and we have also planted interplants. We planted interplants for two reasons. One reason naturally was to get as large an income from the orchard planting at as early a date as possible, and the other was to reduce the winds. In one plot of 17 acres, in which we have apricots planted, we have so modified the pruning of the apricots that the branches of the apricot trees almost meet over the top of the oranges. On a very windy day one may stand in the apricot orchard and the wind will hardly move a hair on the head. Consequently, we have been able to get 100 per cent larger yield of fruit on the orange trees interplanted in the apricots than we have on any of our other plantings, and better yet practically all of the oranges would market as inside fruit. They are as smooth as glass and practically not scarred by winds. The same applies to some of our lemon plantings at the other ranch, in which we have interplanted almonds. The interplants have hindered our cultivation work somewhat, but with the small orchard tractors which we now have it is quite practical to carry on our cross cultivation in a very efficient manner.

"As to the actual handling of our trees, the only thing in which we differ from the south is in the fact that throughout the growing season we get a very heavy succulent growth, par-



Apricots and Oranges

Mr. Mills stands in front of an orange tree two-thirds as large as the apricot behind. The two are barely distinguishable. Both are four years old, a phenomenal growth.

crops, and so we gave them up. In the winter the natural cover crops consist of burr clover which stands well above the knees, and oats, barley and other weeds which stand well over the shoulders. One of our biggest problems has been turning under this very rank growth in the spring. We need an immense amount of equipment, for no sooner do we turn it under than it is up again. The only way to hold it down is to continually cultivate for the first two or three months in the spring. The soil is gradually becoming more friable and it is taking less equipment to handle each unit than it did formerly.

"All of our water in the Hamilton unit is supplied from wells. That on the Maxwell unit is from the old S. V. I. Company canal. The water in the Hamilton district stands normally at 18 feet below the surface and our eight-inch pumps set at water level are operating under a 24 to 26 inch vacuum which you can readily see does not mean much of a lift. At Maxwell we are lifting the water as high as 325 feet from the main canal and our power charge will run some-

ticularly in the center of the trees. At the Maxwell ranch this year we have suckered the lemons four times and some of them we are now suckering for the fifth time. On the Hamilton orchard we have run over our orchard three times, but really should have gone over the fourth time. Trees which we opened up this spring had put out so many water sprouts inside of six weeks that it would be hard even to shove your hand through them. By continually taking off the rank growth, however, we were able to throw the vitality of the tree into fruiting wood and into good body branches.

"Our growing season is somewhat different from that in the south. Our trees go absolutely dormant in the winter time. In very long seasons we get as high as four distinct growths during the growing period. This year, however, we have had but three. The first consisting of a fine fruiting wood growth; the second of a rank growth of so-called secondary wood, and the third of a fine fruiting wood. This, of course, does not apply to the water sprouts, for they seem to grow all the time. Undoubtedly the fact that our trees go so dormant in the winter accounts for the fact that we have had no frost damage

to speak of. We did have a little one year when we stimulated some of the trees in alfalfa by a late irrigation. Our winter season gradually comes on us and during the period of the year when the frosts occur our minimum and maximum temperatures do not vary often more than 20 to 25 degrees.

"The biggest problem of all has been that of the June drop on the oranges and the loss of crop on our lemons, due to the drying north winds. We believe we have this difficulty solved and the end of next year will tell whether or not experiments which we have been carrying on have been based upon a thorough knowledge of the conditions. Last year we made a very heavy application of fertilizer, largely nitrogenous. We felt that our winters and springs were so cold that we got very little bacterial action and hence a small amount of food made available in the soil for the early growth of our citrus trees and for the setting of our fruit. The nitrogenous fertilizer applied gave us a much stronger fruiting wood growth and undoubtedly set 100 per cent larger crop than we had set on our young trees heretofore. We have that end of the matter settled, but we have also the drop which is occasioned by the hot drying winds which we get, and the hot days. The temperature of the hot days, by the way, does not exceed the temperature of the hot days which we experienced in the south. Our temperature runs from three to four degrees under the Red Bluff temperature, throughout the summer, and approximately the same in the winter. By comparing Riverside temperatures to those of Red Bluff, you will see about how the weather conditions check up with those in the south.

"In order to solve the problem of this drop which is occasioned by the hot days and hot winds, we have had to come to the old question of summer shade crops. Next year we are going to plant our entire orchards at Hamilton and some of our planting at Maxwell with Whip-poor-will cow peas and black-eyed beans. We are confident that this will give us the same results as it has given in so many places in the south.

When they have done their duty we will plow them under and so increase our humus content. We are confident this practice will both hold the fruit on our citrus trees and cut down the summer injury on our deciduous trees, caused by the dust and the two spotted mite. The severity of our mite and red spider infestation seems to travel in proportion to the amount of dust flying. We are fixing our roads to cut down the dust and we know the shade crop will also help.

"As to the exact acreage on the Maxwell ranch, we have 300 acres of lemons planted in 1912, and 425 acres most of which was planted in 1913. We also have a small pomelo and Valencia orange planting which approximates our total of citrus on that ranch to 789 acres. At the Hamilton ranch we have 330 acres of oranges, all of them Navels, and 10 acres of pomelos. We have a very few Valencias planted here and there and every year they have borne tremendously heavy crops of excellent fruit. It might be well in the future to plant out the Valencias. Another factor which enters, which I failed to remark upon, is that of the time of the ripening of the fruit. Heretofore we have commenced our picking operations on about November 10. This year we expect to start it between the 15th and 20th.

"We have about 500 acres in prunes; 300 in pears; a large planting of almonds; a small planting of apricots. The apricots we find to be a very excellent and profitable crop to grow in this northern section. You saw our trees and noted their excellence and their marvelous growth in the short term since planting. They have produced for us the third year after planting—that is the third year coming four-year-old, \$100 per acre gross, and the following year, which was last year, nearly double that sum. We look for splendid returns from our deciduous plantings. We have also got a planting of olives. We will have, as well, when our grafting is completed next spring, considerable planting of walnuts, the English walnut on the black walnut indigenous to California. We expect to plant quite largely to apricots in the near future on both properties."

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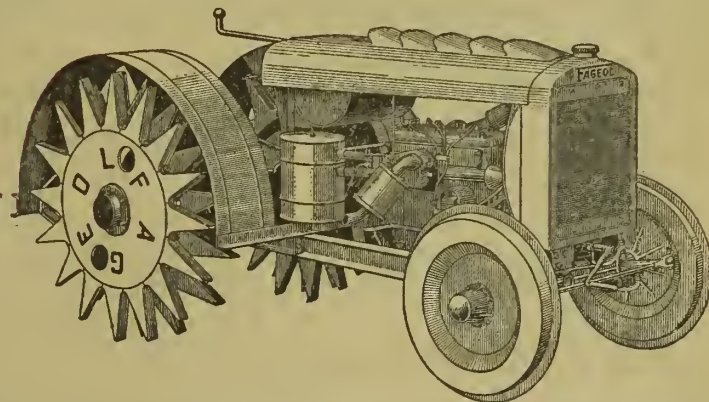
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Strawberry Culture

Strawberries thrive best on rather light soil. The roots are fine and silky and do not easily push into resistant soils. The roots also remain near the surface so that frequent irrigations are necessary and the soil should not cake or bake after irrigation. Of course vigorous plants will become matted vines by midsummer and so shade the soil, water furrows included. For reasons plainly evident the lay of the land should be nearly level.

We are going to quote figures obtained through a visit to a ranch where several acres were set out more than a year ago, fields that have proven profitable and are second to none we know. The fields are within 20 miles of Los Angeles. The figures are liberal but not overstated. The land was fairly fertilized and plowed, but the fertilizer should have been not less than four times as much as was applied. One cannot fill the soil too full of humus or food and therefore a heavy application of stable manure, plowed and re-plowed into the soil, is especially recommended.

The plants were placed on the level, not on ridges as practiced by some. Plowing, marketing, etc., cost \$10 an

acre. The rows were three feet apart and the plants same distance in row. This requires 4,840 to the acre. If Carolina are used, as on place mentioned, the cost will be \$96.80, or \$20 a thousand. Other varieties cost less. It required five people one day, at \$4, to plant an acre, or \$20. Planted about November 1, the cost until February of the second year, or 14 months, was \$200 an acre. This makes approximately \$320 an acre for the "long" year. All labor had to be picked up as best it could. Of course a man of family could lighten this cost materially, as children could do much of the work. As an offset to this expense of \$320, there was a sale of strawberries that came to about \$500, so that the first year returned a net profit of \$180 an acre. The owner estimates the present and coming years will yield an income of \$1,000 an acre. This is not guesswork; figures are based on what has been accomplished to date. The question of varieties is one for self determination in all parts of the state. Find out what does best in your section and plant that sort. The new Carolina was the favorite of eight kinds tried on the ranch in question. The Gibson was second choice.

Irrigation of Prune Orchards

By Leonard H. Day, Commissioner of Horticulture, San Benito County

OBSERVATIONS and study of the conditions of orchards in Hollister Valley the past few years have developed unquestionably the fact that three irrigations per year is almost imperative in mature prune orchards. Possibly in years of heavy rainfall one irrigation about the first week of July and another immediately after the crop is harvested would be sufficient, but under the average rainfall of about 13 inches two irrigations before the crop is harvested are highly desirable. While it is true that we can actually grow and make good returns on prune orchards without irrigation, yet the results are far less remunerative and the trees are apt to sunburn and decline at an earlier age than irrigated trees. The trade is now demanding larger prunes and is willing to pay fancy prices; the orchardist must spare no expense to secure size. Increase in size may double or treble the tonnage of fruit per acre.

Many of the prune orchards in the past have suffered from lack of moisture either on account of too few applications of water or plowsole conditions which prevented penetration of water. In such cases the fruit is small and the leaves fall off prematurely, sometimes before the crop is harvested. These trees come out the following spring with small yellowish leaves at the ends of the twigs. Several years of such distress has caused a great deal of sunburn and dieback in many orchards. Some orchards in which the soil conditions have been improved by deep plowing to break up the plowsole, followed by more copious irrigation, have outgrown this dieback condition in two or three years by this better treatment.

The following is an instance of some investigations which I have conducted with orchards which had been irrigated regularly once each spring and which were for several years losing their leaves before the fruit was ready to harvest. On the 28th day of April, 1919 an orchard belonging to Carl L. Ladd was given a heavy irrigation which penetrated to a depth of about seven feet. Following this the soil was kept in good tilth to prevent surface evaporation. About the 15th of July it was noticed that the terminal growth of these trees seemed to stop growing. A moisture determination showed that the moisture content of this soil was getting near to the wilting point for prune foliage; by the 15th of August the leaves were turning pale and dropping badly, and the fruit was small. This indicated that another irrigation was needed early in July, and Mr. Ladd developed a pumping plant to take care of this situation. This orchard was irrigated on October 1, 1919, and in the spring of

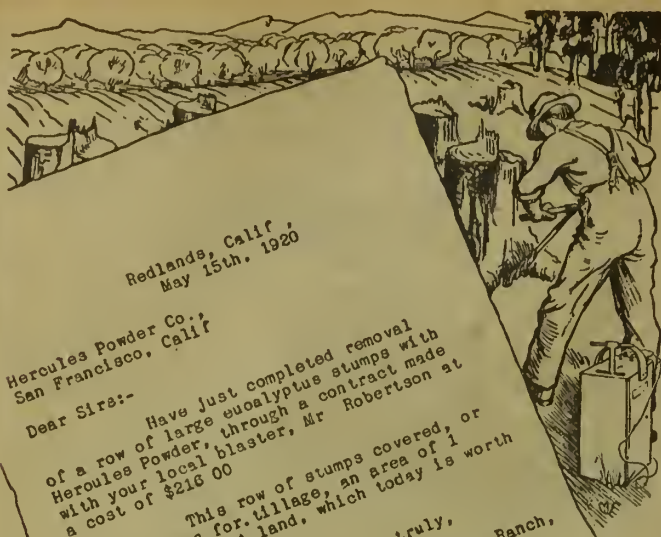
1920, on May 5, and again on July 1. At the present writing (September 1, 1920), the fruit now being harvested is of excellent size and quality and the foliage in good condition. Analysis shows the moisture content of the soil to be well above the wilting point.

Only in recent years have we begun to realize that some varieties of trees will have their roots badly injured by dry soils during the fall, and during winters of light rainfall. This past winter the total precipitation was only nine inches, and this so scattering that no deep penetration resulted. In the spring many prune orchards came out with small and yellowish foliage on the ends of the twigs, and with more or less dieback in the tops. This same condition has been noticed during many previous winters of light rainfall and also in prune trees that suffered for moisture throughout the fall months.

Experiments and studies by the agricultural experiment station have shown that fall irrigation destroys many of the thrips which hibernate in the soil, and that a winter cover crop, if not plowed under until the bloom is out, will usually prevent thrips from emerging from the soil early enough to do serious damage to the bloom. Analysis of many of our soils indicates that in most of the orchards decayed vegetable matter is lacking in sufficient quantities for best results, from both the plant food consideration and mellowness of soil. The successful growing of a winter cover crop for plowing under in the spring depends entirely upon an early start, so that a double purpose is served by an irrigation immediately after the crop is off. Another important consideration is that the red spider does not develop so rapidly upon prune foliage which is kept vigorous by sufficient irrigation.

The recommendation of this office, based upon the foregoing considerations, is that in mature prune orchards we irrigate first in April, second, early in July, and third within a few days after the last prune is picked from the ground. Following each irrigation the soil, as soon as dry enough, should be thoroughly worked into a deep dust mulch to prevent loss of surface moisture through evaporation. During the spring and summer, between irrigations, it is well to cultivate about every three weeks to maintain the dust mulch.

The April irrigation will help decompose the winter cover crop, which had previously been plowed under. The winter cover crop should be drilled, or sowed and harrowed into the moist soil beneath a thin dust mulch created by proper tools following the fall irrigation.



Redlands, Calif.
May 15th, 1920

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The results of what is known as the para-dichlorobenzene treatment for the eradication of the peach tree borer led experts of the United States department of agriculture to believe that a practical means has finally been found of ridding orchards of this disastrously destructive pest. Previously the only effective method of fighting the borer was by removing the soil around the base of the tree and digging the grubs out of their galleries with a knife. It is estimated that the borers have done \$6,000,000 damage a year and that \$2,000,000 a year has been spent in fighting them.

The para-dichlorobenzene method was first used extensively by orchardists in 1919. It consists in sprinkling fine crystals of the insecticide on the soil around the base of the infected tree and covering with earth to hold the gas. The substance is highly volatile and forms gas when the soil is between 74 degrees and 80 degrees Fahrenheit. This gas in five times heavier than air and sinks down through the soil. It is highly effective against the borer; and a pound of the insecticide, costing not more than 25 cents, is sufficient for eight or ten trees. The labor is scarcely one-third of that formerly required. The saving therefore is great.

This year the para-dichlorobenzene process has been used extensively in the Georgia peach belt, some localities buying as high as 50,000 pounds and large individual growers as high as two tons each. Growers declare that it is one of the greatest accomplishments in the history of the department, comparable to the self-boiled lime-sulphur treatment for control of brown rot and scab of the peach.

WATER SUPPLY IN ANTELOPE VALLEY

Antelope Valley, in the southwestern part of the Mojave desert, is one of the valleys that have become important agricultural districts by irrigation from mountain streams or wells. In connection with the rapid development of this valley applications have been made to the Federal Land Bank at Berkeley for loans. In arid regions the value of the land depends largely upon the permanency of the supply of water for irrigation. In some regions where the water is obtained from wells the supply has been seriously depleted by too heavy pumping. Hence the land bank applied to the department of the interior for information in regard to the source and permanency of the water supply of Antelope Valley.

In 1911 the geological survey published a report on the ground water in Antelope Valley by H. R. Johnson (Water Supply Paper 278), which showed that the valley had by no means reached the limit of development of its ground water supply, but warned the water users against the erroneous assumption that the supply is inexhaustible. Since that time considerable development has been made in the valley and it seemed advisable to make a field investigation of the present conditions. Accordingly, David G. Thompson of the United States geological survey made a study of the conditions in the valley in the winter of 1919-20, and has prepared a report entitled "Available Supply of Ground Water in Antelope Valley, Calif., with Notes on Recent Developments." In this report he estimates that about 12,000 acres is now irrigated in the valley and that the limit of safe development has not yet been reached. He shows, however, that the available supply is definitely limited and is certainly not more than sufficient to irrigate two or three times as much land as is at present under irrigation, and that consequently the greater part of the 500,000 acres of arable land in the valley must remain uncultivated because of insufficient water.

The report will be published as a water supply paper of the geological survey, but it will not be ready for distribution for several months. In order that it may be made public without delay advance typewritten copies have been deposited with the Federal Land Bank of Berkeley, the secretary of the Antelope Valley National Farm Loan Association, Lancaster, and the branch office of the United States geological survey, 602 Federal Building, Los Angeles, where they may be con-

sulted by any persons who are interested in the region.

ALFALFA WEEVIL THREATENS CALIFORNIA

Recent advices, followed by appropriate quarantine measures, to insure California against an invasion by the dreaded alfalfa weevil should serve to place the state immediately upon the defensive. The California department of agriculture directs the immediate attention of the alfalfa producing industry to this menacing evil and asks that precautions be redoubled to circumvent any possible inroad by this pest in California. So far this state has been spared the immense losses caused by this insect elsewhere, and thanks to the wholesome aid through the Western plant quarantine board in adjacent states, the danger to a certain degree is lessened. However, a serious prospect is disclosed when we consider this latest rapid advance by the alfalfa weevil toward the California border, necessitating quarantining Washoe County Nevada, only 20 miles from the California line.

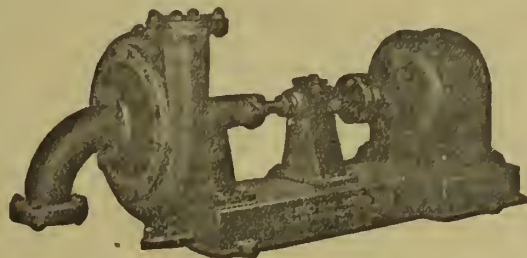
AUSTRALIAN WHEAT

Wheat growers will have lively interest in "Australian Wheat Varieties in the Pacific Coastal Area," Bulletin No. 877, a professional paper which may be had for ten cents in coin sent to Superintendent of Documents, Government Printing Office, Washington.

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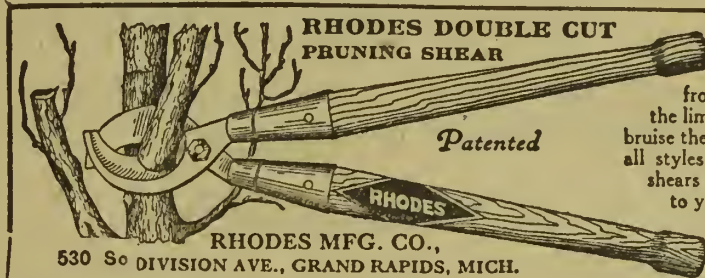
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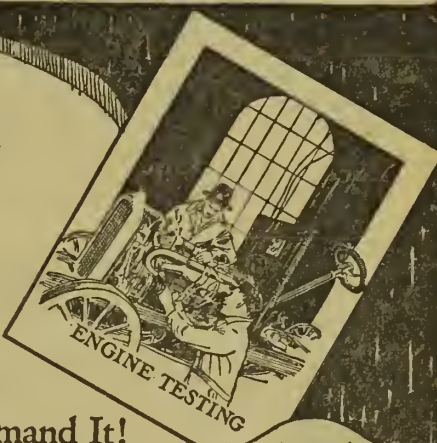
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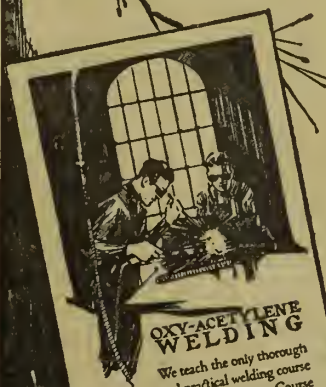
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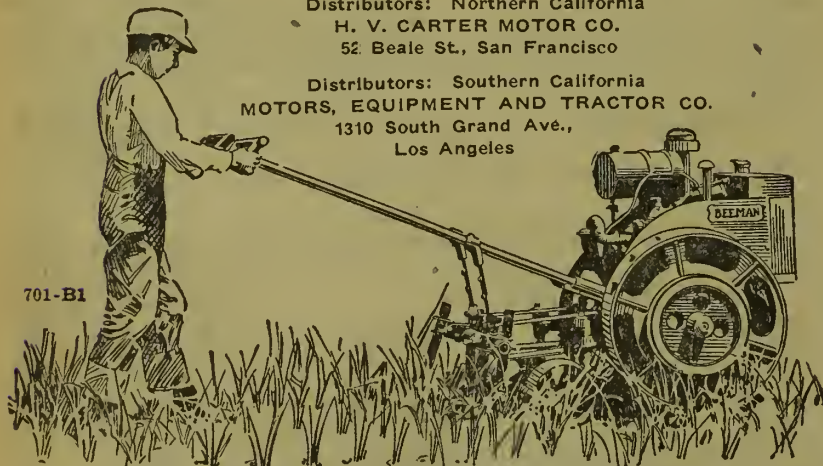
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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Peach Scab

What causes black spots on side of peaches which I send?—Subscriber, Arcadia.

This is a case of peach scab (*Cladisporium carpophyllum*). It is so aggravated on these specimens that one entire side of some of the peaches is affected. There is no remedy once it becomes apparent on the peach. Preventive treatment in the winter or early spring will control. Spraying with Bordeaux or lime-sulphur is sufficient. In fact, if the treatment is given to prevent curl leaf it is effective with this pest also. Some prefer to spray in early December or as soon as the trees are entirely dormant with lime-sulphur, then spray while trees are still dormant before blooming with 5-5-50 Bordeaux. If, however, the spraying is not done while trees are dormant, spraying with 3-5-50 strength of Bordeaux after trees have bloomed is beneficial, but not so effective.

Beet Pulp

Will you please give a short description of the process of extracting syrup from the beets. Is the pulp subjected to heat, and is it chemically treated? If so, with what, and what is the temperature? This query is relative to the by-product "dried beet pulp" as cattle feed and the relative loss of food value over the fresh beets. It seems from recent experiments that heating (above certain temperature) robs vegetable feed of valuable mineral elements, etc.—Subscriber, Covina.

The beets are washed, shredded, carried to diffusion batteries where steam and water extract the sugar which is separated from the pulp. It is then sent to the carbonators, filter presses, vacuum pans and centrifugals. After leaving the diffusion batteries the pulp is usually carried to the drier and prepared for stock feed. All factories, however, are not supplied with the drier and the pulp goes to the silo and is sold to the stock feeder who is fortunate enough to be near the factory. Regarding dried beet pulp Henry's "Feeds and Feeding" says: "Owing to the high prices for concentrates and the favor with which dried beet pulp has been received by stockmen, many factories have been equipped with facilities for thus preserving the pulp. Shaw of the Michigan station found that dried beet pulp compared favorably with corn meal for fattening sheep and steers. It produced larger gains with growing animals, while corn meal put on more rapid gains with fattening animals nearing the finishing period. In the Scandinavian feed unit system the value of dried beet pulp for dairy cows is rated ten per cent below corn or barley. As dried beet pulp absorbs a great deal of water, when a heavy allowance is fed it is advisable to moisten it with two or three times its weight of water before feeding. Though moistened dried beet pulp may be employed as a substitute for corn silage, at the usual prices the latter is the more economical form of succulence for those who can raise most of their own feed. Breeders of pure bred dairy stock recommend dried beet pulp for cows on official test which are receiving heavy concentrate allowances, as it has a tendency to keep the bowels open and is not apt to cause digestive disturbances."

Nitrogen Nodules

Enclosed are roots of cow pea. Are the lumps nitrogen nodules or nematodes or both? I plan to grow a cover crop of barley on the land this winter. Would it be profitable to grow sweet potatoes on this land next summer?—Subscriber, El Cajon.

Nitrogen nodules more than an eighth of an inch in diameter were present. They are easily told for they hang free from the root while nematodes cause a swelling of the root

proper. It is difficult, on account of dryness of material sent, to say if nematodes were present, for one must find a nematode before being sure of its presence. If subscriber will send fresh material, in moss or other moist medium, we will be able to determine. Barley is a good intermediate crop in nematode control and we would not hesitate to plant sweet potatoes following unless nematodes are present in large numbers. Control is all we can reasonably expect for it is doubtful if a field once infested with nematodes ever becomes wholly free. Some growths on root sent appeared suspiciously like swellings caused by nematodes but dry condition precluded definite determination.

Grafting Walnuts

Would you kindly tell me when to transplant one year old black walnut trees that were started from seed from hard shell black walnuts and when and how to graft them onto English walnuts? What kind of English walnuts are the best?—Subscriber, Modesto.

The best time to transplant the nuts is soon after their sprouting in the field bed, when they may be placed directly in the nursery row. They are allowed to make one summer's growth in the nursery row and are then grafted in February or March or at least before growth starts in the spring.

Bur Clover for Cover Crop

Will you please tell me the value of bur clover as a cover crop, if it would be advisable for a walnut orchard, and where it can be obtained?—Subscriber, Whittier.

If bur clover comes up naturally, as it does in many sections, we would surely encourage it and allow it to cover the ground, but Melilotus and vetch have both proven rather more satisfactory as tonnage producers and because of the greater ease with which they are turned under. At one time bur clover seed could be obtained of any seedman advertising in the Cultivator, but more recently it has been difficult to secure.

Cheese from Goat's Milk

Have bought some goats and have been trying to get definite instructions for making a first class commercial goat milk cheese. Have all the bulletins, but they do not seem to treat on the ordinary commercial cheeses. As I understand it "Neufchatel" as described in California bulletin No. 285 is a soft cheese that spoils in a short time.—Subscriber, Orland.

This question was referred to Prof. C. L. Roadhouse of the state university and he writes:

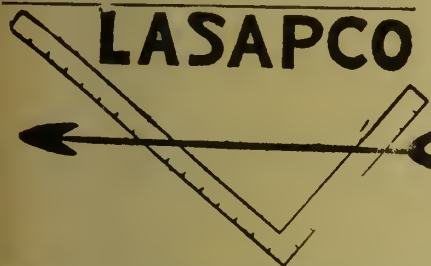
"Reply concerning the making of cheese from goats' milk has been delayed to secure some further information from goat dairies that have been manufacturing cheese during the last few months. We have published a circular on Neufchatel cheese from goats milk, but you state that your inquirer does not desire information on making this type of cheese. We believe, however, that this is the best type of cheese that can be made from goats milk. There are two other types of goat cheese which have been made and sold by goat raisers in this state; one is the Cheddar type of cheese, which is somewhat softer than Cheddar and which has been manufactured by one or two people in the state. One lady, Mrs. L. P. Lommel of Napa, has manufactured a cheese which resembles brick or limburger cheese in consistency. She is making an attempt now to market this cheese in a special container. I believe that the goat industry would do better to market its product in the form of milk wherever it is possible. We recognize goats milk as being very useful, particularly in infant feeding, but it has no special advantages for use in the manufacture of butter or cheese; though it is possible to make these products from goats milk. I know of no one at present who is making the hard type of cheese in California from goats milk and marketing it in any considerable quantity. Summing up

this subject, I believe that goats milk sold fresh or made into Neufchatel cheese places the goat product in the most marketable form, and in these productions it has the greatest palatability and demand."

Pomegranates

Please give me information regarding the pomegranate, climatic conditions, culture, etc., required, also best varieties, and will the varieties have to be mixed for pollination?—Subscriber, Barstow.

The pomegranate is peculiarly suited to the arid regions of California and Arizona; in humid climates the fruit is not so good. Nevertheless a good supply of water is needed to produce a commercial crop. Any easily worked soil with good drainage will do. Monthly irrigations and cultivations are amply sufficient, but do not irrigate later than the end of August. Prune to thin and build a framework for a tree 15 or more feet high. You may propagate freely from hardwood cuttings. Pick fruits before rain falls on them or they may split. Pick-



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ing usually begins about October 1. Cut stems; do not pull off the fruits. Wonderful and Papershell are the two best varieties and both self fertile. Write to University of California, Berkeley, for bulletin (276) issued in 1917, entitled "The Pomegranate," by R. W. Hodgson.

Pumpkin Seeds and Onions

What is the best way to save pumpkin and squash seed in commercial quantities? When is the proper time to plant onion bulbs to raise seed in San Fernando Valley?—Subscriber, Van Nuys.

We presume you wish to use or sell seeds for feeding purposes. If to sell for planting you will have to commence program back of seed saving. No reputable seedsman will buy seed without seeing the crop maturing, no matter what claims are made for it or by whom. He must know for himself. As to actual cleaning, place the seeds in a barrel, without water, and leave until pulp rots, which should take place in three days. Then fill barrel one-third full of seeds, fill up with water, stir up and pulp will float and may be poured off, leaving clean seeds below. Dry seeds on screen or canvas not touching ground, so air can circulate beneath. Never dry on boards as sun will burn them and impair value for seed purposes. Stir twice or more each day until they no longer stick together; otherwise they will mildew when sacked. Onions, to mature seed by May—the best selling time—should be planted in September or October. Some plant last of August; it is doubtless now too late.—E. B.

Eradicating Bermuda

Answering query as to method of getting rid of Bermuda grass, in the Cultivator of October 23, we said:

"The best method of getting rid of Bermuda is that of plowing and cultivation. This is a good time of the year to kill the stuff, as Bermuda does not like cold weather and is almost dormant these cool days, so that cuttings do not root so readily as in the warmer spring months. Bermuda is very easily eradicated by constant cultivation. Of course if one had begun earlier, before summer, by growing a clean culture crop, the problem of eradication would have solved itself. However, we think continuation of the plowing and winter cultivation will bring results, but if it does not, then the expense next summer of giving the clean culture crop could be met by planting beans or other cover crop which will give compensation and at the same time aid in eradicating the pest."

Commenting on this, L. B. Joralmón of Los Angeles writes:

"I am a constant reader of the bulletins of the state as well as those issued by the department of agriculture and I have been a careful reader of the Cultivator for a great many years. I have noticed that the department and your paper have advocated the planting of clean cultivated crops like beans on Bermuda grass land, but I have found from actual experience that this is not a satisfactory way of eradicating the Bermuda grass. In the cultivation of beans and similar crops, the moisture is kept quite close to the surface of the ground just below the dust mulch, which allows the Bermuda grass to feed on the moist ground and it grows very much faster and spreads more rapidly than if the following method is used: We plant our Bermuda grass land to barley or oats as early as possible in the winter and cut same for hay as soon as possible in the spring. As soon as the hay is removed from the field we plow land shallow dry and leave the roots of the grass exposed as much as possible to the sun and heat for about 30 days. We then harrow Bermuda grass out to the surface and burn most of it and cross disk and replot land late in the fall deeper than the original plowing. Most of these operations are done in the hottest part of the season and we find that most of the moisture is taken out by the first crop of barley hay, and two years of this kind of treatment put the land in splendid shape. The method advocated in your article does not work in any case so far as we have observed. Would like to have further discussions regarding this important subject."

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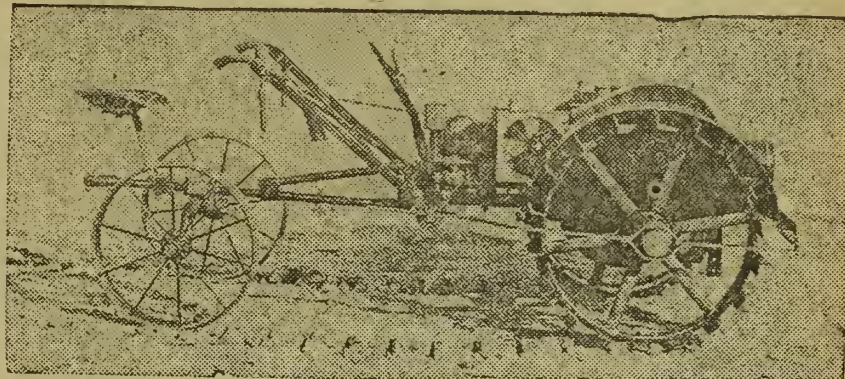
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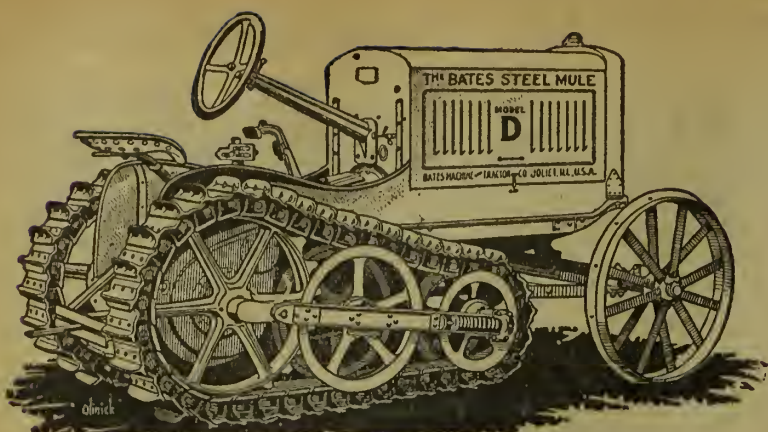
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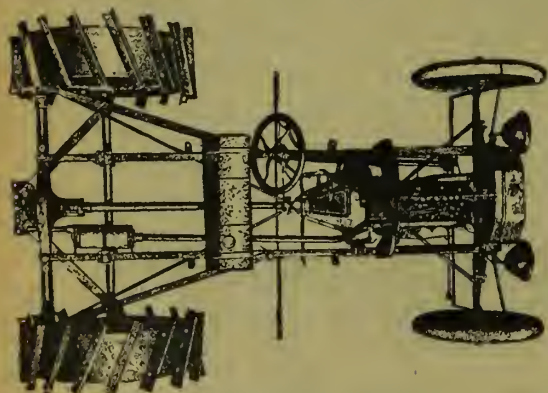
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Grafting Pear on Apple

Could you secure for me reliable information from some commissioner or nurseryman regarding his success in grafting pear onto apple? I know that the two will grow together, but as to making a successful bearing tree or not—that's the point. I have some ten year old apple trees of Rome Beauty and Winesap that I would like to convert into a pear orchard as the apple would be free from blight.—Subscriber, Yucaipa.

This was referred to A. L. Wisker of Grass Valley, who writes:

It is an old and accepted belief among nurserymen that the pear makes an unsatisfactory union with the apple, and that the belief is well grounded is indicated by the fact that no horticultural authority has ever recommended the practice, so far as I can learn, while the contrary advice is frequently given. Three objections are raised: first, that the union is short lived, particularly when top working is practiced, it being claimed that the grafts break away at the union; second, that the pear bears light crops when worked on old apple trees; third, that, owing to lack of affinity between the two species, the apple root does not properly supply the pear top with plant foods in proper proportions, and an under nourished, stunted tree results. I know of exceptions to these three general propositions but believe there is ample evidence in support of them all. Coming now to personal observation, in the orchard of Everett Francis at Colfax there are a few old apple trees that were grafted to Bartlett pears more than ten years since. The union appears to be good. Trees have made less vigorous growth than standard pear trees close at hand. A medium crop is the almost invariable rule. The fruit is usually larger than on standard trees. Apparently it does not differ in any other way from other fruit in the same orchard. In the orchard of Derk Vinkemulder, adjoining, Bartletts were grafted on old apple trees about four years since. The work was skillfully done and the unions have not shown weakness thus far, but the trees have an under nourished, stunted look. A few pears have been produced during the past two years but the behavior of the trees does not promise fruitfulness and Mr. Vinkemulder will graft no more of his apples, although it had been his intention to thus top work about 100. Grafting the pear upon the apple would in no sense reduce the tendency of the former to blight, save in so far as this practice tended to decrease the vigor of the pear. It is a well known principle of pear blight control that retarding the naturally vigorous growth of the pear tends to render the tree much less susceptible to pear blight. I advise your correspondent not to graft his trees to pears but to either take them out entirely and plant pears or graft them to some apple variety that is reasonably successful in his climate. Think Delicious would be satisfactory. It does well in this county among the orange trees.

Measuring Haystack

Please print a rule for measuring hay in the stack. How many cubic feet in a ton of settled alfalfa?—Subscriber, Turlock.

Here is a rule given by Henry Nelson of Chico, who writes that he has found it accurate under all circumstances: From the "over" subtract the width and divide the remainder by two, which will give the height that the stack would be were it flattened down so as to be shaped like a brick. This is always true, no matter how tall the stack nor how wide. Having ascertained the height, width and length of the stack, it only remains to multiply together the three dimensions and divide by the number of cubic feet in a ton. For example: Suppose you have a stack 20 feet wide, 60 feet over and 50 feet long. 60—20 equals 40 divided by 2 equals 20. You have now a stack shaped like a brick. Multiplying its dimensions, we have 20x20x50 equals 20,000 cubic feet; 20,000 divided by 512 equals 39.14 tons." As to volume of ton of alfalfa hay, Ten Eyck of the Kansas agricultural experiment station says: "With alfalfa hay which has been stacked for 30 days it is usual to compute 512 cubic feet as a ton; when the hay has been stacked five or six

months, 422; in old, fully settled stacks, 343; sometimes in very large stacks or mows, only 216.

Yellow Jackets—Bees

An inquirer asks how to prevent yellow jackets from molesting honey bees. The question was referred to T. O. Andrews, inspector of apiaries for Riverside County, who writes:

"The question is new to me, as I never had a colony overpowered by yellow jackets, but sometimes mud-daughters get into hives after the bees become reduced by disease or queenless, but rarely in numbers sufficient to destroy the bees."

Information re Citrus Culture

Where may I get information on the culture of orange and lemon trees?—Subscriber, Los Altos.

The best place is in the orchard of the practical grower who gives attention to up to date cultural methods. The next place, perhaps, is in one's own orchard with such help as may be given by papers like the California Cultivator, which is always ready to submit questions to those qualified to answer. Another source of information is such books as "Citrus Fruit," by Coit, and "Citrus Fruits and Their Culture," by Hume. The latter is published by Orange Judd Co. and Dr Coit's book by the Macmillans. An excellent source of information also is "Citrus Fruits," issued by the R. M. Teague Nurseries at San Dimas.

Protecting Vines from Rabbits

How can I prevent rabbits from spoiling young grape vines? Is there a spray which will repel?—Subscriber, Kingsburg.

There is no satisfactory spray or treatment equal to that of fencing with rabbit tight wire. However, that is fearfully expensive. The trunks of trees have been very effectively protected by smearing them with bacon grease which, if rancid, is all the better, but if the intention is to protect the young growth of the vines no such treatment could be effective. Lime-sulphur spray is not attractive to the pests, but is not a very efficient protection. The best protection would be combination with neighbors so as to reduce the pest either through hunting with dogs and guns or through making a regular rabbit drive. Poisoning with watermelon rind is fairly effective at this time of the year, providing there is dearth of other green feed.

Long Pruning

If subscriber at Pasadena requesting information as to long pruning had given name we would have been glad to send information requested.

Field Mice Destroying Pea Seed

How can we keep the field mice away from our sweet pea seed? The seeds we dipped in Paris Green did not sprout. Do you know of any poison we can dip them in that will not harm the seed?—Subscriber, Santa Barbara.

We question whether any dip or treatment could be given the seed so as to save it from the mice without danger of injury to the germ, but would suggest planting with the seed a sufficient quantity of poisoned grain which might still save the seed. As a preventive use thorough and deep cultivation to destroy their hiding places and complete removal of rubbish piles, weeds or other hiding places in field adjacent. Still better, encourage the natural enemies of these mice. One of the most beneficial of these is the ordinary gopher snake. The California farmer often fails to appreciate the value of snakes and he continues to bruise his heel on its head. This is a serious mistake, for every gopher snake is worth dollars. So far as the mice are concerned other enemies are coyotes, wildcats, foxes, badgers, raccoons, opossums, skunks, weasels, and perhaps better than all, the domestic cat. Hawks and owls should likewise be encouraged. The U. S. department of agriculture at Washington, D. C., has issued Farmers Bul-

let in No. 670, "Field Mice as Farm and Orchard Pests," which may be had for the asking. Another publication issued by the department is Bulletin No. 31, "An Economic Study of Field Mice," by David E. Lantz of the biological survey.

Legal Queries

Louis B. Stanton, attorney 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Pumping Plant Included

I have a mortgage upon an orchard with pumping plant, consisting of well and electric motor. The pumping plant is not mentioned in the mortgage. The mortgage is a year past due and not paid. What right have I to the pumping plant in case I have to foreclose?—Subscriber, San Diego.

Your mortgage doubtless provides that the premises, together with all appurtenances, are mortgaged for the security of the payment of the obligation. The pumping plant undoubtedly will be included within the term of "appurtenances," as it would doubtless be essential to the carrying on of the orchard. Any attempt to remove the motor could be doubtless restrained.

No Right of Way

One man gives to his neighbor verbal permission to go through his barn lot, in doing which it is necessary to open and close two gates. This has continued for a period of more than five years. The licensee now claims that his neighbor cannot close the gates by reason of his having acquired a right of way. Is this correct?—Subscriber, Gilroy.

In the first instance the favor given was merely a matter of license clearly indicated by the placing of the gates and the closing thereof. In the second instance the licensee has apparently made no claim of a right in opposition to the interest of the owner of the property until the present time and apparently can make no claim other than by the verbal permission. It is necessary, to acquire right of way such as this, that the right be claimed for the period of five years or more openly and notoriously and not under any permission. The gates can, therefore, be undoubtedly closed and forever barred.

Husband's Estate

If husband dies without will or children, does the wife receive the whole of the estate?—Subscriber, Los Angeles.

This answer can be given only as of the date of writing prior to November 2, 1920. At this date, in the case specified, in case of community property one-half goes to the wife, the other half descending according to the rule applicable to separate property. The rule applicable to separate property provides that in such event the estate goes one-half to the surviving wife and the other half to the decedent's father and mother in equal shares, and if either is dead the whole thereof to the other. If both are dead, then said half goes to the brothers and sisters and descendants of deceased brothers and sisters.

NOVEMBER FLOWERS FOR SOUTHERN ARIZONA

By M. E. Bemis

ACTIVITIES in the flower garden need not cease with cooler weather, in fact, this is just the season to prepare for the spring and early summer flowers which help to make the home surroundings cheerful and perhaps help more than we realize to make all within the home more contented and happier.

Plantings may be made of calendula, candytuft, carnations, centaurea, clarkia, coreopsis, cosmos, daisies, Globe amaranth, gaillardia, hollyhock, larkspur, mignonette, nicotiana, nigella, pansy, petunia, phlox, poppies, stocks and best of all Spencer sweet peas.

Many of these will do little more than make a good root growth ready for the warm spring days, but the fall and winter plantings are well worth while. Poppies grow here if given even half a chance, both the California and the old fashioned double poppies. Pansies do splendidly, but plantings now will of course mean later flowers than those planted earlier. Common and Spencer sweet peas may still be planted, but it is a little late for the Christmas flowering.

This is the season for planting out bulbs and a considerable variety offers a choice which should suit all. The list for November planting includes hyacinths, tulips, daffodils, paper white narcissus, Chinese lily, freesia, Spanish iris, Calla lily, amaryllis, anemone, crocus, oxalis and ranunculus.

Hyacinths come in a variety of colors. They all come rather high. Most of these are imported, and the larger bulbs are the best, that is, they produce the largest flowers. Bulbs should be planted five to seven inches apart

and with the tip five inches below the surface. Heavy soil should be lightened by adding sand or mulch.

Tulips should be planted with the tip about four inches below the surface. The small flowering varieties do not do so well. The early may be had in a variety of colors, the double in pink, light pink and reddish bronze. Darwin tulips come in a variety of colors. Some seed houses put up collections of mixed tulips which gives one a variety and at about the same cost as the prices of single varieties by the dozen. Daffodils, both double and single, are old fashioned flowers which, like the old songs, are ever new. They should be planted about the same as hyacinths.

Paper White narcissus bulbs may be planted any time during the winter and either indoors or out. Planting in bowls, placing in a dark room and then bringing out after four to six weeks, gives a wealth of flowers at a comparatively small cost. Gladiolus may usually be planted in places where it is not too cold after November 15. They should not freeze. In

climates like Phoenix there would be little danger of freezing at any time during the winter sufficient to do any harm.

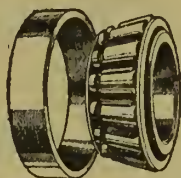
The amaryllis is a pretty flower which does well in Arizona, but like the hyacinth it is rather expensive. It comes in soft pink, velvety crimson and mixed shades. Calla lilies may here be grown out of doors. Freesias and oxalis offer attractive flowers from bulbs at comparatively small cost and with so little trouble to grow that any front yard should be considered incomplete without a few.

LILIES

In addition to our native lilies, *L. tigrinum* and *L. Humboldtii*, there are a number of others which may be planted this month, such as *L. Speciosum album* and *rubrum*, *L. auratum*, *L. Harrisii*, *Easter Lily*, *L. giganteum*, *L. elegans*, *L. Formosum* and *L. candidum*. One of the latest recent introductions is *L. regale*, which is very fine. All these like rich soil and will repay careful attention. The bulbs increase from year to year.

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that over ninety per cent of the farmers who own trucks report that their greatest advantage is that they save *time*?



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The use of Timken Tapered Roller Bearings at points of hard service in the great majority of automotive vehicles is proof of leadership established on the tapered principle of design, quality of manufacture, performance on the road, and service to the automotive industry.

that the overwhelming majority of truck-owning farmers run their trucks from one year's end to another without losing a single day for repairs?

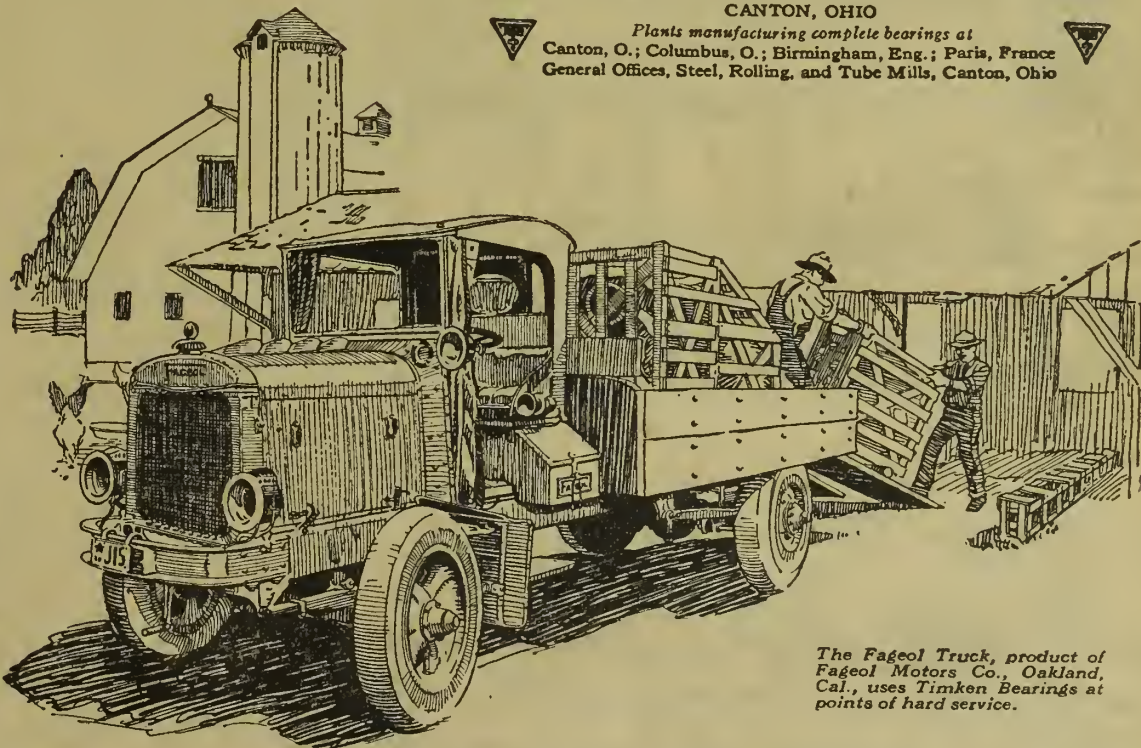
that Timken Tapered Roller Bearings are engineered into trucks for the purpose of making such performances possible?

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TIMKEN

TAPERED ROLLER BEARINGS

Among the Thompson Seedless

By Ernest Braunton



HE writer was told at the office of the Kerman News in the little town of Kerman, Fresno County, that J. A. Johnson of the First National bank knew all about Thompson

Seedless grapes. But Mr. Johnson denied the soft impeachment, though he owns 64 acres of bearing vines, and advised visiting R. R. Evans, eight miles to the northwest. So away



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For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan and Alberta, reduced railroad rates, etc., write Department of Immigration, Ottawa, Canada, or

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Canadian Government Agent.

we went through miles of grape vines on each side of the highway.

Mr. Evans has but 20 acres, ten in bearing, five of young vines and five in buildings, home orchard, etc. But the ten producing acres are a revelation in grapes. They have been planted but five years, yet single vines hang heavy with at least \$3 worth of grapes each. He has contracted the present crop for 15 cents a pound and the yield is not less than two tons to the acre. That returns \$600 per acre or \$6,000 from ten acres planted five years ago. The district in general will yield about a ton or little more to the acre.

Planting the Vineyard

The soil is first leveled to grade and plowed eight or nine inches deep; it is of a soft, yielding sandy type. The plowing is done during the first ten days of February and the planting during the last week in the same month or the first week in March. The rooted vines are purchased from the nurseries as Mr. Evans says that is much cheaper than rooting them at home. As soon as vines are planted they are irrigated, to settle the soil about them as much as for the moisture lodged in the soil. They receive two more irrigations during the first summer. No pruning and no suckering is done the first season.

The second spring the best and most upright cane is cut to two buds and tied to a stake. These stakes alternate in length, being four and five feet long respectively and are driven 16 inches into the soil, one at every vine. It is believed the lower wire needs a support at each vine on account of the great weight it has to carry. But the upper wire needs support about one-half as much, hence the alternating heights. In these days of high lumber prices this effects quite a saving. When the growth is eight or ten inches high one shoot is tied to stake and the others rubbed off. This shoot is carried up the stake 24 inches and the terminal pinched off. Keep all shoots but not leaves off each upright cane to a foot above the ground throughout the season. During the summer three irrigations are given. So endeth the second chapter.

The Third Year

Two wires are strung on the posts, the lower 24 inches above the ground and the other on top of the five foot stakes, or about 18 inches above the lower one. The vines are then tied to the bottom wire. On vigorous growths two canes are left 18 to 24 inches long and two or three spurs two buds long. On less vigorous growths leave no canes, but two or three spurs of two buds each. For the third season three irrigations are given and this is the permanent practice.

Nothing has so far been said about cultivation but the methods are simple and alike for each year. Mr. Evans plows away from vines each spring with a single plow and two horses, seven or eight inches deep, and leaves furrows open until after first irrigation. After each irrigation he plows back with a vineyard gang plow, about four inches deep. This leaves the soil level and smooth as this soil is never lumpy. The picking usually runs from about August 25 to September 5, but is set by the sugar content, and the latter is dependent on the weather. Picking is done by contract, based on trays which hold on an average 22 pounds each. The grapes are dried in the vineyard where picked and hauled to nearest association packing house which in this case is at Biola. Vineyardists do not haul their own raisins as they can get the work done for \$1.75 a ton and boxes returned. The long waits sometimes experienced at the packing house are exasperating to a busy farmer.

While at Mr. Evans' we saw some interesting tests for sugar content. He has a "sugar meter" (saccharometer) and tests grape juice free for neighbors who call. The test is of course based on specific gravity at 60 degrees of heat. Two lots came in Mason jars. These were poured (separately of course) into the testing tube or phial and the meter placed in the juice. It is just like any large glass tube thermometer. It dances up and down in the grape juice and when it stops is read. The grapes from young vines test higher than from old vines. The sample from the latter

was 19 and from the young vines 21. As both samples tested 80 for temperature, two-thirds of a degree was added for the excess of 20 degrees over the meter standard. They should not be picked until they test over 23 per cent sugar for if they are the owner loses in weight. Mr. Evans said the 21 per cent grapes would be ready to pick in a week if weather was normal; if hot, in lesser time. Thus endeth the story of raisins from Thompson Seedless grapes.

DOWN IN THE LAND OF COTTON, DATES AND ONIONS

(Continued from Page 629.)

After refilling the chamber with air a couple of times in order to remove all effects of the gas, the dates pass over the polisher, usually consisting of Turkish toweling on a steep incline or in the interior of a large cylinder. From the polisher they go to the grader, where girls separate them into grades. From the grader they go to the maturator, or ripening room. This is a room maintained at 100 to 110 degrees. The length of time of remaining in this room depends upon the condition of the fruit when harvested. This year's cool weather has deferred ripening and some loss and considerable inconvenience has been the result.

Following this maturing process they are again hand sorted and the choicest fruit goes into cartons from 12 ounces to five pounds. A second grade is also put up and lower grade fruits are shredded, pitted and packed in 25 or 50 pound containers.

Secretary Cardwell of the Coachella chamber of commerce put in many a strenuous hour in preparing for the entertainment of the visitors. One feature, especially informing, was the placing on a big card at the entrance of each station of the journey the number of the station. Then on the program giving route of the "pilgrimage" these numbers gave information regarding the production of the ranch and other notable points. A breakfast of quail with plenty of dates on the side was furnished to delegates by the Ladies Aid. The girls of the high school served luncheon and the Ladies Aid again catered at the banquet. Coachella people certainly gave most cordial welcome to all visitors.

The upper picture shows the date packing house at Coachella. It is a thoroughly up to date building with every comfort for the employes and every equipment for efficient handling of commercial dates. The second from the top is a scene in the Risher date garden. This was formerly the Northup place. The second photo from the bottom shows one of the patriarchs of the valley, a Deglet Nur which has been a record breaker. It is in the government gardens at Mecca down near the Salton Sea. In fact, these gardens were so close to the sea during the time of the break in the levees that many of the more valuable plants were moved several miles up the valley above Indio. A pile of cotton seed is shown in the bottom picture. In the background is a partial view of the cotton gin at Coachella.

FARMERS NATIONAL CONGRESS

The Farmers National Congress will hold its 40th annual session at Columbus, Ohio, November 16-19, 1920. The farmer, farm press, Grange, farm bureau, Farmers Union, cooperative associations, agricultural colleges, extension workers, experiment stations, state and national departments of agriculture are asked to help make this congress a worth while meeting. Students of America's rural conditions will help this congress to invoice the needs of rural America and point the way to relief and remedy.

Potato growers of the United States are paying \$15,000,000 a year for Paris green and other arsenicals to protect their potatoes from the Colorado potato beetle. This does not include the labor involved in the application or the immense loss in yield caused by this beetle. It has been found in nearly all the Western states except California. We must keep it out.

Potato Growers Field Day

By Ernest Braunton

HOW best to grow potatoes in the south end of the state was clearly brought out at the potato growers field meet in various parts of the San Fernando Valley on November 4. And these are the points upon which all agree: Soil should be light, of good drainage, full of humus, deeply plowed, well pulverized and firmed. It should be uniformly moist, almost wet, when potatoes are planted, and a uniform moist condition should be maintained throughout the growing season. Deep cultivation should be practiced early in the season and lighter stirring later. Plant certified seed if possible and practice close seed selection and rogue thoroughly. Good seed is half the crop. Alternate with cover crops every year, preferably with melilotus or vetch or a mixture of the two. All these points were emphasized again and again by the speakers, from the government potato experts to the expert and practical growers.

The meet was held under the direction of the Los Angeles County farm bureau and was first called to order on the Oleson ranch near Van Nuys by B. C. Bougher, field crop specialist of the farm adviser's staff. Mr. Bougher is a newcomer, filling a newly made office. He is a graduate of "Ames," Iowa, has lately been farm adviser to Humboldt County, traveled considerably, having lately made a trip of investigation to Hawaii. He stated the audience would be shown the practical effects of seed selection, cover crops, alfalfa in particular, irrigation to overcome early autumn frosts.

In the field he introduced J. L. Oleson, owner, who said the two chief problems now before the successful grower were seed selection and marketing. He has used leguminous cover crops, barley, and Texas red oats. In one field the predominating rate of yield was 100 to 170 sacks, but the portion previously cropped to a mixture of vetch and yellow melilot yielded 212 sacks to the acre. If sown

now or earlier, vetch makes immediate growth, but melilot will not grow until warm weather, so the two gave a rare combination of growth until June. Alfalfa one and a half years old, cut twice and left on the ground and finally turned under, was not so good as clover or vetch as it is much more fibrous and is slow to decompose or break up, and potato crop following is not so good. Field may have too much undecomposed material and may lack potash. Plot planted with whole or "drop" seed not so good as cut seed, especially for autumn plant-

ly to discuss varietal tests, seed selection, marketing, etc. He also spoke of past season and its disappointments through much top and little crop, due to three factors. Some examples were a late variety under wrong name—Oregon Purple Rose. Climatic conditions were unfavorable, a long cold spring. Some seed was very poor, crop showing pear shaped tubers common to varieties "running out." Other lesser contributing causes with but local application were noted. Cover crops were most productive. One field with no treatment in one part produced 60 sacks per acre; \$30 worth of barnyard manure gave 90 sacks; that part previously in yellow melilot yielded 105 sacks.

Secretary Dillon of the Van Nuys chamber of commerce was a booster

other days two hours are necessary. Sprinkling with or rolling in powdered lime or sulphur after cutting seed brought good results. Few cases of late blight were reported and were controlled by 5-5-50 Bordeaux mixture. Spray before lower leaves are fully formed. Wireworms and cutworms were not bad past season. The harrow and disk holds both in check but where cutworms are bad poisoned bran should be used.

Geo. H. Peters of Bakersfield told of a trip East, and of lessons learned. California potatoes have quality but are poorly graded. From California to Maine and back cover crops bring best results. H. E. Truax of the United States bureau of markets stated 1920 crop is about 414,000,000 bushels, or 55,000 bushels above the average crop for ten past years. Storing is heavy in Maine and some other points, so prices this season will probably not be high. He advised better grading. R. G. Risser, manager of crop estimate department of the California Vegetable Union, was a visitor from Sacramento and gave a few good words of advice. W. V. Shear, potato expert for the state department of agriculture, made a strong plea for acceptance of certified seed bearing state tag on every sack, telling methods of inspection and stating no one may tell a good seed potato by its appearance. You must know its history and watch it grow. Therefore let the state certify seed for you, based on three thorough and timely inspections of the growing and harvested crop.

E. D. McSweeney and T. H. Lambert of El Monte each gave a few words of advice and encouragement, after which the meeting adjourned, the audience visiting fields in various parts of the valley until sundown, observing all possible conditions of crops and lack of crops.

Local center meetings of the Glenn County farm bureau will be held at Willows, November 15; Capay, 17; Plaza, 19; directors' meeting, 20; Elk Creek, 22; Grapevine, 24; Larkin, 26.

Horticultural Commissioner Stabler of Sutter reports that 2,900 pounds of poisoned barley has been distributed in that county for squirrel extermination.



Potato Growers and Farm Advisers

1, Farm Adviser Wahlberg, Orange County; 2, E. D. McSweeney, El Monte; 3, Farm Adviser Hodgson, Los Angeles County; 4, T. H. Lambert, El Monte; 5, J. L. Oleson, Van Nuys; 6, Assistant Farm Adviser Bougher.

ing. Locally selected seed is preferable to others, especially if certified. Burbank variety is worthless and local growers won't "get seed back."

Feast at Van Nuys

The gathering then drove to the Van Nuys high school, where the domestic science class served a splendid lunch at a reasonable price and was congratulated for its excellence by a unanimous rising vote on the part of the diners. Later in the auditorium G. E. Gordon presided. Farm Adviser Hodgson was the first speaker, saying future meetings of this nature would be in hands of potato growers department, which would meet frequent-

for the San Fernando Valley, stating the value of its past year's agricultural products was \$13,000,000. Principal Smith of the high school promised hearty cooperation and invited all to come again, stating young Whitsett of his school made the state record for 1920 spring potato crop. Mr. Bougher gave a general crop review and some good practical advice. In sweating spring crop for autumn planting pile lightly for free airing or rot will result. Some cure by leaving in the dry soil until other soil is ready and dig and replant at once. Be careful to "set" skins properly. Some days 15 minutes exposure is sufficient; on

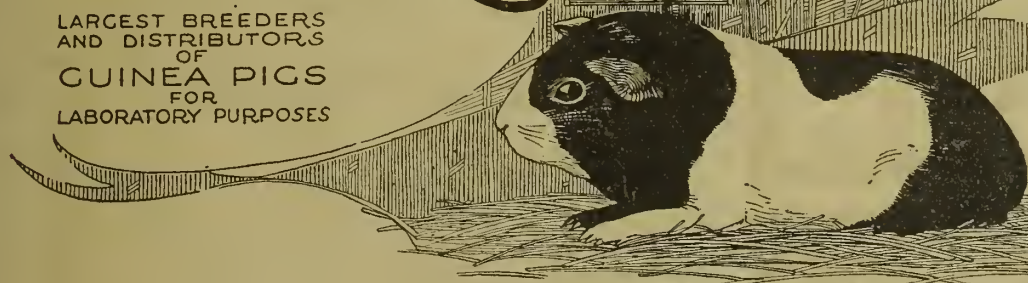
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A hundred breeding female cavy, and they have five litters a year, which is five hundred litters, and the Government figures three young to a litter which is 1,500 young, and figure that the first three litters from your original 100 breeders will have young during the same year, that will be 300 litters, and at three to a litter, which amounts to 900 young. Add the above 1,500 young to 900, makes the total of young from your original cavy 2,400 for the year, and at our contract price of \$1.20 per pair, for you can rest assured that about half will be males and half females, and your profits for the end of the year will be \$1,440.00

from your small investment, and you will still have your stock that you had to begin with

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by laboratories and other institutions every year in all parts of the country. Many of these big orders, representing over a million and a half dollars expenditure each year, are waiting for supplies. Waiting for people to wake up to their opportunities and raise sufficient stock to meet their requirements. One institution alone in Pennsylvania requires on an average of 1,500 guinea pigs each week.

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Guinea pigs are very prolific and at six weeks of age are ready for mating. They thrive in any climate and can be successfully raised in congested neighborhoods without annoyance of disagreeable odors, even when kept in large numbers.

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60 REGISTERED 60 HOLSTEINS

Sales Pavilion, Tulare, Cal.
Thursday, December 2, 1920

Representative breeders will offer in this sale a selection of well bred females, and a limited number of young bulls, that should meet with the approval of buyers seeking foundation material

**Yearly Record Cows
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By Great Yearly Record Sires
In Calf to Yearly Record Bulls**

Among the reference sires, bulls to which females in the sale are bred will be found:

SIR AAGIE DE KOL ACME 2ND, five of whose seven nearest dams average 1,153 lbs. butter in one year.

SIR PIEBE DE KOL SEGIS PONTIAC, by Senator Hackney's famous bull King Segis Pontiac Count, and out of a dam that made 717.46 lbs. butter from 17,635.2 lbs. milk in one year.

KING PONTIAC ALCARTRA PRILLY, by the three times grand champion, King Segis Alcartra Prilly, and out of a 36.61 lb. daughter of Spring Farm King Pontiac that milked 805 lbs. in 7 days and is now on yearly test.

MOORLAND KING MEAD HASKINGS, a 32 lb. son of King Mead of Riverside, second dam a 32 lb. 4 year old.

SEGIS PONTIAC ABBEKERK, a 35 lb. son of Segis Pontiac De Kol Burke, second dam a 31 lb. daughter of Tidy Abbecker Prince.

PRINCE GELSCHER WALKER ALCARTRA, by Prince Gelscher Walker, out of a half sister to Tilly Alcartra that made 796.16 lbs. butter from 19,043.5 lbs milk in one year.

SIR VEEMAN HELENA KORNDYKE, by the great young proven sire Sir Veeman Korndyke Pontiac, and out of a 31 lb. dam.

Contributors to sale:

Gotshall & Magruder, Ripon
Alex Whaley, Tulare
R. C. Sturgeon, Tulare
F. S. Borror & Son, Tipton
E. D. Barry, Jr., Daggett

H. E. Splres, Caruthers
Harry Hill & Son, Riverdale
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See next week's issue for details. Write for catalog now.

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California Breeders Sales and Pedigree Company

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COL. GEO. W. BELL, Tulare.

62 Registered Hereford Females AT PUBLIC AUCTION

Finnell Stock Farm, Galt, Cal.
Thursday, November 18 at Noon

An offering of desirable young females from their herd of 180 head of registered Herefords, made in order to reduce the herd to the present capacity of their equipment. The offering includes:

16 Cows With Calves at Foot

25 Bred Cows and Heifers

21 Open Heifers of Breeding Age

The herd is headed by BEAU BLANCHARD 37TH, a son of Engle's famous Beau Blanchard, and SIR THOMAS, both of which have some good daughters in the sale.

43 Out of the 62 Females in This Sale Were Born
in 1917 or Later; The Balance from 1913 to 1916

This is an especially attractive offering for the buyer of foundation females, especially those who want to start a registered herd under range conditions, for this herd has always been handled strictly under range conditions, and carefully culled down to the females that drop a good calf regularly each year.

GUARANTEED BREEDERS—TUBERCULIN TESTED

28 BULLS FOR RANGE SERVICE

The owners have on hand 28 registered Hereford bulls, bred in this herd, two year olds and yearlings, that are offered for sale at private treaty. These bulls may be inspected at any time, and bargained for now or on sale day. The owners will price them in lots to suit buyers.

Owners:

Finnell Stock Farm Company, Galt, Cal.

Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.
Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. John A. Davis, Manteca

NOTE—Finnell Stock Farm is located about nine miles east and slightly south of Galt, Sacramento County, California; about 35 miles southeast of Sacramento. Southern Pacific trains will be met at Galt morning of sale, and lunch will be provided before opening of sale.

Milk Producers Win Again

By R. P. Royce



FOLLOWING closely the decision by Judge J. C. Needham of Modesto, by which the suit against the Milk Producers Association of Central California was thrown out of court, comes the announcement that the second suit of the same series—viz., those instituted by Attorney General Webb—and the one against the Northern California Milk Producers Association, has been most emphatically disposed of by Judge Peter J. Shields of Sacramento.

In sustaining the demurrer entered by the association's attorneys, Judge Shields stated that the attorney general's complaint "fails to state cause for action." Further, that "a great industry should not be called upon to defend itself against charges so uncertain and impermanent as the record of this case discloses."

The decision of Judge Shields is regarded as one of the most important yet delivered relating to the activities of cooperative enterprises for the distribution of agricultural products and promises to become an important precedent.

In disposing of the case, Judge Shields goes to considerable length in making clear and setting straight many of the charges aimed at the milk producers associations.

To the charge that the association has capital stock in violation of its charter, the decision points out "that the statute under which defendant was formed is one of the class of statutes that gives to the capital of the defendant a character as 'capital' as distinguished from 'capital stock'."

"It provides for fees from members, for annual payments to them for charges to be imposed on them for services rendered and for mortgaging and encumbering the property of the corporation. These are the sources from which the defendant's capital is said to have been derived."

"And when it is raised in this way under the permission of the statute, it must clearly mean that the capital so derived shall not be regarded as capital stock."

As regards the ownership of property and equipment, the decision says: "The right to raise money and to purchase and hold property appears throughout the statute. Plaintiff concedes that corporations of the character of the defendant corporation may own a limited amount of equipment. Who has the right to say how much? If it can own a little churn, why not

a big one and why not 20 or any number?"

Further, in view of the fact that the state had permitted the defendant to incorporate as a business industry, "it would be impossible to conduct this business without the properties of the kind it is claimed to possess."

To the contention that the association had ceased to function as an agent for its members and had in reality become a manufacturing enterprise which was in violation of the charter under which organization was effected, the decision pointed out that if the association had the right to handle milk it certainly followed that it should have the right to manufacture and sell products originating from milk and that no grounds were found to support the above charge.

As to the internal affairs of the association the decision suggested that any cause for complaint was a matter between the association and its members and was not a concern of the public.

A most important feature of the decision relates to the charge that the association is too large and that "such corporations should only be small neighborhood bodies." That contention is pointedly brushed aside by the statement that such contention "is not only without support in law but is contrary to social experience. I believe that the statute contemplates and will support a cooperative organization of an industry as wide and as extensive as the industry itself."

No announcement has been made suggesting that the case will be taken to a higher court, but such action will probably follow, and the members of the association are hopeful that an early appeal will enable them to get a higher ruling.

The principles of law involved in the suits instituted against the milk producers operate with other cooperative enterprises and at several points touch the very life of cooperative marketing.

It is interesting to note that to date the milk producers have successfully met each obstacle that has been placed in the path of their progress. While the various suits have been disagreeable, they have served to straighten out many misconceptions developed in the minds of the public—not the least of which is that the dairymen have organized with honest intent and that they are determined to manage their affairs so that they can receive a fair price for their products.

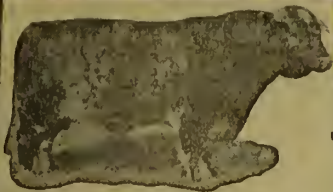
Buyers of Rosamines Holsteins

Last week it was necessary to leave out the detailed list of buyers at the Stalder Brothers great dispersal sale. The principal buyers who absorbed the 137 head for an average of \$533 appear below:

1. King Pontiac Netherland Segis 3d, \$2,900, Bost & Johnstone, Corona.
2. Sir Ormsby Skylark Rowena, \$3,500, Sierra Vista Ranch, Perris.
3. Rosamines Pontiac Netherland, \$450, Pottenger Sanitarium Company, Monrovia.
4. Aralia Maid, \$1,000, Robert N. Clapp, Nuevo.
5. Gerben Abbecker Maid, \$1,000, Robert N. Clapp.
6. Rosamines Pontiac Jul, \$150, R. C. Jacks, San Francisco.
7. Rosamines Ononis Ormsby, \$1,175, Burr Farm, Los Angeles.
8. Pontiac Sir Ormsby, \$130, W. B. Mills, Ontario.
9. Rosamines Maid Ormsby De Kol, \$525, Mrs. Annie Donders, Fresno.
10. Rosamines Gerben Aralia, \$550, Burr Farm.
11. Abbecker Pontiac, \$1,475, Robert N. Clapp.
12. Rosamines Abbecker Netherland, \$440, C. V. Harris, Compton.
13. Rosamines Pontiac Gerben, \$300, R. C. Jacks.
14. Rosamines Abbecker Ormsby, \$1,475, C. V. Harris, Compton.
15. Rosamines Maid Ormsby, \$260, C. V. Harris.
16. Rosamines Ormsby Abbecker, \$1,050, Robert N. Clapp.
17. Rosamines Skylark, \$135, W. B. Mills.
18. Rosamines Sir Skylark Ormsby, \$500, F. A. Speck.
19. Rosamines Duchess Ormsby, \$2,150, Morrison.
20. Skylark Bubble, \$1,200, D. G. Maxwell, Hollywood.
21. Rosamines Skylark Bubble, \$275, C. V. Harris.

22. Alice Ormsby Creamerie Hengerveld, \$385, Bost & Johnstone, Corona.
23. Stanislaus Belle Hengerveld, \$1,075, D. G. Maxwell.
24. Stanislaus Segis Hengerveld Queen, \$375, D. G. Maxwell.
25. Stanislaus Skylark Inka De Kol, \$675, D. G. Maxwell.
26. Rosamines Segis Ormsby, \$600, D. G. Maxwell.
27. Countess Skylark Ormsby, \$500, D. G. Maxwell.
28. Minta Segis Pontiac, \$1,750, Robert N. Clapp.
29. Rosamines Pontiac Korndyke, \$160, R. C. Jacks.
30. Rosamines Ormsby Netherland, \$375, W. B. Mills.
31. Rosamines Pontiac Skylark Anggie, \$150, San Diego County farm, San Diego.
32. Stanislaus Princess Cleopatra, \$200, R. N. Clapp.
33. Rosamines Bonita Ormsby, \$485, Carl Ray, Lankershim.
34. Rosamines Princess Ormsby, \$500, George Hale, Pixley.
35. Rosamines Cleopatra Ormsby, Carl Ray, \$450.
36. Rosamines Cleopatra Ormsby De Kol, San Diego County farm, \$275.
37. Rosamines Maid Segis De Kol, \$400, Mrs. Annie Donders.
38. Dora Netherland Segis, \$850, Fred Hartsook, Lankershim.
39. Dora Pontiac Segis, \$600, Fred Hartsook.
40. Rosamines Jeek Pontiac, \$400, Fred Hartsook.
41. Rosamines Dora Netherland, \$1,000, D. G. Maxwell.
42. Rosamines Dora Jeek, \$475, Fred Hartsook.
43. Rosamines Jeek Ormsby, \$385, Fred Hartsook.
44. Madrigal Sarcastic Girl, \$425, J. W. Butler, Pomona.
45. Sarcastic Girl, \$350, F. T. Underhill, Santa Barbara.
46. Rosamines Johanna Mercedes, \$250, D. G. Maxwell.

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133. Downe Pontiac, \$800, Berylwood Investment Co., Huene.
134. Alcartra Sarcastic, \$575, R. L. Holmes.

135. Bull calf from No. 55, \$200, Burr Farm, Los Angeles.

136. Tarnaulins or tents made of duck, or, for that matter, any material, are now so fearfully expensive that preservation is essential. For those who have to deal with anything made of cotton duck there will be considerable interest in "Waterproofing and Mildewproofing of Cotton Duck," Farmers Bulletin 1157, U. S. D. A. It may be had without cost by writing Division of Publications, Department of Agriculture, Washington, D. C.

75 Registered Holsteins

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AT PUBLIC AUCTION

Wednesday, December 1, 1920
Westlawn Farms, Fresno, Cal.



Betsy Lamb Prilly

It is necessary to re-seed practically all of the alfalfa fields at Westlawn Farms, and the owner, Mr. H. E. Vogel, has decided to disperse his entire milking herd of registered Holsteins, including also some choice bred heifers and a few good young bulls.

This herd has been developed along constructive lines for twenty years, and is composed of a remarkably good lot of individuals with production, popular breeding, and good health.

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Females of Breeding Age Are Bred to:

SEGIS ALCARTRA DE KOL BURKE, by Segis Pontiac De Kol Burke and out of a 29 lb. 4 year old that made 621.1 lbs. butter in one year as a 2 year old, her dam a half sister of Tilly Alcartra that made 753.1 lbs. butter from 19,972.4 lbs. milk in one year as a 3 year old.

KING ARLAIA MEAD, by King Mead of Riverside, and out of Margaret Aralia De Kol, 1,161.48 lbs. butter from 22,922.7 lbs. milk in one year, she by a son of Aralia De Kol and out of a daughter of Juliana King of Riverside that made 653.21 lbs. butter from 16,387.1 lbs. milk in 338 days as a 4 year old.

SIR AAGGIE ARLAIA BURKE, by Sir Aaggie De Kol Acme and out of a daughter of Margaret Aralia De Kol. His dam is now on yearly test, and omitting her, his six nearest dams average 1,071.32 lbs. butter and 23,545.3 lbs. milk in one year.

KORNDYKE SADIE VALE PRILLY, by King Korndyke Sadie Vale 22nd, a 30 lb. son of King Korndyke Sadie Vale, and out of the grand champion cow Betsy Lamb Prilly, 35.03 lbs. butter from 743.3 lbs. milk in 7 days, and she made 31.37 lbs. butter from 647.8 lbs. milk in 7 days at previous freshening as a senior 4 year old.

BETSY LAMB PRILLY HERSELF WILL BE SOLD. Here is one of the very greatest young cows that ever appeared in a western sale, a cow that we tried hard to get to represent California in the world's record consignment at the St. Paul sale last June.

Watch for details in next week's issue. Write for catalog now

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Have Removed to

Hollywood, California

A large number of daughters of Sir Ormsby Skylark, the fountain head of the Ormsbys as well as daughters of King Segis Pontiac and Woodcrest Hengerveld De Kol are in the herd and are being bred to sons of Sir Pietertje Ormsby Mercedes.

Some fine young bulls by Sir Ormsby Skylark for sale.

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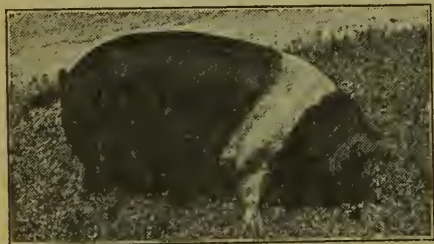
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Alex. Wilson, Supt., Guasti, Cal.

Stockyards and the Small Stockman

By A. L. Spellmeyer



ATTLEMEN running large herds do not appreciate the problems and views of the small stockman running a few head of cattle on some farm in connection with the raising of other products, yet it's this small man who will eventually save the national meat supply.

It is true that the larger cattlemen have done all the work to secure fair markets and better prices for cattle, as they are in it so they cannot quit when prices or conditions do not permit a profit, and the small man can take his loss on a few head and be out. The droughts and the pre-war cattle prices now prevailing, with every element in the cost of cattle production on a profiteering scale, have whittled a lot of the larger outfits down to smaller size. The element of instability has made it impossible to take on a big debt and figure small prospective profits. One never knows how much a bunch of cattle is going to cost him or what he is going to get for them.

Development of future beef needs must come through the small men, and there are thousands of California ranches which have waste feed in connection with other farming, that could use some cattle to advantage. The very high alfalfa prices have made it preferable to sell hay, and the low beef price has made a profit on any steer a gamble on any kind of feed.

The high hay prices are caused locally by drought in two-thirds of this state and the vast amount of butter and milk required by the cities, owing to the people crowding into them. Even the rabbit business takes thousands of tons of hay yearly and in many families cuts off a portion of their meat purchase, hitting cattle production two ways, a comparatively insignificant blow, but nevertheless a thousand steers' feed and flesh in the state in a year.

The second reason that the development of the small cattle farmer has been retarded is the lack of regular market. A few head, or even one car, doesn't interest the packers. The only market is the local butcher at several cents under the market for large lots of fat steers or cows. If the small man ships in he is done on both price and weight. Handicapped by \$10 to \$30 per head, the small man doesn't fool around with cattle. Many a California ranch farm is playing out. Many an alfalfa ranch requires fertilization such as only stock or expensive chemicals can give. Travel among the 20 acre farmers, the 40 acre and the 80 acre men and you will hear them talk of it. Many a man figures getting it and selling. Soil robbery will result in the conditions prevalent in many Eastern states some day, as even California soil won't give continually without being fertilized.

They can talk of farm bureau co-operation in marketing, etc., and it's a good thing, but what is needed is a regular market where small men or large men can ship stock and get the cash. Then we will have better blood and we will have places where men can go and buy a milk cow or a registered beef bull, knowing its value. We can buy autos on contract but where can a man go for a single good bull and pay for it monthly?

I, for one, have tremendous confidence in the sincerity and honesty of purpose of our cattle association leaders, but most men when they figure a regular market, a stockyards or anything similar, compare it with Middle Western ones. California doesn't need to have that kind. Its killing majority is not at present entirely in the hands of the meat trust. It has a healthy, prosperous hunch of independent killers, who are trailing along, having been bitten before by many traps of trust packers, until they are playing it very safe. It may be hard on beef sellers to have independents underbid the old liners, but it's a protective measure they can afford to pay for as an industry. The Los Angeles independents are a very wise lot who play the game close and hard for its last nickel, quitting perhaps when the volume gets unprofitable, starting again when it pays. They call our

largest independent a \$50,000 a year man if he would only go to work for a regular line packer. California is the model of cooperative marketing in many lines. There is no good reason why cattle marketing couldn't be hulled up on similar lines. If the retailers require enormous profit percentage and the killers make \$10 to \$20 per head while the producer loses \$20 to \$60, why can't it be cut out? Why can't these cattlemen market direct to consumers?

Some of the packers want a stockyards now. Give it to them under certain safe conditions, establish the market, and then go ahead with modern cooperative marketing to offset possible abuse. There is no particularly keen brain among this state's packer representation. If there was they wouldn't have hurt the cattle industry and raised the inevitable question of shortage as the next step. This state is off to itself. Its killing demand in two cities is over a half million cattle yearly. It has allowed manipulation and no recourse just because it was isolated and therefore California prices have been as much less as freight and shrink would be to regular Middle West markets. This same condition would operate as well for the cattle producers if they were lined up in a movement, with a regular stockyards, as it now operates against them. Anything brought in to break the price would have to stand that extra freight and expense. The cattle are not here to supply this coast's demands in steers for 1921 and cow slaughter can't continue always.

There are a hundred men in the business of handling dairy cows for sale around Los Angeles. There are dozens on the road buying small lots and killing them on commission. There are hundreds of men with trailers in the country going around and picking up cows and calves far under value from farmers and dairies. A regular market would concentrate this trade on a value basis. A thousand industries would spring up. Banks would know prices, know cattle value, would have a possible immediate market to protect them and would loan money on that basis to stockmen, as when they are safe and liquid, cattle loans are the finest investment in this world. When a man wanted some feeders he could get them, if he wanted money he could realize.

There are other lines of industry besides cattle. The hog man can now get fine breeding stock, thanks to a few rich men who have established some of the finest hog ranches in the country in Southern California. Even the farmer who pays a couple of hundred for a registered sow and has a litter from a thousand dollar boar must advertise and hunt around, or just figure his increase on pork basis. A stockyards would change that. There is no meeting point for men wanting to buy and men wanting to sell.

A man wants a hundred or two hundred stock cattle or young steers. He takes the train to Arizona, contracts, waits for delivery, fights some fellow to get them aged and classed right, pays more freight than he figured, loses a few en route, and comes home worn out with a lot of costly cattle that don't just suit him at that. All this would be done away with. He could go to a yards, get his cattle, save his expense of wasted time looking, classing and shipping, and have what he wanted. The seller would ship them in, get what demand paid him, and get it in cash quick. If he made all right; if he lost he would have the cash to try again, and not be tied up with unmarketable stock, with his bank writing and demanding him to pay what he owes and refusing more money to pay for range or feed, because the very value of his stock was an uncertain remaining-to-be-proven proposition.

A lot of these things are hard to figure as this man is pulling this way and that man the other. There is apparently no organization the farmers and the stockmen will support. Their very power is nullified through their being split up. Of all the things under the sun cattle have in the last

five years had the hardest blows. Everything else raised in price, even though it declined later, but the cattlemen fought drouth for the first few years of the big war and since have been fighting bad markets, and while meat is higher than ever to consumers, get nothing for their trouble except work, worry and loss.

The 1914 prices on hogs were about seven to eight cents. They went to 20 cents and later declined to 15. Lambs were in 1914 about \$3. They went to \$11 and now are about \$1. Sheep on range in 1914 were \$6 and wool 15 to 20 cents. Sheep went to \$20 and wool to 70 cents. Now sheep are about \$10 and wool about 30 cents. But the 1914 cow was \$40 and the 1920 cow is \$40 on those same ranges. The 1914 yearling sold at \$30 and so does the 1920 yearling. The highest it ever got was \$50 for the cow and \$40 for the yearling. In range districts like Arizona, beef was eight cents here this year. Meat sold in 1914 to consumer at 25 cents for good steak and in 1920 at 50 cents. Cattle are safe now, but people don't want things which were unprofitable in the past few years. A regular market would surely show the shortage. A lot of the regular line packers have their jealousies and the packer fight is for volume, as therein lies profit. It might be stimulated locally as some of the present plants are not buying.

The horse and mule trade is quite a business in itself. Any stockyards here would have an important branch in its dairy trade as this is a great milk and butter state. When men only figure the beef cattle end they are shortsighted.

Kansas City 30 years ago supported thousands of men and hundreds of industries in its stockyards when their volume of business was comparatively small. All the rising young ambitious men went into some industry connected with livestock. That's about all Kansas City had then and now.

Now this Southwest is the great center for cotton. We have the cotton plants here and more coming. It will be the world's cotton center in ten years. The manufacturers simply have to locate here for their own economic saving. Great textile plants will arise and our acreage possible for cotton growing isn't even scratched. Already Los Angeles is acquiring slums and the exterior points of a large manufacturing town. Today this is one of the great bond selling centers of the country, with its banks assuming broader ideas and policies.

All cotton growing means production of cottonseed. From cottonseed come valuable oils for many purposes, including food. This cottonseed meal and hulls is one of the best feeds for fattening cattle. A great beef producing center with capacity already of 20,000 cattle is started. It is nothing to what it will be. Cottonseed feeding has been expensive; it is now much cheaper. It is even possible that thousands of head of beef could be fed and fattened for the Eastern markets if we had surplus cattle, which at present we have not.

But conditions are progressing which make the establishment of a great stockyards or market probable either in Los Angeles or Phoenix within the next few years. Why fight against it or delay, when now the cattlemen could have a ruling voice in a plan to suit their needs? It's bound to come with development, as the hog, sheep, mule, dairy and cotton interests and a thousand natural forces are going to make a central market desirable. If present cattle production costs and prices continued another two years none of us would be in the business anyhow, and if we can't organize towards direct to the consumer marketing, we can quit kicking and suggest a stockyards on some basis we won't fight.

GRAIN FEEDING FOR DAIRY COWS

Profs. Wo'll, Voorhies and Castle are joint authors of Bulletin 323, "Heavy vs. Light Grain Feeding for Dairy Cows." Dairy men will find it invaluable and it may be had by writing Experiment Station, College of Agriculture, Berkeley.

GREAT HOLSTEINS COMING

The excellently equipped dairy plant at the Maxwell Farms near Los Angeles is about completed and the famous Holsteins from the farm at Waterloo, Iowa, are beginning to arrive. Gaining this herd is the greatest stride California has taken in Holstein history in many a day, for it is a famous one. At its head since the start stood Sir Ormsby Skylark, the sire of the world's record cow of all breeds, Duchess Skylark Ormsby, who made 1,506 pounds of butter in 365 days, and the Maxwell herd today contains over 50 of his daughters as well as a number of daughters of King Segls Pontiac and Woodcrest Hengerveld De Kol.

Sir Ormsby Skylark died last fall and in order to carry on the same line of breeding, Tritomia Pietertje Ormsby, one of the best sons of the great Sir Pietertje Ormsby Mercedes, has been placed at the head of the herd. Assisting him is one of the greatest line bred bulls of the Ormsby family, Major Pietertje Ormsby, who is also by Sir Pietertje Ormsby Mercedes. As a probable successor to Sir Ormsby Skylark the Maxwell Farms are banking on one of his last bull calves who is out of Ormsby Buffalo Mercedes, a daughter of Sir Pietertje Ormsby Mercedes. The dam, now on yearly test, is going at a 1,200-pound clip. In this calf there is a wonderful blending of Ormsby blood through Sir Pietertje Ormsby Mercedes, Pietertje Maid Ormsby and Sir Ormsby Skylark.

This herd combines both show type and production, for it has been a big winner at all the eastern shows, including the National Dairy show, and all the cows three years old and over average over 30 pounds of butter in seven days.

It is the wonderful California climate that is bringing this herd to the coast and with it comes Uncle Dave Maxwell one of the greatest boosters the Holstein cow ever had.

HOLSTEIN-FRIESIANS SELECTED AT DELHI

After long and careful consideration of the comparative merits of the various dairy breeds, the settlers of Delhi land settlement cast their ballots by a big majority in favor of Holstein-Friesians, and this will be the official dairy breed of the settlement.

The Delhi settlement comprises 10,000 acres at Delhi, in the southern part of Stanislaus County, and a large number of farms have already been allotted under the state land settlement plan. There will be over 300 farms in the total allotment. The merits of the Holstein-Friesian breed were placed before the settlers by C. L. Hughes, secretary of California Holstein-Friesian Association, and H. V. Brideford, former president of the same association. The California Holstein-Friesian Association will cooperate with the settlers in securing foundation breeding Holsteins of the right qualifications to make the Delhi settlement one of the high class breeding centers of California.

Veterinary

Feed Value of Coconut Meal

What is the value of coconut meal as feed for milk cows and little pigs and fattening pigs? Are dairymen feeding it?—Subscriber, San Diego.

Coconut meal has very much the same feeding value as bran. It is a very desirable food for milk cows. If allowed to stand, however, a very long time, particularly in hot weather, it sometimes gets a bit rancid so that unless conditions are favorable for keeping it it is better to buy it in small quantities. It is quite palatable and has a laxative effect on the cows which also makes it a desirable feed. It can be fed at the rate of two to four pounds per day per cow under

ordinary conditions but is best mixed with other feed such as grain and perhaps beet pulp. It also causes the butter to be somewhat more firm than the butter produced without coconut meal. This is of course desirable in

the summer time. It is not found to be a very desirable hog feed although it can be fed in small amounts in the hog's ration. It is a little bit bulky to get best results in feeding in any quantity to hogs.—G. E. G.

Lady Milky Aaggie Pontiac!

This great 17 month old daughter of the world's record senior three-year-old, Lady Aaggie Echo Hengerveld, "the \$10,000 cow" and the only living Holstein to hold as many as three world's records (her world records are: 24.69 lbs. butter from 494.4 lbs. milk in seven days, eight months after calving; 1,200.7 lbs. butter from 28,008 lbs. milk in 365 days as a senior three-year-old), and sired by Chlmacum Spring Farm King Pontiac who now has 21 A. R. O. daughters with average 365 day records as two-year-olds of 500-900 lbs. butter, and seven day records from 16.00 to 23.77 lbs. butter will head

Milky-Way Farm's Consignment Pacific International Holstein Sale Portland, Ore., Friday, Nov. 19

We also sell Maldeta de Pauline 2d, a 26.32 lb. daughter of Sir Johanna Ruth Fayne; Maldeta Ormsby a daughter of Greenbank Sir Ormsby Hengerveld Jr.; Maldeta Prilly, a 16.376 lb. two-year-old; Colony Netherland Segls Newman with a 365 day record of 840 lbs. butter from 20,104.8 lbs. milk, is a daughter of Aaggie Cornucopia Newman and out of Netherland Segls 2d; Nooksack Lunde Oregon De Kol, a 28.75 lb. five-year-old; Jacoby Canary Hartog, a promising daughter of Canary Hartog Paul 2d; Peconic Lady of Donnybrook, Hengerveld Pontiac of Donnybrook and Carrie Pontiac of Donnybrook are fine big two-year-olds. Netherland Valdesa Fayne, a 34 lb. son of Flinderne Mutual Fayne Valdesa is our only bull entered.

Attend the sale and watch for our consignment.

MILKY-WAY FARM

SUMAS

WASH.

80 REGISTERED 80 HOLSTEINS AT PUBLIC AUCTION

State Fair Grounds, Sacramento, Cal. Thursday, December 16, 1920

Featuring the dispersal of the R. F. Fisher herd, Carlotta, and highly bred offerings from other leading breeders, including
A 1,000 pound Granddaughter of King of the Pontiacs and four of her daughters.

Contributors to sale:

R. F. Fisher, Carlotta
Fred W. Kiesel, Sacramento
J. McKindley, Acampo

Bridgford Company, Patterson
E. D. Barry, Jr., Daggett
Anderson & Fogarty, Sacramento

Details will be announced in succeeding issues. Every animal guaranteed to be a breeder; no tuberculin test certificates furnished.

Write for catalog now.

Management

California Breeders Sales and Pedigree Co.

C. L. Hughes, Sales Manager, Sacramento, Calif.
Auctioneers: Col. Ben A. Rhoades, Los Angeles; Col. John A. Davis, Manteca

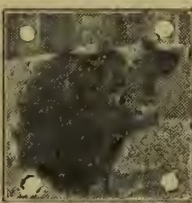
Prize Guernseys For Sale

A number of the prize winners—male and female—in our show herd are for sale. They combine type with high production.

Hollow-Hill Farm

B. W. Shaper, Mgr.

COLTON, CAL.



If You Wish to Buy Shorthorns

address this association which through its field force will render assistance free of charge in locating Shorthorns of the kind you want, pure breeds or high grades, males, or females, or steers. It pays to grow Shorthorns because they fit into the conditions on the farms and ranches everywhere.

American Shorthorn Breeders' Association,

13 Dexter Park Ave.

Chicago, Ill.



MORE PORK IN LESS TIME

Duroc-Jersey hogs have a tendency to put on great amounts of pork at an early age. They are easy-feeding animals, and raise large families. These hogs were introduced less than 50 years ago, and yet in 1918, 51% of all the hogs marketed in the country were "Duroc-Jerseys." They are uniformly red in color. Increase your profits by raising Duroc-Jersey hogs.

Write for "DUROC-JERSEY HOGS ARE PROLIFIC AND PROFITABLE"—sent free to hog-raisers by the largest swine record association in the world. Over 12,000 members.

The National Duroc-Jersey Record Association. Dept. " Peoria, Ill.

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J. P. WALKER
The Home of Quality

The Utmost in Durocs

Our herd of outstanding foundation animals is rich in the blood of

PATHFINDERS SENSATIONS
CREATORS ORIONS
DEFENDERS

This is the blood you need to insure your success. Superb breeding stock to suit your purse and purpose.

Visitors Welcome. Correspondence Invited.
J. P. WALKER, Visalia, Calif.

SIZE
TYPE
QUALITY
INDIVIDUALITY

VALUABLE
BREEDERS
PROFITABLE
FEEDERS

Duroc-Jerseys JUMBO SENSATION



The World's Record Boar
The Largest Jr. Yearling
in the World
The Best Type Boar of the Breed
Cost \$15000.00
A World's Record of Jr. Yearling

TU-TOCK-A-NU-LA RANCH

Mrs. R. E. Whitley, Owner

VAN NUYS, CAL.



Lendorris Liberty Bond and Lendorris Liberator

Two good sons of two good sires are our herd boars. When in need of choice Poland China breeding stock, write for our prices. You will find them very reasonable.

W. L. Haag and Son Hanford, Cal.

Sows and Gilts---GET ONE

Bred to farrow next two months. We are making an extremely low price on these to reduce our herd. At the price we won't keep them long. Write today. Quick, before they are all gone.

H. P. Slocum, Willows, Cal.

Watch La Tierra de Uva Durocs Pathfinders, Orions, Sensations Three Top Boars

Fannie's Orion King assisted by Uneeda Orion B. 2nd prize aged boar at State Fair, 1920, and grand champion at Glenn County Fair, 1919, and Valley View's Sensation, 3rd prize junior boar pig and litter mate to 1st prize and reserve champion at State Fair, 1920, and a wonderful string of prize winning sows and gilts, including Miss Sensation, 1st sow pig and reserve champion at State Fair.

C. C. ELLIS

Exeter, Cal.

The Greatest Duroc Boar of His Age! Choice Wonder 3d

Senior and grand champion boar of California. A consistent winner in the show ring, having been a winner as a junior pig at the Iowa state fair in 1919. He is siring a high class of young stuff and is being mated to a class of sows that will breed on. Write for Prices. Satisfaction assured.

JUNE ACRES STOCK FARM

V. F. Dolcini, Davis, Cal.

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

THE DAIRYMAN'S OPPORTUNITY

(Continued from Page 627.)

pure breds, wouldn't it be better business to bridge the gap between grades and pure breds by putting in the latter? The soundness of that proposition will be generally admitted and the tendency of our dairy cattle development is toward that ultimate end.

Naturally a complete change from grades to pure breds cannot be brought about at one "fell stroke." There aren't enough pure breds by thousands to make the change—and there are a lot of dairymen who need to be converted. But there are enough pure breds to start a good many individual dairymen on the right track and there never was a better time to make a start with pure breds or to increase the number maintained in a herd of part pure breds and part grades than confronts our dairymen this present season. The reason for the last statement can be found in a number of circumstances that exist at present.

In the first place, as noted above, grade values are quite the highest we have known, and they are likely to go even higher. During the last year a good many herds were liquidated. Most of the better cows from those herds found their way to other dairies. The plainer things went to the shambles. The above liquidation has developed a shortage of the better sorts. There appears to be a surplus of feed and, in addition, there is plenty of evidence to support the contention that a good many men who sold out and a good many who have been engaged in raising certain grain crops and cotton that war demand sent to high price levels are making their plans to get back to cows, many through necessity. When these men enter the market their bidding is likely to increase grade values even more.

Because pure bred values on the average have not increased in proportion to other values there is less margin between the price of a good grade cow and a pure bred than ever before. Under those conditions it is possible for a dairyman to purchase registered cattle to exceptional advantage.

Keeping the above fact in mind, there are other reasons why the thoughtful dairyman will seriously consider putting in at least a few registered cows this winter. First of all, the pure breds, because they are more efficient than grades, will enable the dairyman to produce milk and milk products more economically. Second, if along with general readjustments of values the price of cattle tends toward lower levels, one can be most certain that the values that will recede first and the ones that will be affected most will be for grades for the reason that there is less stability behind such values than is behind pure bred values. Again, it is sound practice for any dairyman to make a start with pure breds in order to lay the foundation for a herd of registered cattle.

Another point to consider: The man who builds up a herd of registered cattle not only has a more efficient herd than his neighbor with scrubs, but when the time comes to sell his herd it can be cashed to decidedly better advantage.

During the next few weeks there have been scheduled a number of pure bred dairy cattle sales and it seems a most propitious time for California dairymen to display a bit of foresight by taking advantage of the opportunities these coming sales will offer. That many men will act to their advantage is certain—but how about you, individually?

GETTING READY FOR THE INTERNATIONAL

Preparations for the world's greatest livestock exposition at Chicago during the first week of December are now well under way.

When the gates are thrown open to the public, November 27, an elaborate and expensive getting ready program will have insured the most successful International Livestock Exposition since the inauguration of that enterprise, which has been effective in promoting the welfare and progress of the livestock industry of all sections of North America.

KOUNIAS HOLSTEINS SELL WELL

In many respects the sale in which the entire herd of Holsteins owned by George Kounias, Modesto, was dispersed was one of the best of the fall season. With one of the largest crowds seen at a recent sale in attendance, 24 buyers absorbed the 65 head, consisting of cows, heifers and bulls, many of them but a few months old, for a general average of \$315. However, it should be stated that the sale included 12 head that were sold as reactors. Seventeen cows averaged \$559 and 21 young heifers averaged \$250.

The top of the sale was reached with the six year old cow, Dominita Colantha De Kol 2d, with 28.74 pounds to her credit, that was purchased by Gotshall and Magruder, Ripon, for \$1,225. This same firm was one of the most extensive buyers of the better lots and secured seven head in all. George P. Robison, Sacramento, buying on order for D. E. Cable of Modoc County, was the heaviest buyer at the sale. Hollywood Ormsby Segis at \$1,000, the second high priced female, was taken by Robison, and he also secured the good young bull, King Korndyke Aaggie Fayne, for \$500. J. A. Stenmark, Manteca, bought the 18.78 pound Dominita Pietertje De Kol for \$700. W. H. Bryan of Patterson picked five of the females and W. J. Denison of Modesto got a like number.

The sale was managed by C. L. Hughes of the California Breeders Sales and Pedigree Company and Col. Ben A. Rhoades of Los Angeles was on the block. Col. Corley of Modesto worked in the ring.

A representative list of sales follows:

BULLS

- 1, King Korndyke Aaggie Fayne, March, 1917; D. E. Cable, \$500.
- 3, Kounias Judge Segis Ormsby, Nov. 1919; J. H. Severin, Modesto, \$200.
- 5, Kounias Sir Colantha 2nd, Feb. 1920; Geo. P. Robinson, \$275.
- 17, Kounias Pietertje Ormsby, Feb. 1919; Geo. P. Robinson, \$200.
- 23, Kounias Aralia King Ormsby, July 1919; Geo. P. Robinson, \$160.
- 48, Kounias King Ormsby 20th, May 1920; G. E. Thornberg, Turlock, \$140.
- 56, Kounias King Ormsby 24th, May 1920; Geo. P. Robinson, \$125.
- 67, Ormsby King Nightingale, Feb. 1919; Louise Zubani, Modesto, \$220.

FEMALES

- 2, Hollywood Ormsby Segis, June 1915; D. E. Cable, \$1,000.
- 4, Dominita Colantha De Kol 2nd, April 1914; Gotshall & Magruder, Ripon, \$1,225.
- 6, Dominita Colantha De Kol 3rd, Feb. 1916; Gotshall & Magruder, \$485.
- 7, Kounias Colantha Korndyke Ormsby, Jan. 1919; D. E. Cable, \$400.
- 8, Kounias Colantha Ormsby De Kol, Dec. 1919; D. E. Cable, \$400.
- 9, Lady Dominita Pietertje De Kol, Feb. 1917; R. P. Melly, Modesto, \$475.
- 11, Kounias Dominita Colantha, Dec. 1917; D. E. Cable, \$125.
- 13, Kounias De Kol Colantha Ormsby, Nov. 1918; D. E. Cable, \$400.
- 14, Kounias Colantha De Kol Ormsby, 2nd, July 1920; D. E. Cable, \$200.
- 15, Kounias Bonnie Pietertje, April 1918; Francis Miller, Ripon, \$140.
- 16, Dominita De Kol Pietertje, Oct. 1915; W. J. Denison, Modesto, \$200.
- 18, Dominita Bonnie De Kol 3rd, Aug. 1918; Joe Morris, Modesto, \$410.
- 19, Lady Dominita De Kol, May 1914; J. P. Carr, Manteca, \$310.
- 20, Kounias Lady Korndyke Ormsby, Jan. 1918; Gotshall & Magruder, \$535.
- 24, Dominita Bonnie De Kol 4th, July 1912; Gotshall & Magruder, \$300.
- 26, Dominita Pietertje De Kol, April 1916; J. A. Stenmark, Manteca, \$700.
- 27, Kounias De Kol Ormsby 6th, Feb. 1920; D. E. Cable, \$250.
- 28, Kounias De Kol Ormsby, April 1919; D. E. Cable, \$300.
- 30, Kounias Bonnie De Kol, Jan. 1918; Gotshall & Magruder, \$535.
- 31, Kounias Bonnie De Kol Ormsby, Jan. 1919; D. E. Cable, \$400.
- 32, Kounias Dominita Ormsby, Oct. 1916; D. E. Cable, \$325.
- 33, Kounias Lady Ormsby Fayne, Dec. 1918; D. E. Cable, \$400.
- 34, Kounias Skylark Ormsby, Feb. 1920; D. E. Cable, \$300.
- 35, Kounias Lady Ormsby 3rd, May 1920; Charles Ruess, Ripon, \$210.
- 36, Kounias Miss Aaggie Fayne, June 1920; Howard Morrow, Turlock, \$150.
- 37, Kounias Ormsby Fayne Pontiac, April 1920; W. H. Bryan, Patterson, \$200.
- 38, Kounias Clem Ormsby Fayne, May 1920; W. H. Bryan, \$200.
- 39, Kounias Valdesa Ormsby, May 1920; C. P. Hageman, Ripon, \$210.
- 40, Kounias Aaggie Fayne Ormsby, April 1919; D. E. Cable, \$325.
- 41, Kounias Fayne Pontiac Ormsby, Mar. 1919; D. E. Cable, \$350.
- 42, Kounias Ulrika Fayne, Nov. 1918; Gotshall & Magruder, \$500.
- 43, Kounias Clem Ormsby, July 1918; D. E. Cable, \$250.
- 44, Kounias Colantha De Kol Ormsby, April 1918; Gotshall & Magruder, \$525.
- 45, Kounias Pontiac Pet Valdesa, March 1918; W. H. Bryan, \$335.
- 46, Kounias Bonnie Ormsby 18th; Mrs. Frank Klutz, Patterson, \$250.
- 47, Kounias Florence Ormsby, Feb. 1918; Gotshall & Magruder, \$675.
- 49, Kounias Gelsche Walker Fayne Jan. 1920; W. H. Bryan, \$310.
- 50, Kounias Miss Gelsche Walker, Aug. 1917; R. P. Melly, \$525.



No Slippage

The long, wide track of the "Caterpillar" Tractor distributes the tractor's weight over so great an area that the ground pressure per square inch is negligible. At the same time it serves another purpose—prevents slippage on any ground surface.

Eliminating slippage prevents power waste—puts the power where it is wanted, in pulling force at the drawbar. That's why the "Caterpillar" Tractor leads in power.

The Holt Manufacturing Company
Stockton, Calif. Peoria, Ill.
Los Angeles, Calif. Spokane, Wash.
San Francisco, Calif.

CATERPILLAR
Reg. U.S. Pat. Off.

The LAUSON 15-25
DUST PROOF—ALL GEARS ENCLOSED

If you expect to buy a tractor this fall, write at once for a copy of our new

Tractor Catalog

This handsome 50-page book fully describes all the features of the LAUSON 15-25 Farm Tractor. It tells why the LAUSON is the most profitable tractor for you to own, and gives many interesting facts on power farming in general.

Distributors for Ore., Cal., Ariz. and Nev.

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61 Beale Street San Francisco, Cal.
THE JOHN LAUSON MFG. COMPANY
34 Monroe Street
New Holstein, Wis.



Eastern Visitors

Will Soon Be Calling on You

Your friends and relatives from the rigorous East will soon be dropping in on you and you will want to entertain them. You will be doing them a great favor, save time and money for yourself, and show them the best and most interesting things of this Southland of ours by directing them to or sending them over our personally conducted Trolley Trips.

MOUNT LOWE—The Mile High Gem
ORANGE EMPIRE TROLLEY TRIP
OLD MISSION-BALLOON ROUTE
Cover the situation thoroughly.

REMEMBER, your auto costs you about 10c per mile, and we take you anywhere for a third of that.

Pacific Electric Railway

ADAMS PIPE WORKS

New and second hand pipe and casings, Riveted steel pipe, valves and fittings. Mail orders given prompt attention. Write, phone or call.

2025 Bay St., Los Angeles, Cal.

51, Kounias Miss Beauty Ormsby 2nd, June 1920; C. P. Hageman, \$160.
52, Kounias Payne Pontiac Ormsby 2nd, April 1920; S. Cookson, Ripon, \$180.
53, Kounias Colantha Ormsby Fayne, May 1920; W. H. Bryan, \$170.
54, Miss Beauty Ormsby, March 1918; D. E. Cable, \$175.
59, Kounias Jetze Pontiac Aaggie, June 1917; W. L. Denison, Modesto, \$425.
60, Kounias Novena Korndyke Ormsby, April 1916; Chas. Ruess, \$400.
61, Kounias Pontiac Fayne, Aug. 1917; W. L. Denison, \$325.
62, Kounias Lady Hengerveld Ormsby, Feb. 1917; Arthur Flux, Modesto, \$200.
63, Kounias Bonnie Hengerveld Ormsby, Feb. 1917; Arthur Flux, \$185.
64, Kounias Menlo Hengerveld Ormsby, Nov. 1916; W. L. Denison, \$250.
66, Kounias Florence Pontiac Aaggie, Feb. 1917; W. L. Denison, \$300.

HOG CHOLERA MONTHS

October and November are the months when the dread disease, hog cholera, is most likely to appear. During those months swine raisers are urged by the United States department of agriculture to be especially observing when feeding hogs in the morning. Any animals in the herd which fail to come to their feed, and particularly those having arched backs and rough coats, should be removed promptly from the rest of the herd.

In some cases hogs sick with cholera die within a few days; in others the disease may assume a chronic form and linger for several weeks. If cholera is suspected swine growers should immediately call a competent veterinarian to make a proper diagnosis and to apply the preventive serum treatment if they are found to be affected with cholera. A post-mortem examination of swine that have died from cholera generally will show one or more of the following symptoms: Purple blotches on the skin; blood-colored spots on the surfaces of the lungs and heart, on the kidneys, and on both the outer surface and inner linings of the intestines, stomach, and bladder; reddening of lymphatic glands; enlargement of the spleen, in acute cases; an ulceration of the inner lining of the large intestine.

In the lingering or chronic cases of hog cholera it is usual to find intestinal button-like ulcers on the intestines.

SOMEBODY GETS A BIG PROFIT ON EVERY HOG

An analysis of the pork situation is furnished by Dr. C. W. McCampbell, head of the animal husbandry department, Kansas state agricultural college. He says:

"A great majority of the pigs of the country are produced in the spring of the year and practically all of these spring pigs are marketed in November, December and January.

"During the past year the farmer was paid an average of \$13.25 a hundred for his 1919 spring pig crop, which means that he received \$33 for a 250 pound pig that cost him \$42.50 to produce. That is the situation that has confronted the producer.

"The consumer that bought the cured ham, cured shoulder, cured bacon, fresh loin and fat back that this 250 pound hog produced paid at the average retail shop \$77.50. This \$77.50 is paid for only 80 per cent of the marketable portion of the hog. It does not include the head, feet, liver, heart, etc. Neither does it include by-products that sell for \$11 and \$14 per hog. Ninety dollars is a conservative estimate of the amount the ultimate consumer paid for the hog the farmer sold for \$33. This represents an increase of 200 per cent between producer and consumer.

"Anyone familiar with the killing of hogs and handling of meat knows that this is an unreasonable spread. It is simply a case of excessive profiteering in a particularly valuable food, especially to the laboring man. It is another instance emphasizing the necessity of closer cooperation between producer and consumer of meats to remedy the present situation of excessive loss to those who are producing a food that must be purchased at excessive cost by those who eat it."

A gas tractor short course will be given at the Union High School at Lodi, San Joaquin County, November 15-20. The school is under the direction of the state college of agriculture. Enrollment is limited to 100.



Off Summer Pastures

Your animals are coming off summer pastures and going on dry feed. It's a big change. Out in the succulent pastures, Nature supplies the tonics and laxatives to keep animals in condition.

—But unless you supply these tonics and laxatives to your stock on dry feed, you are not going to get full returns from your hay, grain and fodder. Besides, your animals are apt to get "off feed" and out of fix.

Dr. Hess Stock Tonic

Supplies the Tonics—Laxatives—Diuretics

It keeps animals free from worms.

It keeps their bowels open and regular.

It keeps the appetite and digestion good.

It conditions cows for calving.

It helps to keep up the milk flow.

It keeps feeding cattle right up on their appetite.

It keeps hogs healthy, thrifty, free from worms.

It means health and thrift for all animals.

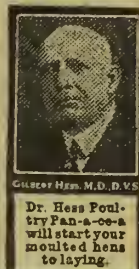
Always buy Dr. Hess Stock Tonic according to the size of your herd. Tell your dealer how many animals you have. He has a package to suit. Good results guaranteed.

Why Pay the Peddler Twice My Price?

25 lb. Pail, \$3.50 100 lb. Drum, \$12.00

Smaller packages in proportion.

DR. HESS & CLARK Ashland, Ohio



Dr. Hess Poultry Pan-a-cola will start your moulted hens to laying.

Dr. Hess Instant Louse Killer Kills Lice

NOW READY TO SHIP

DRIED BEET PULP

Palatable succulent vegetable feed for dairy cows, beef cattle, sheep and hogs

We can take care of orders from any part of the country

The Larowe Milling Company
Detroit, Mich. Los Angeles, Calif.

FORD TRUCK

MOST ECONOMICAL TRANSPORTATION

Ship Your Farm Products to Market by Truck

We Offer Bargains in Used Ford Trucks

We carry a good line of used Fords, all models. Be sure to see this one—1920 used Ford truck. Stake body, pneumatic tires, practically new. We guarantee all our used cars.

Clark & Coberly,

Authorized Ford Dealers

2219 W. Pico St., Los Angeles

FALFADALE FARM DUROCS

Wait for our sale of sows and gilts bred to Great Orion Sensation Junior grand champion at Los Angeles and Riverside. Sale to be held early in February. Sow and boar pigs by the grand champion for sale now.

B. H. Wilkinson, Mgr.

Perris, Cal.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
 December 1, H. E. Vogel, Fresno.
 December 2, Consignment Sale, Tulare.
 December 16-17, Consignment Sale, Sacramento.

Herefords
 November 18, Finnel Ranch Company, Sacramento.

Shorthorns
 November 16, Caledonia Farms, West Sacramento.

Poland Chinas
 November 15, Wm. Marshall & Son, Santa Rosa.
 February 17, Bassett, Ross & Crawshaw, Hanford.

Percheron Horses
 February 17, M. Bassett, Hanford.

C. E. Ratchford, who has been assistant forester in charge of grazing in California, has been promoted to the office of chief grazing officer of the service and will make his headquarters in Washington. Ratchford took an active and constructive interest in the cattle problems of this state and was held in very high esteem by all the members of the California Cattlemen's Association.

John A. Bunting, secretary of the Pacific Coast Hereford Cattle Breeders Association, has left for the East to attend the American Royal Show

at Kansas City. While away it is probable that Bunting will secure a herd bull, as it is known that he has his eye on several of the good young bulls of the East.

The animal husbandry division of the University of California has recently taken a ten months lease on the Jersey bull, Dairy Maid's Gay Prince, owned by Fortini and Nelson of Orland. Dairy Maid's Gay Prince was grand champion at the last state fair.

The Holstein Friesian Association announces that the cow, Carnation Pioneer Segis, has established a new seven day fat production record for the junior two year old class by producing 24,877 pounds fat and 415.6 pounds milk. Her sire is Johanna McKinley Segis and her dam is Daisy Pioneer Clyde.

Chas. S. Howard, a prominent automobile distributor of San Francisco, is establishing a herd of Hereford cattle on his 15,000 acre ranch in Mendocino County. Mr. Howard attended the Sacramento sales and made a number of purchases.

Harry L. Redd, the popular herdsman now in charge of the Jane Garden Farm herd, reports that his sen-

ior four year old cow, Meadmore Prilly Queen, a daughter of the 37 pound bull, King Prilly Konigen, has just completed a seven day record of 27.24 pounds butter. She recently dropped a heifer calf by King Korndyke Pontiac 20th.

A press dispatch under date of November 6 states that the Holstein cow, Carnation Segis Prospect, owned by the Carnation Farms, has broken the world's milk production record by producing 33,469 pounds of milk in 318 days and that she has 47 days to go.

R. J. Yates, Orland, announces December 15 as the date on which he will sell 60 Poland Chinas. Mr. Yates is preparing to move to Anderson and is reducing the size of his herd for that reason. As soon as he is settled in his new location it is his intention to raise more and better Poland Chinas.

Just to show that business is improving, Anchorage Farms, Orland, reports the following sales of Berkshires: 15 bred gilts to Christensen & Bermeister, Willows; two boars to H. H. Gable, Esparto; a sow of Natoma's Baron Duke to G. F. McBride, Gazelle; a bred gilt to Samuel Sutton, Vallejo, and a daughter of Natoma's Baron Duke to Haleakala Farm, Maui, Hawaii.

H. C. Witherow, Live Oak, one of the owners of the Greenwood Duroc herd, served as judge at the late Shasta County farm bureau fair and writes as follows concerning the show: "The hog show was the strong feature of the livestock exhibit, especially in the junior pig classes of both the Durocs and the Polands, and in the senior pig class of the Durocs. W. M. Cutler and Hawes Bros. showed a number of junior pigs that would have looked good in the strong competition at the state fair. If these pigs are properly grown out, Shasta County will certainly be on the map with its Durocs and Polands. There were a number of nice Shorthorns shown, most of them by calf clubs. The first prize animals of both sexes were especially good individuals. There were only five head of sheep shown, offering no competition, but every one was of excellent quality. The advancement in pure bred livestock production in Shasta County during the last two years has been almost marvelous when it is considered that two years ago there was no good stock to speak of in the county, and apparently no inclination to get any. All credit may be given to the farm bureau and the boys and girls clubs."

Les McCracken, Ripon, reports the sale of 20 Poland China sows to a firm at Manteca recently. He is planning a January sale of 35 of his top sows. This will be a very choice offering and should be in demand at that time.

Alex D. McCarty, Modesto, has an outstanding son of Long Boy, the Williams Bros. boar, and out of a Yankee sow, that will be worth looking at any time. This pig is certainly destined to be a great boar if individuality and blood lines count for much.

J. E. Thorp, Lockeford, recently returned from a very successful season on the show circuit with his Jersey cattle and Duroc hogs. He brought three young sows home with him that he purchased from the Diamond Bar Ranch. Thorp has quite a number of young show prospects that will make him a hard man to beat next year.

Messrs. Bassett, Ross and Crawshaw, Hanford, announce February 17 as the date of their next sale of Poland Chinas. Mr. Bassett will sell 20 Percheron horses at auction the morning of the same day.

Howard Vaughn of Sacramento reports that the carload of Shorthorn bulls he exhibited at the recent Los Angeles Livestock Show was sold to the Rindge Estate of Los Angeles and will be used on their ranch near Santa Monica. Vaughn states that there is a brisk demand for good range bulls.

At the recent National Dairy Show at Chicago J. P. Phillips of Dixon won the two year old class with his great heifer, Josephine Johanna Oak De

Kol, that was grand champion at the last California state fair. Bridgford Holstein Company, Patterson, won second with the junior bull calf, King Korndyke Abbekerk Prilly, and second with the senior yearling heifer, Miss Konigen Pontiac Prilly. Following the show the Phillips heifer was sold in the dairy show sale for \$3,150 to a Maryland herd.

The feature of the Pacific International Livestock Exposition to be held at Portland, Oregon, November 13-20 will undoubtedly be Lady Milky Aaggie Pontiac, 17-month-old daughter of Lady Aaggie Echo Hengerveld, world record milk and butter cow in the senior 3-year-old class. Lady Milky Aaggie Pontiac is entered for both show and sale. Her dam, Lady Aaggie Echo Hengerveld, needs no introduction to the Holstein world; she is well known as the only Holstein living to hold as many as three world records and one of the only two living or dead, to have that honor. She was bred on Albert E. Smith's Milky Way Farm at Sumas, Washington, and was sold from there last December to Toyon Farm, Los Altos, for \$10,000 and has since been known as "The Ten Thousand Dollar Cow." The sire of the heifer is Chibmacum Spring Farm King Pontiac, well known herd sire of the Milky Way.

B. H. Wilkinson, manager of the Falfadale Farm Durocs, has picked out a fine bunch of sows and gilts which he is now breeding to Great Orion Sensation Junior, grand champion at Tulare, Los Angeles and Riverside for his bred sow and gilt sale to be held in February. Great Orion Sensation Junior sired the junior champion sow at Riverside and the reserve junior champion sow at Sacramento as well as many other prize winners.

Burr Farm of Los Angeles has just finished records on six of its foundation cows which total 96,148 pounds of milk and 16,024 pounds of butter. Cascade Johanna, an aged cow, made 22,030.4 pounds of milk and 903.82 pounds of butter. La Conner Pontiac Albino Girl, a junior two year old, made 16,378.7 pounds of milk and 681.23 pounds of butter while Duchess Orndyke Sadie Vale, who was junior champion at the 1919 Los Angeles show, and who freshened as a senior yearling, made 13,349 pounds of milk and 572 pounds of butter. With such cows as these, bred to Sir Veeman Korndyke Pontiac and King Korndyke Pontiac 20th, the Burr Farm herd will unquestionably become noted for both type and production.

California Holstein breeders will be interested to learn that the senior and grand champion cow at the National Dairy Show, Doetje Nellie Cornucopia, was at one time in the Walker herd in San Diego County. She was one of several that were purchased by Walter H. Dupee and sold to Aitken Brothers, Waukesha, Wisconsin.

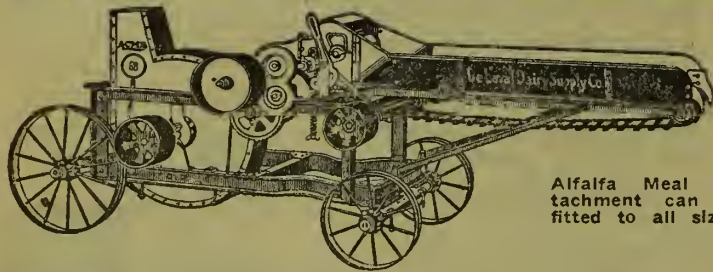
Edward Morrison, who has been connected with a number of leading Shorthorn herds of this state, is now in charge of the Edinger-Johnson Company herd near Hood.

The Holsteins at Santa Anita Rancho are doing wonderfully well on their tests. Mabel Aouda has just finished a seven day test in which she made 28.85 pounds of butter from 684 pounds of milk. Anoakia Gelsche Pontiac Walker, a junior three year old, made 23.50 pounds in seven days. Blanche Nudine Clothilde Walker, the junior two year old who has just come off the show circuit, where she won a number of firsts and two senior championships and was grand champion once, has finished a seven day record of 14.62 pounds of butter eight months after calving. In her first seven months on official test she made 14,640 pounds of milk and 606 pounds of butter.

The Diamond Bar Ranch has sold Cherry Pathfinder, the under six months boar which headed their great prize winning herd of junior pigs at the fairs, to W. P. Hodge of Ilwaco. A senior sow pig sired by Mammoth Sensation Junior was also purchased by Mr. Hodge.

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Santa Rosa, Cal.

130 Herefords Average \$372

The three day series of Hereford cattle sales held at the state fair grounds November 4, 5 and 6 can be regarded as an outstanding event in the beef cattle development of this state. Never before were so many good beef cattle of one breed offered and sold in three days. That fact in itself offers encouragement to producers and is evidence of a growing and stable demand for the better sorts of cattle. Thirty-two buyers absorbed the 130 head of bulls and females listed in the three sales for an average of \$372. While the prices paid in each of the sales can be regarded as very conservative in view of the class of cattle provided, it was felt that the values established were such as will result in a strong future demand. Most of the consignors were prepared to accept lower ratings than they have been accustomed to expect for the reason that we are just winding up our fourth dry year and the season is not far enough along to know whether the rainfall will be sufficient to provide feed. Another factor that operated to hold prices to a lower level is the money situation.

The first sale of the series was the annual fall offering of the Pacific Coast Hereford Breeders Association and consisted of 38 head of females and bulls from six of the leading herds in the West and resulted in an average of \$344. In view of the quality of the offering—which was generally regarded as the best the association has made—the prices paid were rather out of line. This sale was used by the buyers to feel out the situation, bidding was restricted throughout and the vendue suffered on that account.

The top price was \$700 for bulls and females. H. M. Barngrover of Santa Clara and John A. Bunting of Mission San Jose each furnished a bull at that price and Howard Tilton of Madrone was the buyer of each. The Barngrover bull was the senior yearling, Plumas Duke 2d, and the Bunting bull was Mission Chief that was grand champion at the 1919 state fair. The top cow, Pamella, with a carking good bull calf at foot, from the University of Nevada herd, was a real bargain that fell to J. H. Cazier and Sons of Wells, Nevada. In fact, the five lots from that institution each sold below their real values. Cazier and Sons contributed six lots that were eagerly taken by six buyers. Ed T. Morgan of Northam, Nevada, sold two lots and Chas. Rule of Duncan's Mills sold ten head of exceptionally well bred females.

J. G. Roberts of Madera, Howard Tilton of Madrone, Dr. O. I. Daley of Porterville were the heaviest buyers in that sale.

The second day was given over to the first individual sale offering ever made from the well known and popular herd of J. H. Cazier and Sons, Wells, Nevada. This firm owns one of the best collections of Herefords in the West, and the fact that a large proportion of the offering consisted of daughters of their well known herd bull, Harris Standard 2d, and were in calf to the \$10,000 Beau Blanchard 76th, furnished the incentive for the buyers to manifest a more liberal disposition in the matter of bidding. The offering was entirely worthy and this state will be the richer as most of the cattle went to California buyers.

The top of the sale established a new Pacific Coast record for a Hereford female when the good cow, Nevada 4th, a daughter of Harris Standard 2d, with an outstanding bull calf by Beau Blanchard 76th, went to E. A. Noyes and Son, Sutter, for \$2,100. It is of interest to know that the buyers refused a cash offer of \$1,700 for the calf shortly after the sale. The buyers are well known breeders and were among the most critical buyers at the sale. Besides the top female they got the second highest and the third highest priced cows in lots 24 and 8 at \$1,325 and \$1,100 each.

At this sale a new buyer, Chas. S. Howard of San Francisco, made his debut and selected six head of the better things. Rick De Bernardi of Reno, Nevada, was after the good ones and selected eight head to add to his good herd. H. J. Buchenau of Daulton Station bought four head of females. The 50 head, 46 females and

four bulls, sold for an average of \$488.

The third sale consisted of 42 head of bulls and females offered by Barngrover and Wright of Santa Clara. This offering was mostly heifers, and the fact that they came almost direct from the range to the sale, and sold rather in the rough, served to hold their values down to an average of \$274. The sale also suffered by being the last of the series, as many of the buyers present the first two days did not stay over. It is quite certain that the buyers secured many bargains and because of the exceptionally good pedigrees back of the cattle they will prove profitable investments. C. H. Nortridge, Banta, and Ed T. Morgan of Northam, Nevada, were the two leading buyers, the former getting 16 head and the latter 11. Other prominent buyers were: J. F. Dunne, Gilroy; Howard Tilton and J. G. Roberts.

All three of the sales were merged by C. L. Hughes of the California Breeders Sales and Pedigree Company, Sacramento. Col. Ben A. Rhoades of Los Angeles was the auctioneer and he was assisted by the veteran breeder, Frank W. Van Natta, formerly of Indiana but now living at Upland; W. H. Case, representing the American Hereford Cattle Breeders Association, and John A. Bunting, secretary of the Pacific Coast Hereford Breeders Association.

A complete list of the sales follows:

H. M. Barngrover Consignment

1. Plumas Duke 2d (bull), December 1918, Howard Tilton, Madrone, \$700.
2. Ann Bly 2d, February 1916, Wm. Briggs, Dixon, \$385.
3. Patricia Sue, January 1919, Dr. O. I. Daley, Porterville, \$300.
4. Ada Elinore 3d, October 1918, Nortridge Bros. Banta, \$300.
5. Inez Donald, March 1916, Howard Tilton, \$325.
6. Miss Repeater 100th, March 1914, Howard Tilton, \$260.
7. Miss Perfect 2d, February 1917, Dr. O. I. Daley, \$200.
8. Miss Tempter 19th, September 1917, Howard Tilton, \$225.
9. Goldie Perfect, October 1917, J. H. Cazier and Sons, Wells, Nevada, \$300.
10. Kate Fairfax, March 1915, Dr. O. I. Daley, \$250.

John A. Bunting Consignment

12. Mission Chief (bull), January 1919, Howard Tilton, \$700.
13. Carnation 2d, September 1914, Howard Tilton, \$425.
14. Trixie January 1919, J. G. Roberts, Madera, \$150.
15. Miss Gay Lad 51st and b. c., March 1917, Howard Tilton, \$300.
16. Lady Ranier and c. c., May 1916, H. M. Barngrover, Santa Clara, \$490.

John H. Cazier & Sons Consignment

17. Lady Generous, February 1919, Ed T. Morgan, Northam, Nevada, \$225.
18. Bearer 2d, August 1918, Dr. O. I. Daley, \$360.
19. Eldena 2d, April 1918, H. J. Buchenau, Daulton Station, \$250.
20. Carnation Girl, April 1914, E. A. Noyes & Son, Sutter, \$475.
21. Tulasco Lass and c. c., October 1914, H. M. Barngrover, \$475.
22. Begin and c. c., April 1914, J. A. Niles, Porterville, \$300.

Ed T. Morgan Consignment

23. Angel, April 1917, Wm. Briggs, \$325.
24. Riverside Waxy, May 1919, J. H. Cazier & Sons, \$300.

Consigned by Chas. Rule, Duncan Mills

25. Rosemont 20th, June 1919, J. A. Niles, \$355.
26. Marian C. P., May 1914, Wm. Bemmerly, Woodland, \$375.
27. Substitute, J. G. Roberts, \$175.
28. Sonoma Lady, March 1918, Howard Tilton, \$200.
29. Sonoma Lass 4th, March 1918, J. G. Roberts, \$250.
30. Sonoma Lass, April 1918, J. G. Roberts, \$250.
31. Eva Gleed 5th, March 1917, J. G. Roberts, \$200.
32. Celeste 2d, June 1917, J. G. Roberts, \$350.
33. Mytila, March 1915, J. G. Roberts, \$300.
34. Belle Sonoma, April 1918, Howard Tilton, \$235.

Consigned by University of Nevada

35. Mojave, September 1918, Howard Tilton, \$370.
36. Ormonda, October 1918, Jay G. Brown, Porterville, \$310.
37. Pamella and h. c., May 1915, J. H. Cazier and Sons, \$700.
38. Washoe Sahrina, September 1914, H. M. Barngrover, \$325.
39. Nevada Sahrina, May 1912, Jay G. Brown, \$450.

J. H. Cazier & Sons Sale

1. Bonnie Lass 12th, September 1918, H. J. Buchenau, Daulton Station, \$425.
2. Bambo 3d, October 1918, Rick De Bernardi, Reno, Nevada, \$400.
3. Juliet 4th, November 1918, Rick De Bernardi, \$300.
4. Belted 2d, September 1918, Chas. S. Howard, San Francisco, \$320.
5. Beladonna 2d, October 1918, F. W. Hoffman, Byron, \$375.
6. Nevada 4th and bull calf, September

- 1917, E. A. Noyes & Son, Sutter, \$2,100.
7. Artemisa, June 1918, Chas. S. Howard, \$660.
8. Marianne, June 1910, E. A. Noyes & Son, \$1,100.
9. Bonnie, November 1918, H. J. Buchenau, \$325.
10. Lorna Doone 8th, November 1918, Chas. S. Howard, \$320.
11. Batton and cow calf, March 1914, F. W. Hoffman, \$600.
12. Beyond and cow calf, June 1914, Chas. S. Howard, \$575.
13. Berob and bull calf, May 1914, Howard Tilton, Madrone, \$425.
14. Bat, March 1914, R. J. Prewitt, Antioch, \$525.
15. Banjo and cow calf, March 1914, Chas. S. Howard, \$725.
16. Olita 2d, June 1918, H. J. Buchenau, \$350.
17. Honora 5th, April 1918, H. J. Buchenau, \$385.
18. Bat 2d, June 1918, Moulton Warner, Cool, \$335.
19. Basal 2d, November 1918, W. S. Walters, Healdsburg, \$250.
20. Berob 2d, November 1918, Rick De Bernardi, \$225.
23. Circe 5th, April 1919, Dr. O. I. Daley, Porterville, \$625.
23. Carnation Girl 2d, September 1918, E. A. Noyes & Son, \$1,325.
25. Circe 4th, June 1917, R. J. Prewitt, \$575.
26. Benight, April 1914, Moulton Warner, \$485.
27. Batsman 2d, March 1918, R. W. Weldon, Toll House, \$310.
28. Columbia 6th, June 1919, E. A. Noyes & Son, \$300.
31. Benediction 2d, August 1919, E. A. Noyes & Son, \$250.
32. Eulalie 4th, April 1919, Moulton Warner, \$250.
33. Ailsa 5th, April 1919, Nicholas Tavale, Cement, \$275.
34. Louise 5th, January 1919, Rick De Bernardi, \$285.
35. Benight 2d, June 1919, Rick De Bernardi, \$360.
36. Juneatta 3d, March 1919, J. G. Roberts, Madera, \$290.
37. Batton 2d, October 1918, Jay G. Brown, Porterville, \$390.
38. Olivia 5th, September 1918, Rick De Bernardi, \$385.
39. Bias 2d, August 1918, Finnell Stock Farm Co., Galt, \$500.
40. Corinna 4th, September 1918, Chas. S. Howard, \$260.
41. Beck 2d, October 1918, Dr. O. I. Daley, \$200.
42. Donna C., July 1918, Dr. O. I. Daley, \$850.
43. Duma and bull calf, September 1917, Rick De Bernardi, \$600.
44. Back 2d, August 1918, Jay G. Brown, \$525.
45. Benight 3d, June 1919, E. A. Noyes & Son, \$500.
46. Baptist 2d, July 1918, Rick De Bernardi, \$360.
47. Bazar 2d, September 1918, W. S. Walters, \$310.
48. Backslider 2d, October 1918, F. W. Hoffman, \$400.
49. Bonnie Lass 7th, April 1914, R. J. Prewitt, \$300.
50. Dew Drop, January 1918, E. A. Noyes & Son, \$900.

BULLS

21. Nevada Lad 120th, February, 1920, W. S. Walters, \$335.
22. Nevada Lad 100th, September 1919, J. G. Roberts, \$550.
29. Nevada Lad 82d, May 1919, Moulton Warner, \$425.
30. Nevada Lad 72d, March 1919, W. L. Bergstrom, Pleasanton, \$550.

Barngrover & Wright Consignment

1. Miss Perfect 8th, February 1918, T. C. Raney, Toll House, \$300.
2. Miss Perfect 10th, March 1918, C. H. Nortridge, Banta, \$265.
4. Miss Columbus 3d and bull calf, March 1918, Ed Morgan, Northam, Nevada, \$300.
5. Miss Tempter 22d, July 1918, J. F. Dunne, Gilroy, \$300.
6. Miss Perfect 12th, June, 1918, R. W. Weldon, Toll House, \$290.
7. Miss Columbus 6th, August 1918, Howard Tilton, Madrone, \$375.
8. Miss Gay Lad 54th, September 1918, C. H. Nortridge, \$285.
9. Miss Fairfax 3d, November 1918, J. F. Dunne, \$295.
10. Miss Fairfax 4th, November 1919, J. F. Dunne, \$300.
11. Miss C. 10th, January 1919, Ed Morgan, \$300.
12. Miss Fairfax 5th, January 1919, J. F. Dunne, \$285.
13. Miss Perfect 13th, January 1919, C. H. Nortridge, \$225.
14. Miss Perfect 14th, January 1919, C. H. Nortridge, \$225.
15. Miss C. 11th, January 1919, Ed Morgan, \$285.
16. Miss Fairfax 7th, January, 1919, J. F. Dunne, \$300.
17. Miss C. 12th, January 1919, C. H. Nortridge, \$285.
18. Miss C. 13th, January, 1919, Ed Morgan, \$300.
19. Miss C. 15th, January 1919, C. H. Nortridge, \$275.
20. Miss C. 16th, February 1919, C. H. Nortridge, \$250.
1. Miss C. 17th, March 1919, R. W. Weldon, \$300.
22. Miss C. 18th, March 1919, J. G. Roberts, Madera, \$260.
23. Miss C. 19th, March 1919, Ed Morgan, \$290.
24. Countess, December 1915, C. H. Nortridge, \$285.
25. Miss Gay Lad 50th, March 1917, Howard Tilton, \$235.
26. Miss Tempter 17th, June 1917, C. H. Nortridge, \$250.
27. Miss Tempter 20th, October 1917, C. H. Nortridge, \$250.
28. Miss Perfect 6th, September 1917, Ed Morgan, \$275.
29. Doris and cow calf, May 1905, J. G. Roberts, \$125.
30. Lady Amethyst 8th, May 1913, C. H. Nortridge, \$200.
32. Miss C. 20th, March 1919, C. H.

33. Miss C. 21st, March 1919, Ed Morgan, \$285.
34. Miss C. 22d, March 1919, C. H. Nortridge, \$250.
35. Miss C. 25th, April 1919, Ed Morgan, \$290.
36. Miss C. 26th, April 1919, Ed Morgan, \$275.
37. Miss C. 27th, May 1919, C. H. Nortridge, \$250.
38. Miss C. 28th, May 1919, Ed Morgan, \$300.
39. Miss C. 29th, May 1919, H. J. Buchenau, \$285.
40. Miss C. 30th, July 1919, C. H. Nortridge, \$225.
44. November 1918, Ed Morgan, \$285.

BULLS

41. Anneas, February 1919, C. H. Nortridge, \$200.
42. Bourbon C. 25th, December 1919, J. D. Hoppe, Lodi, \$160.
43. Bourbon C. 31st, March 1920, J. D. Hoppe, \$160.

W. H. McCURDY

PRESIDENT OF THE

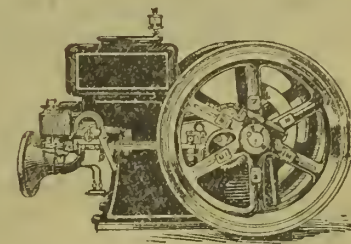
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Budget for the year ending June 30, 1921, calls for \$48,200,000. During last year cost of administration was 3.3 cents out of every dollar expended. All other expenditures went direct to relief work.

Sign and send blank to American Red Cross National Headquarters, Washington, D. C. so as to reach Washington before November 25, or pay dues to nearest Red Cross chapter.

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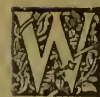
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FLAX MAY COME BACK



We have from Robert E. Jones of the Sutter Basin Company statement which follows, in effect that flax may come back. We surely hope it may, for flax should be grown with profit and make a valuable addition to our crop rotation. However, there are obstacles to overcome. Mr. Jones writes:

An experimental plot of 20 acres of flax is to be planted during the coming season by the California experiment station in Sutter Basin 20 miles northeast of the university farm at Davis. Professor George W. Hendry of the agronomy division at Davis is in charge of the project.

Because of the high market price of linseed oil, Professor Hendry states that there is excellent promise of a revival of flax growing, which at one time had a definite place in California's agriculture. The planting of 20 acres is to be made in cooperation with the Sutter Basin Company.

"Flax has been grown experimentally at the university farm for about six years," said Professor Hendry in discussing the crop. During the period we have tested more than a score of oil as well as several fiber producing varieties, and have found that by proper choice of varieties and proper culture methods, satisfactory and profitable yields of flax seed may be produced in the vicinity of Davis without the aid of irrigation.

"About 20 years ago California produced annually in the vicinity of 30,000 bushels of flax seed. The principal areas of origin were Rio Vista, Biggs and Pescadero. The seed was of good quality, and the Pacific Oil and Lead Works of San Francisco took the entire product at good prices. The total production, however, was not sufficient to warrant the operation of the mill in San Francisco, and this firm, which was the principal buyer, discontinued buying seed. Since that time there has been no market for flax seed in this state and consequently there has been no commercial production. Farmers producing flax seed at the present time would be under the necessity of shipping their seed to the Portland Linseed Oil Works at Portland, Oregon. This concern is now using about 1000 bushels daily and is receiving the seed principally from Montana and northern China. The prevailing market prices make flax seed production remunerative to the farmer.

"Satisfactory yields have been obtained at the university farm by drilling the seed in a well prepared fall plowed soil, during the month of February, using an ordinary grain drill, set to drop about 30 pounds of seed per acre. Summer fallowed lands may be fall planted successfully soon after the first fall rains, since flax is a hardy crop and will withstand as much frost as barley.

"Yields at the university farm have ranged from 500 to 1,500 pounds of clean seed per acre, depending upon variety and season. February seeded flax is in condition to harvest during the latter part of June and may be cut with an ordinary grain or rice binder or with a combined harvester modified for the purpose. Bound flax may be threshed in an ordinary grain separator and must be recleaned prior to shipping to the crusher.

"This office is planning to plant about 20 acres of flax in cooperation with the Sutter Basin Company next Spring. We are also doing some work at the present time in the utilization of the flax straw after harvesting, as a by-product to be used in the manufacture of electrical insulating paper."

Touching again upon the obstacles to be overcome, we may refer to the first one as that of market. Under present conditions in California it would hardly be wise to take up flax or flax seed production excepting experimentally under contract.

Wishing information along the marketing line, we have written the Pacific Oil and Lead Works at San Francisco as to outlet for fiber or seed and have the following:

"We purchase seed for our mills in Portland, Oregon, where a ready market for the seed can be found. On today's market we would be willing to pay 4 1/2 cents per pound net weight delivered Portland, Oregon.

"It is impossible to raise flax seed both for seed and for fiber, for the reason that the seed must be thoroughly ripe to have a value for oil

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and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH. VENTILATED Sublimed Sulphur—Impalpable Powder, 100% pure, in double sacks, for Dry Dusting and making Paste Sulphurs.

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men \$5 per day for making the solution and applying same.

To create additional available plant food and prevent smut in grain, drill into the soil 110 pounds per acre of TORO BRAND SPECIALLY PREPARED AGRICULTURAL SULPHUR—or our DIAMOND "S" BRAND REFINED POWDERED SULPHUR. This soil treatment has increased various crops up to 500%. Send for Circulars No. 6, 7 and 8.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dusting Sulphur, Mixtures, etc.

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milling, and when the seed is thoroughly ripened the fiber is so brittle that it is only good for paper manufacturing afterward.

"We do not believe that for paper manufacturing the fiber would be of value in California, on account of the freight to the paper mills being more than the value of the straw. We do not know of any mills in California that crush flax seed."

Book Review

SOIL ALKALI

"Soil Alkali, Its Origin, Nature, and Treatment," by Franklin Stewart Harris, director Utah agricultural experiment station. Published by John Wiley & Sons, New York.

This book is dedicated to Dr. John A. Widtsoe, well known to many irrigation and semi-arid section farmers. It has special interest to the Pacific Coast for it discusses problems with which many farmers have to deal. In fact, alkali is becoming a vastly more perplexing problem than was anticipated a few years ago. It was felt that, while fairly expensive, one method always offered itself. That method was drainage, but the best drainage systems have in some cases failed of successful operation. Test has been made in this state, where a section of land was underlaid with a very extensive drainage system some years ago, but the land is still barren. The University of California has made extensive investigation and has passed to Californians some of the information gathered from these investigations in the form of circulars and bulletins, the last of which is Circular 219, issued last May. This is on the "Present Status of Alkali" and is by Dr. W. P. Kelley.

Dr. Harris' book will prove valuable in the present discussion. The book consists of 16 chapters touching upon description of alkali lands, origin of alkali, nature, toxic limits, vegetation as an indicator of alkali, chemical methods of determining, relation of alkali to physical and biological conditions, movement through soil, methods of reclaiming, practical drainage, crops fitted to alkali lands and other live questions. The book has 260 pages and is liberally illustrated. We quote from the author's preface:

"The study of soil alkali is by no means simple nor have all the problems relating to it been solved. The many different salts involved, each with its own properties; the various types of soils in which these salts occur, all with different textures and composition; the complex relations between the soluble salts of the soil and the plants growing on it; and the several economic factors involved in the reclamation of alkali land: these and numerous other considerations make the problems connected with soil alkali as difficult to solve as any found in agricultural science.

"The excuse for writing a book on a problem that is so far from solution is found in the great demand that exists for one volume containing the important information concerning alkali. At present the literature of the subject is very much scattered and is largely unavailable to the average student of soils."

WORK IN FORESTRY

The forest school in the state college of agriculture is under the charge of Prof. Walter Mulford and has under way a number of useful studies in California.

One is a study of the growth and yield of various species of eucalyptus. It is plain that much more planting of these trees, and also of the best acacias, may be expected in our foothills and on lands unfit for profitable agriculture.

Another topic deals with species suitable for windbreaks in this state and that is an important subject upon which much has been hastily said without sufficient experimentation.

Turning to the needs of our lumbermen, we note that Captain Donald Bruce of the forest school is now preparing studies of factors affecting cost of log making and skidding; also volume tables of California species of timber trees, and lastly, a study of forest growth (increment) on cut over lands. The value of this last will be best understood if the reader thinks of the vast areas of such lands which must be restored to full usefulness by

either the government or private parties.

The national forests are constantly at work accumulating data for technical and scientific publication. One on the second growth yellow pine in the Sierra Nevada has been going on for years in several forests.

Many readers are interested in the various investigations of grazing and livestock conditions in different forests. Twenty-eight or more such studies are reported in the August "Bulletin of the National Research Council," published by the government. They deal with artificial reseeding of ranges with new varieties of grasses, alfalfas, etc., with burned over ranges, rotation grazing, with all of our native forage plants, and with the effects of grazing on stream flow erosion, timber cover, rainfall, etc. They especially consider methods of handling livestock.

One study is devoted to coyote proof enclosures, and a very able one takes up the improvement of grade of stock and increasing the calf crop. Some forests are investigating the pos-

sibilities of browse range, and this subject will be taken up in California also. Of course a point of much importance to stockmen, carrying capacity, is nowhere neglected. Neither is the eradication of poisonous and worthless plants from every range neglected. In fact, a great deal is being done in this last line which has been put up to grazing rangers and experts from a great many mountain ranges, especially meadows, these 25 years. The thought behind this and all other studies which forest workers take up is that we must have the fullest utilization of all material—must "cut out the waste."—Charles H. Shinn.

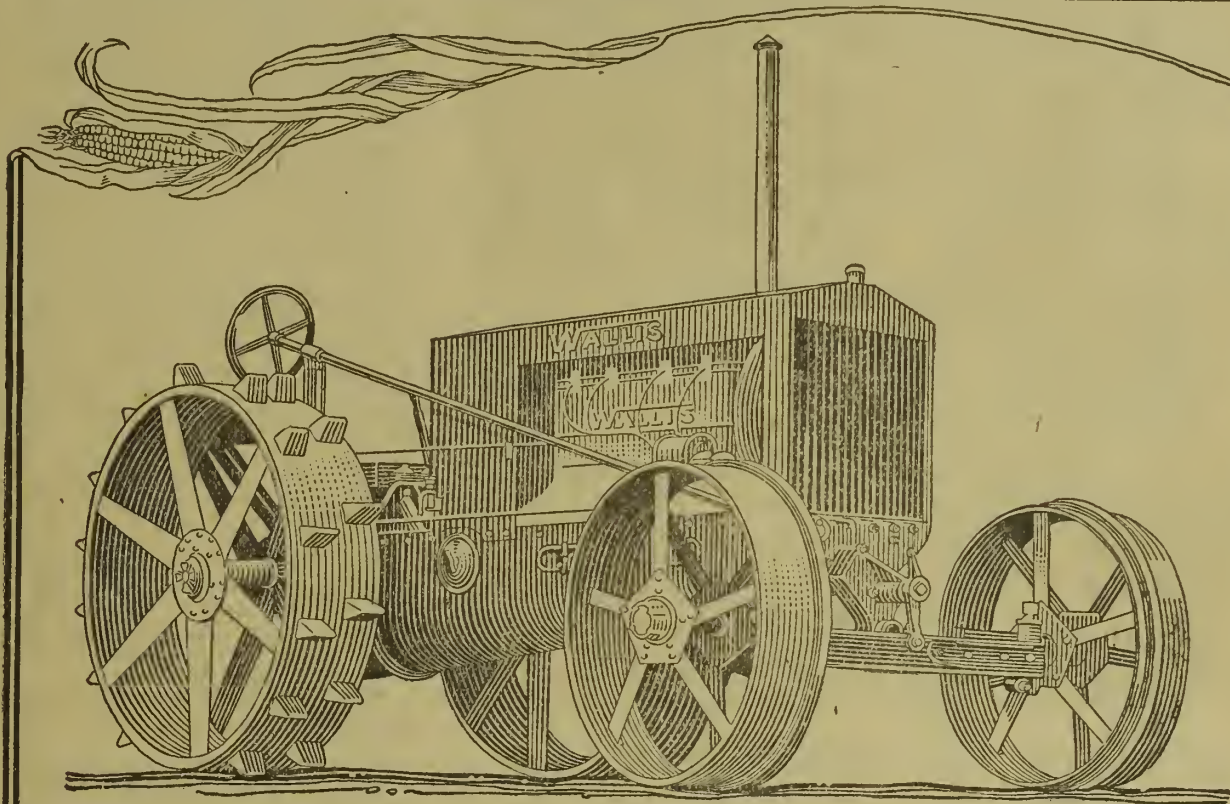
Tests made by the United States department of agriculture with 130 lots of Australian wheats recently introduced into this country have brought out three varieties adapted for growing on the Pacific Coast, where they have produced larger yields than some of the native commercial varieties. They are known as Federation, Hard Federation, and White Federation. The Australian

varieties in general are susceptible to most cereal diseases, but many of these are not destructive in the Pacific Coast region.

From 1,000 to 2,000 tons of tomato seeds go to waste each year in the big puiping plants east of the Mississippi River. Investigations by the United States department of agriculture indicate that they can be profitably recovered and converted into an edible oil and a press cake or meal for stock feed, with a gross return of more than \$85,000 and a net of about \$35,000. Plants would operate two months a year on tomato seeds and might be used for grape and pumpkin seeds in addition, reducing the overhead.

Farming is just one emergency after another; so the successful farmer is the one who is ready for any emergency.

Profitable farming is a matter of business and farms can be most successfully operated only on a sound business basis.



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POULTRY

POULTRYMEN—POULTRYMEN
Both the novice and the experienced poultrymen should have a copy of "Poultry for Profit" in order to prevent mistakes commonly made in the poultry business. This cloth bound book of 225 pages and 18 illustrations is written by Jean Koethen, a practical authority on all branches of the poultry business in California. Price \$1.00, postpaid. Cultivator Publishing Co., 115½ N. Broadway, Los Angeles.

For Sale—One million S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock for spring 1921 delivery. January prices \$5.00 per 25, \$10.00 per 50, \$18.00 per 100. Special prices 500 and 1,000 lots. Safe delivery live vigorous chicks guaranteed. No money in advance; pay on delivery. Order early chicks now and realize big broiler profits. Finest hatchery in the world. Established 1898. **MUST HATCH INCUBATOR CO.**, 438 Seventh Street, Petaluma, Calif.

Raise Fall Chicks. They are profitable. Write for circular. See why they pay. Chicks every week. R. I. Red, Barred Rock, White Leghorn. Also booking for spring delivery. Order now and get a desirable date. Safe arrival guaranteed. **Stubbe Poultry Ranch and Hatchery, P. O. Box 67, Palo Alto.**

Petaluma Hatchery—Established 1902. If you want good fall layers get chicks in the fall. We guarantee satisfaction. There will be but few chicks hatched this fall. The wise ones are buying. Send for prices. **L. W. Clark, 615 Main Street, Petaluma, California.**

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White Leghorn Baby Chix from heavy laying **HOGANIZED STOCK**. Safe arrival of full count, live, strong chicks guaranteed. Price list and interesting literature on application. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

In order to prevent mistakes and disaster in the poultry business every poultry raiser should familiarize themselves with the rules and teachings of "Poultry for Profit." It contains 225 pages and 18 illustrations bound in cloth and sent postpaid for \$1.00. Cultivator Publishing Co., 115½ N. Broadway, Los Angeles.

Watch Us Grow—"Quality Chicks." We are now booking orders for the season of 1921. White and Brown Leghorns, R. I. Reds and Barred Rocks. Order early. **E. W. Ohlen, Campbell, California.**

Barred Plymouth Rocks—"Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. **Charles H. Voden, Los Gatos, California.**

White Leghorns—Chicks and hatching eggs from the home of heavy layers. Spring orders being booked. Send for price list. **Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, California.**

For Sale—Pullets \$2.00; Cockerels \$5.00 each and upward—White Leghorn, Brown Leghorn, White Rock, Mahalo Farm, P. O. Box 597, Sacramento, California.

Baby Chicks—White Leghorns—10's, 100's, 1000's hatched right in \$60,000 brick and concrete hatchery from Hoganized, Trapped heavy layers. **PEBBLESIDE POULTRY FARM, Sunnyside, California.**

Pure Bred White Plymouth Rock cockerels, U. R. Fishel strain, splendid birds. Prices \$5 to \$15. **Mrs. B. M. Joseph, Fallon, Nevada.**

Day Old Chix—Barred Rocks, R. I. Reds, Buff Oringtons, Black Minorcas, Anconas, Buff, White and Brown Leghorns. Enoch Crews, Seabright, California.

Place Your Order Now for chicks for 1921. Standard varieties. Prices right. Send for circular. **Madera Hatchery, Madera, California.**

Thoroughbred Barred Plymouth Rocks. Mrs. M. A. Warren, 36 Little Delmas Ave., San Jose, California.

Baby Chicks from selected egg type S. C. White Leghorn hens. **Tunman Poultry Farm, Box 7-C, Ceres, California.**

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Earl E. Sanders, Modesto. breeder of Mammoth Bronze turkeys and Single Comb White Minorcas. Is booking orders for eggs, chicks and breeding stock. Route D, Box 1880.

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For Sale—Bourbon Red Turkeys. Mrs. Palmer Smith, Patterson, California.

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For Sale—Pure-bred Jersey Bull, 18 months old. Prize winner at two fairs this fall. \$250.00 if taken now. **W. H. ALFRED, Loleta, Humboldt County, California.**

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. **T. T. Miller, Hollister, California.**

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. **A. W. Morris & Sons, Woodland, California.**

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Registered Holstein Bulls, various ages at **Nuevo Stock Farm, Wineville, California.** **E. R. Stalder, owner.**

Registered Holstein Bulls of various ages for sale. **Millbrae Dairy, Millbrae, California.**

Reg. Shorthorns—Fair Oaks Ranch, Willits, California.

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Nursery Stock—We are offering commercial lots in Bartlett pear trees, at prices which will save you planters big money. Have apple, pears, prunes, cherry, strawberry, berries, etc. **NO AGENTS.** Try our Mail Order System. Send for Planters List. 30 years in business. **CARLTON NURSERY COMPANY, CARLTON, OREGON.**

For Sale—Oregon Plum and Dollar Strawberry plants now ready for delivery. \$2.00 per hundred, postpaid. **Burbank Thornless Blackberry \$15.00 per hundred.** Seedling Black Walnut, 2 to 3 feet, \$15.00 per hundred. **Ben Putnam Nursery, Winters, California.**

50,000 Florida Sour Stock; 100,000 California Sweet Seedling orange seed-bed stock, 15 months old, suitable for fall planting. It will pay you to plant this fall. **SOUTHLAND NURSERIES, 1941 East Colorado Street, Pasadena, California.** Phone Colorado 352.

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TREES—TREES—ALFALFA SEED Etc. Full stock—best varieties, now. Write **J. L. LAWSON, San Jose, California.**

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Certified Kadota Fig Trees and cuttings. **The Beckwith Fig Gardens, Reedley.**

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For Sale—Used ranch material, windmills pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for our "Special Bargain" price list. **Demmlt Co. Upstairs, 120 N. Main, Los Angeles.**

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Lamb's Durocs—Seven good sows with litters, twenty open gilts ready to breed, weaned pigs, two good boars. All of best blood lines. Priced right to close out the herd. Satisfaction guaranteed. **Elmer Lamb, Ceres, California.**

The Home of the Durocs—The blood of Giant Wonder, Big Model, Orion King Gano, Top Sensation 1st, and Great Model. At head of herd is Col. Great Wonder I Am. **Maxwell & Penfield, Lankershim, California.**

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. **Harvey M. Berglund, Dixon, California.**

Big Type Durocs at Keystone Ranch by Top Sensation 1st, May Rose King, Winsor's Giant Orion. Choice March boars and gilts for sale. **E. F. Myers, Lankershim.**

Bred Sows and Gilts and young stock. Pathfinder and Great Wonder I Am breeding. Monthly payments if you wish. **Derryfield Farm, Capital National Bank Building, Sacramento.**

Big Type Duroc-Jersey Boars and spring gilts for sale; from Monarch and Orion breeding. All are prize stock. Price right. Guaranteed. **Lowell Beaver, Fresno, California, R. C. Box 397.**

For Sale—Two good Duroc sows with litter of 10 each. Sired by Great Model 233139. Also three open gilts. Stock at Owensmouth, California. **Wm. T. Mead, 5347 South Flower, Los Angeles.**

Boyanna Big Type Durocs—Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. **J. Boyd Harrold, Dixon, California.**

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Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. **Hollow Hill Farm, B. W. Shaper, Manager, Colton.**

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Big Type Poland Chinas, boars and sows, of April, May and June farrow, sired by Tourist Master the boar I got from Iowa last winter. I would also sell Presidents Model. He was first aged boar at Los Angeles and Riverside this year. **H. Christiansen, Arlington.**

We Won 10 Ribbons in the Los Angeles Livestock Show; the ribbons are fine, but the pigs are finer. **Viola L. Renwick, Santa Barbara, California.**

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. **J. A. Crawshaw, Hanford, California.**

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. **Ferguson & McKalg, Orland, California.**

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Farm Manager With Energy. Push and proven ability desires position on large ranch where results will be appreciated. Reference given if desired. Give general outline of your proposition when answering. **Box G, Cultivator, Los Angeles.**

Wanted—Walnut Meats and Cull Walnuts. We have been in this business 15 years, solicit culls for cracking only, paying cash. **Fred L. Mitchell & Son, 214 French Street, Santa Ana, California.** Phone 551-M.

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Wanted—To hear from owner of land for sale. **O. K. Hawley, Baldwin, Wisconsin.**

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Equipped Ranch Near City

Less Than \$100 Acre
On boulevard city, only 2 miles RR town; 160 acres include 110 acres rich tillage; this year 70 acres fine wheat, 20 acres corn, 5 acres beans, 5 acres oranges, lemons, grapefruit, olives, almonds, walnuts; 2 acre pepper tree grove; surrounded by great fruit farms; bungalow 6 rooms, bath, cement cellar, piped water, magnificent shade trees; big barn, good cottage, blacksmith shop, poultry house for 1,500 birds, new garage; aged owner made money, retiring, quick buyer gets good pair mules, Jersey cow, lot machinery, tools, poultry, etc.; everything \$14,750 easy terms. Details this and many Southern California orange groves and farms page 91 Strout's Big New Illustrated Catalog Farm Bargains 33 States. Call or write for free copy. Copy free. **STROUT FARM AGENCY 503EJ Wright, Callender Bldg., Los Angeles, California.**

FOR SALE AND EXCHANGE
10-20-40-60 and 80-acre ranches, rich level, plenty water; proven grape (Thompson seedless), fig and alfalfa land. Price right, easy terms.

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Some of the finest dairies in the state. **Chas. McNeely, Alhambra, California.**

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Bishop Land Co. can furnish from 5 to 1200 acres of the best land in the Valley. Address **Bishop, California.**

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Strawberries—Carolina and Superb, two of the leading everbearing varieties, and heavy producers, particularly the Carolina. Berries large, firm and of good flavor, \$3.00 per 100 and \$25.00 per 1000. Also, Brandywine and Klondike, \$2.50 and \$20.00. All stock offered strictly first-class, prices **F. O. B. HARRIS SEED COMPANY, San Diego.**

Strawberries—1,000,000 plants leading varieties; 200,000 Cuthbert raspberry; 100,000 Black Cap Tips; 100,000 Loganberry tips. Order now low prices. Also 100,000 choice peach seedlings—will graft in plums or prunes on contract for fall delivery 1921. **Lafayette Nursery Company, Lafayette, Oregon.**

For Sale—Best rooted grape vines of Thompson, Malaga, Emperor, Sultan, Muscat and Fig Trees of Callmyrna, Black Mission, Adriatic and red wonderful Pomegranate Trees at cheap prices. This stock is growing at Madera, Delano and Cutler. **P. O. Box 605, Dinuba, California—S. K. Hahn and Company.**

Strawberry Plants—They go fast but still have a few thousand left, at reasonable prices of following varieties: Federal, an Everbearer and strong plant Brandywine, an old stand-by; Marshall an early and good bearer; Klondike, good easy to clean berry. Address: **H. D. Radelett, Springville, California.**

For Sale—Strong Mountain Grower Brandywine, Carolina and Klondike strawberry plants at two dollars per hundred, postpaid. **B. BRYAN, Camp Baldy, California.**

Cory Thornless Mammoth Blackberry—Strong plants; dozen \$3.00 postpaid. Also have phenomenal Loganberry, gooseberry, currant, and Giant Crimson rhubarb. **MOUNTAIN PASS NURSERY, Jamestown, California.**

Cory Thornless Mammoth—Largest and best blackberry; ripens early; few seeds. Write for descriptive price list. Get plants from **William Mortenson, Route A, Box 209, Lodi, California.**

For Sale—Strawberry, Rhubarb plants. Will make special rates in quantity lots. **J. A. Schoonover, 105 N. Alameda Street, Alhambra.** Phone 76 Alhambra.

Brandywine and Banner Strawberry Plants, prices reasonable. **Lon King, 158 West Fourth, Riverside, California.**

Pumpkin Seed—Mixed Pumpkin Seed good germination, 25¢ per lb. **Aurora Seed Mill, Stockton, California.**

Strawberries—Plant 'em now. **Cash Nurseries, Sebastopol.**

MISCELLANEOUS

WANTED DAIRY HERDS
to consume our alfalfa hay. Dairy opportunities unexcelled on the Newland Project. Never failing water supply, great variety of crops. 1920 alfalfa crop 100,000 tons. Ideal climate. Good dairy market. Leasing opportunities or feeding contracts available. Address: **NEWLAND PROJECT ALFALFA ASSOCIATION, Fallon, Nevada.**

Powerene Is Equal to Gasoline at 5¢ a gallon. Salesmen and agents wanted. Exclusive territory granted. Powerene is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed, power. An amount equal to 20 gallons of gasoline sent to any address in the United States, charge prepaid, for \$1.00. **W. Porter Barnes, Box 424A32, Santa Rosa, California.**

Have Cash Buyers for salable farms. Will deal with owners only. Give description and cash price. **Morris M. Perkins, Columbia, Mo.**

FERTILIZER

Gypsum and Lime—Price Right. Order early for prompt delivery. **H. B. Matthews, 1010 N. Madison Ave., Pasadena.**

RABBITS

Pedigreed Flemish Giants—Also Utility stock. No fancy prices. **MAUI BEECHING, 1578 W. 46th Street, Los Angeles, California.**

FOR LEASE

Farm For Lease—My ranch of 320 acres near Daguerre, California. 45 acres under cultivation, 5 acres in alfalfa, 1 acre in orchard, balance in grain and cotton. Abundance water, good farm buildings, implements, furniture, horses. Will lease for one to three years on very favorable terms to experienced farmer. Address S. Odell, 524 Van Nuys Bldg., Los Angeles.

For Rent—Sugar Beet, Barley and Alfalfa Land for rent. Have also for sale one 75 H. P. and two 60 H. P. Tractors Montana Land Company, Hynes, California.

LIVE STOCK

BUTTE CITY RANCH
Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. W. P. Dwyer and W. S. Guilford, Box C, Butte City, Glenn County, California.

One Registered Two Year Old Shropshire Ram—Prize winner at eastern state fairs. Also took first prize at L. A. livestock show. W. A. Barber, 507 Amethyst Street, Station T, Rose Hill, Los Angeles.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. J. J. Prendergast, Redlands.

SALESMEN WANTED

Men with Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guaranteed, working for an old reliable California company. Turn your spare time into cash. Write J. H. Yetter, 115 1/2 North Broadway, Los Angeles.

FOR EXCHANGE

For Exchange—80 acres improved land, 7 miles from Brawley. Owner wants to trade for going poultry ranch. Address: Hovley-Muncey Realty Co., 1123 South Los Angeles Street, Los Angeles, Calif.

MARKETING EXTRACTED HONEY
By G. W. Bercaw

Advertise strictly pure, edible honey, then supply this honey when demand comes. Put it up in packages or containers adapted to your trade. Put up only the best of good body and lightest color. It is not essential that it be "water white"—light orange tinge will sell just as readily and quickly. Use either glass or tin containers. Do not put comb honey in glass containers with extracted. Do not advertise "strained honey," and as far as you possibly can discourage your local grocer from doing so. Call it "extracted." Glass can be used for samples and local store trade; for one's own trade, however, glass cannot be successfully used in parcel post, express or freight shipments. Label the container to show exact weight of honey to comply with the national law, as well as the local laws of many states. "Safety first" is a good rule to follow.

I want to caution all to sell pure, fully ripened honey, not a lot of green stuff, semi-cured, unsealed, mixed with milky brood, such as the writer has seen produced in some of our bee yards of late. Right here is the strong argument in favor of using queen excluders to keep the queens out of the surplus honey production super.

TREATMENT OF BEE DISEASES

T. O. Andrews, inspector of apiaries of Riverside County, sends to Riverside beekeepers the following suggestions as to disease control:

Diagnosis of American Foul Brood
First stage noticeable when larva is full grown, just before cap is put on cell. Color light brown.

Second and most easily detected stage: Larva decaying, begins to dry down into a putrid mass; dark brown (coffee color), and of foul odor. Isropy when tried with a stick. (Roping out two to six inches, very thin line thread which does not easily break, like fresh rubber, as distinguished from ropiness of European foul brood, which is more like a piece of rotten rubber.) This ropiness of the dead larva is the characteristic test of American foul brood.

Treatment of American Foul Brood

It is useless to try to treat any of the bee diseases with drugs or chemicals. The time to treat bee diseases is during a honey flow. The earlier in the season disease is detected and treated the better it is for all concerned.

If colony is weak it is better to destroy brood, bees and honey by burning. The hives may be disinfected with fire or boiling lye water and used again.

If the colony is strong, shake the bees into a clean hive and compel

them to build combs. This comb building will cure the disease. If proper care is observed in handling the infected parts so as not to spread the disease. In extracting the honey and rendering the combs, great care should be taken not to spread the disease. Disinfect the hive in all its parts with fire or lye water.

Diagnosis of European Foul Brood

The disease affects the larva at the time when it is still curled up in the cell; that is, younger than the period at which American foul brood does its work. The characteristic test of European foul brood is a decided yellow or grayish color in the dead larva, which appears as a moist, collapsed mass; as if it had been melted.

Treatment of European Foul Brood

Remember that drugs and chemicals are useless in the treatment of bee diseases, and that there should be a honey flow in order to treat successfully. With European foul brood it is not necessary to destroy the bees or the brood combs, or any part of the hive; but it is necessary to requeen the colony, using good Italian stock.

If the colony is weak, unite with other diseased colonies until you have a reasonably strong colony. If there is but one diseased colony, and that is very weak, it would be better to destroy the bees, brood and combs rather than to take chances of spreading disease by treatment.

When a strong colony is infected with European foul brood, or enough weak colonies have been united to make a reasonably strong one, remove the queen and let the colony remain without a laying queen for at least ten days. If the queen is an ordinary black or hybrid, kill her; if she is of valuable Italian stock, make a nucleus for her and at the end of the ten days introduce her to her cleaned-up colony.

ORGANIC FERTILIZER

By A. Layman



WITH the mounting cost and decreasing supply of stable manure, also of bean and other straws, the fruit grower who finds it necessary to restore his soil will be glad to know that one source of fertility is indicating a material lowering of price.

Cottonseed meal, rich in nitrogen and containing a small quantity each of phosphorus and potassium, may now be had at nearly a third its price a few months ago. This is a California product, so it is right at our doors. As we have often said, the most satisfactory way of using such a fertilizer is to have a few dairy cows on the place, feed the cottonseed meal to the cows and later secure practically 80 or 85 per cent of its original fertility value and place on the soil of the orchard. But even without securing this double duty we believe that cottonseed meal is a very economical soil restorer when applied direct so long as it can be had at present day price.

There are literally thousands of tons of cottonseed meal in Southern California and a home use should be made of it; 35,000 tons of meal will be available from the Imperial Valley alone. There are now three mills busily engaged in the manufacture of oil and, of course, its waste, the cottonseed meal, and shipments are made of the prepared meal direct to the ranches, for there are other mills in Los Angeles with large output for nearby gardens and orchards, but unfortunately, in addition to our own home use a market is being secured for part of it in middle Europe, and shipments have been made from Los Angeles harbor. This is carrying a much needed soil fertility possibility away from our own orchards. It would make an ideal application to orchards carrying cover crops. The roots of the cover crop would aid in reducing the meal to nitrates and phosphates and secure fullest use of the fertility at the time of setting fruit in the spring.

The nitrogen in cottonseed meal is not so quickly available as in nitrate of soda or even sulphate of ammonia, but with right soil conditions it soon becomes available and has one advantage in that it carries a small portion of vegetable matter which will result in humus. One may apply, according to the needs of the orchard, from 500 to 1,000 pounds to the acre.

In summarizing some of the advantages of cottonseed meal Prof. Lipman in Bulletin 260 of our state agricultural experiment station says that the nitrifiability of nitrogen in cottonseed meal has been remarkably shown in a series of experiments conducted at the station. "But one soil in 29 showed total lack of power to nitrify cottonseed meal nitrogen." * * * "The most ready and most economical transformation of nitrogen into nitrate is accomplished by soil flora in our soils with the so-called low grade form of nitrogen fertilizers like cottonseed meal, steamed bone meal, goat manure, garbage tankage and sewage sludge."

Touching upon the value of cottonseed meal, or rather of the readily available nitrate carrier, a bulletin of the Texas Industrial Congress calls attention to its value for grassland regarding which the proverb says: "No grass, no cattle; no cattle, no manure; no manure, no crops." And the bulletin follows with this suggestion: "Remember that if the land contains a properly balanced fertilizing ration and has been thoroughly and constantly cultivated, so as to make this plant food available and thus keep the crop growing uninterruptedly from start to finish, it will greatly increase the grain yields and their quality, wonderfully increase the cotton yields, the length and strength of the staple (which has markedly deteriorated on account of poor seed, bad cultural methods and the poisonous habit of growing the same or a kindred crop on a given tract of land year after year), and add millions of dollars to the value of all these crops."

How Secured

Cottonseed meal is a by-product of the manufacture of cottonseed oil. The seed is taken to the mill from gins where it is stored in great warehouses, each with a capacity of about 3,000 tons. Stacks of seed in these warehouses are some 40 or 50 feet high and arranged over a trough in which is an endless carrier. The seed is fed into this carrier which takes it to the linters, operating very much as does the ordinary cotton gin, excepting as the saws are finer and set closer together. The lint still remaining on the seed is removed and baled, having outward appearance much similar to that of the ordinary baled cotton. It has, however, such short staple that its principal value is in the making of cotton batting for mattresses or, in time of war, gun cotton.

The clean seed next goes to the huller which removes the hull and delivers the kernel, or oil containing portion of the seed, to the large cooker where it makes continuous passage requiring perhaps an hour or an hour and a half. From the cooker it is drawn onto an oblong table where it is wrapped in "camel's hair cloth" and sent to the press. When this press is filled, hydraulic pressure extracts the oil, excepting that there is a loss of some 5 or 6 per cent which it is impossible to extract from the meal. From the press the slabs of meal are taken, the heavy cloth wrap is removed and the slab, of consistency of a plank, is run to the cutter where it is cut into chunks the size of a walnut or smaller. Later it goes to the crushers where it is reduced almost as fine as flour, sacked, sold to dairymen or sent to orchards or fields as fertilizer. The hulls are likewise disposed of as dairy feed.

There is nothing wasted of the "waste" products of the cotton fields of California.

SUGAR BEET GROWERS COSTS INCREASE 50 PER CENT

Sugar beet growers in Southern California delivering an average of ten tons of beets per acre, which test 13 per cent sugar, will receive nearly \$200 per acre for their crops, according to agricultural authorities at the state university. This is exclusive of possible bonuses under individual contracts.

Northern California growers will receive returns not quite so high, the amounts ranging from \$142 to \$236 per acre.

A beet crop averaging 12 tons in 1919 brought in twice the price of 1915, while operating costs during the same period increased about 50 per cent.



PENFIELD

The new starched collar model

SLIDEWELL COLLARS

Save Your Tie, Time and Temper
Hall, Hartwell & Co., Makers, Troy, N. Y.



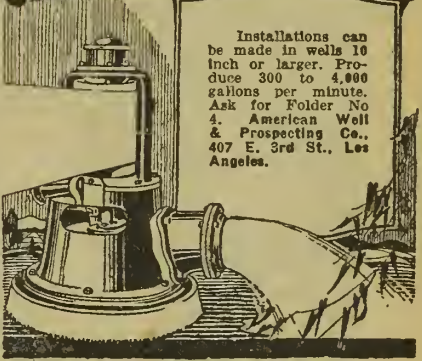
Quality First

Boston Garter

Quality Always Wins

In every walk of life, doing something better than the other fellow spells Success. Boston Garter's success is just a matter of being ahead in quality and workmanship, giving wearers the greatest satisfaction. GEORGE FROST CO., BOSTON, MAKERS OF Velvet Grip Hose Supporters For Women, Misses and Children

JOHNSTON TURBINE CENTRIFUGAL PUMPS



Installations can be made in wells 10 inch or larger. Produce 300 to 4,000 gallons per minute. Ask for Folder No 4. American Well & Prospecting Co., 407 E. 3rd St., Los Angeles.

Ranch Superintendent Available

The superintendent of one of the big ranches and breeding farms of California desires to make a change. Long experience in the supervision of general ranching, dairying and breeding and feeding of hogs under California conditions. A strictly high class man.

Reply to Box A 43, the Cultivator

MACHINERY
OF EVERY DESCRIPTION
Bought, Sold and Rented
BUTTRISS & McCLELLAN
205-7 N. Los Angeles St., Los Angeles

Advertising Market Eggs

POUTRYMEN in general have watched with great interest the advertising campaign inaugurated by the Poultry Producers of Southern California, Inc., in an endeavor to stimulate the consumption of eggs through the period of high prices, such as prevails every fall and winter.

The consuming public has always assumed heretofore that poultrymen must be coining money in the fall because the price of eggs is so high. As a result of this misinformation there has been a feeling of hostility on the part of the public, with the natural result that the consumption of eggs in many families has ceased over considerable periods. There should naturally be a decrease in consumption when eggs pass a certain price, but where there is a conscious

or an unconscious boycott destroying all consumption, then the egg producer is injured, because after the hens have begun to lay in December or January so few people are eating eggs that the market must reach a very low level before consumption is again stimulated to a point where it provides an outlet for large quantities of eggs.

Keeping this in mind, the organized poultrymen have tried out a scheme of explaining to the public the true situation and some of the difficulties which surround the production of eggs during the last three months of every year. Figures of cost have been printed in detail, and the attention of the consuming public has been called to the fact that the shortage is of comparatively brief duration, the idea being that the purchase of storage eggs would bridge over the period of a few weeks or until the hens began to lay in January.

This is the question every interested egg producer is asking, "How has it worked?" All distributors of eggs agree that the consumption of eggs in Los Angeles, price considered has been remarkable. When the break came in New York and other Eastern markets, there was little weakness on the Los Angeles market. It was only when the market in San Francisco broke as much as eight cents per dozen that it became unsafe for the Los Angeles market to occupy so high a level.

Strange conditions have prevailed

in the Middle West and farther East. The fall has been so mild for a season that in some instances poultry and cows were out on green pasture. The result has been a tremendous increase in the production of fresh eggs, which has resulted in greatly relieving the shortage which had prevailed.

This unexpected condition made it all the more necessary that a large portion of the eggs arriving in Los Angeles should find a local market because the outlet to the East was in some measure checked by the egg production mentioned above. At this writing the Los Angeles market is higher than the San Francisco market by several cents per dozen; there is a good feeling between the consumer and the producer of eggs; apparently eggs have not been banished from so many tables in Los Angeles this fall; and while it would be inaccurate to say that this favorable condition has been brought about solely by advertising, it would be equally unfair to say that the advertising of the Poultry Producers has not helped in developing the fortunate circumstances which surround the marketing of eggs in Southern California.

The effort of the organized poultrymen to reach a better understanding with the consuming public seems to have been a splendid success.

CALIFORNIA FARM BUREAU EGG LAYING CONTEST

(Continued from Page 627)

So successful was the California Farm Bureau Egg Laying Contest and so strong was the demand for a permanent contest in California that the Santa Cruz County farm bureau, in July, 1920, asked the university to take over the management. The idea

met with favor by the authorities, but the question of funds came up. The university would not be able to finance such a project at the present time. The Santa Cruz chamber of commerce immediately solved the difficulty by providing \$10,000 to purchase land and erect buildings and suitable equipment. As run the contest should be practically self supporting, but to cover any possible deficit 30 progressive poultrymen of Santa Cruz stated their willingness to stand good. The spirit of cooperation shown by the businessmen, poultrymen, builders and plumbers was ideal—almost more than could be asked—and at the present writing the plant is nearing completion and will be ready for the start of the California Farm Bureau Egg Laying Contest on November 1, 1920. The extension division of the university and the poultry division will run the contest as a joint project.

Value to State

With its ideal climatic conditions California should prove to be a leader in the poultry industry in the United States. The establishing of a permanent state egg laying contest at Santa Cruz is the beginning of the good work.

Other states have demonstrated their ability to produce good poultry under more adverse conditions than we have to meet. This ability has been made known through their egg laying contests. What poultryman has not heard of the Storrs contest or the Missouri contest records?

We believe that California has the stock, and the egg laying contest will be the means of showing the world that our belief is correct.

The contest will serve as a station at which new facts will be derived. With the birds under the supervision of a trained man data can be obtained that will work toward the betterment of the industry of the state. To quote as an example, various methods are used in culling—in general these methods may be effective, but they are only the beginnings of the road to "better stock." These general points can be studied at the contest station and actual checks made as to their comparative values. The trapnest will tell the true story. We feel that many new and valuable ideas regarding poultry will be obtained. Every poultryman will get the benefit of these findings and the industry as a whole will profit.

Value to Individual Poultrymen

Coming down to the value of the contest to the individual poultrymen: Most poultrymen will concede that trapnesting is the way to find out what the birds are doing. Often, especially to one starting in business, it is a question as to what extent he can trapnest, if at all. His time is taken with the countless details that come up. He wants accurate records on his birds, or at least on a few. So he turns to the egg laying contest where for a nominal fee his birds are trap-nested and each month he gets a detailed report of his entry. At the contest, also, his birds enter into competition with other birds and a comparison with these is of value to the owner. Even if his birds are inferior it is an advantage to him to know. At the end of a year his birds are returned and if out of his 12 he has six or even four outstanding individuals, with these as a basis he can begin breeding and building up his flock. Naturally the spirit of competition enters and what is a greater incentive in any industry than this feature? It is the natural desire of every progressive person to do better than the other fellow.

The advertising value to the individual poultryman in a contest must not be overlooked. Every week high records of pens and of individuals are published in all the leading agricultural publications, and often the records find their way into the large dailies of the larger cities. To summarize, the poultrymen can well afford to enter them for three reasons: first, to get a trapnest record on every bird for a year, the truth of which is above question; second, to compare his stock with that of other breeders; third, to get the value of publicity and advertising.

The Plant

The house, which is of the full monitor type, is ideally located near the street car line leading to the city park. It is at the intersection of three main

EGGS—EGGS—EGGS

Increase Your Egg Production
100% By Feeding EmRoCa
Egg Builder

Mr. Geo. Thompson, Alameda, Calif., writes: Have never had my hens lay coming through a molt until I fed EmRoCa Egg Builder; some of my hens were naked of feathers and still laying. Was also of great value to my pullets in bringing them into laying. Would not be without EmRoCa EGG BUILDER.

A \$1.00 Trial Package, Postpaid, for \$5.00

EmRoCa LABORATORIES
Hearst Building San Francisco, Cal.



THE GREAT OLYMPIC FEED MILL PORTLAND, ORE.

OLYMPIC

CRATE FATTENER

With Dried Buttermilk

Rapidly Fattens Fowls

MEET the holiday demand for poultry by feeding OLYMPIC Crate Fattener containing *Dried Buttermilk*. You can increase the weight of your chickens from 25% to 50% in ten days. OLYMPIC Crate Fattener with *Dried Buttermilk* makes the meat whiter, more tender and sweeter flavored, breaking down the tough sinews and muscle tissue. You can command better prices per pound and bigger profits per bird.

A Test of Taste

An OLYMPIC crate-fattened chicken dinner, served simultaneously at three great Portland hotels, brought the following expressions of satisfaction:

"OLYMPIC crate fattened chickens are more tender and better flavored."—Hotel Portland.

"Every piece of the poultry measured up to as high a standard as the hotel could wish."—Hotel Benson.

"The dinner was served 300 guests and complimented by all."—Multnomah Hotel.

A Test of Weight

The following results were obtained by the Hazelwood Company, of Portland, a concern shipping 10,000 birds a week:

92 White Leghorns fed 100 lbs. OLYMPIC Crate Fattener with *Dried Buttermilk*, gained a total of 40% lbs.

92 White Leghorns fed 181 lbs. mixture of corn, oats and barley feed with semi-solid buttermilk gained but 32.3 lbs. in the same time, or on a 100 lb. basis, but 17.7 lbs.

The Portland Flouring Mills Co.,
Merchants Exchange Building
San Francisco, California.
C. B. Sharp, Agent.

Dried Buttermilk

The OLYMPIC Dried Buttermilk Process simply removes the 90 to 92 per cent of water, leaving the milk elements in highly concentrated form, pure and fresh for shipment, storage and feeding.

This is mixed in proper proportions with the other ingredients in OLYMPIC Dried Buttermilk Feeds.

OLYMPIC CRATE FATTENER

WITH DRIED BUTTERMILK

GUARANTEED ANALYSIS

Protein 16% Crude Fiber 8% Ash 8%

Carbohydrates 80%

Made from Dried Buttermilk, Oat Flour, Barley Flour, Red Alfalfa Flour Middlings, Alfalfa Meal and Corn Feed.

The Portland Flouring Mills Co., Portland, Oregon, U. S. A.



4,200 Eggs From 48 Hens

Simply write me and I will send you a big triple size box of my famous Buttermilk Compound Tablets by return mail, postpaid. I want you to know that you can double and treble your poultry profits by doubling or trebling your egg yield—perhaps get five to seven times as many eggs as did many of my friends last winter by using these wonderful tablets. Fed in drinking water or feed. Because I want these tablets known in every township in America I say: Try them at my risk. If you like them, tell your friends. If not, you are not out a cent.

Over 10,000 People Wrote Me Last Year

Here are a few samples of the kind of letters I get from all parts of the United States.

4,200 Eggs.

I used two boxes of your tablets. Before using them got only 6 eggs a day. Within two weeks was getting 12 to 15 eggs a day. In seven months I got about 350 dozen (4,200) eggs from my 48 hens. I did not have any Roup. I give your tablets the praise. MRS. ARTHUR TUCKER, Wilkinson, Ind.

75 Eggs Instead of None.

I found the tablets were fine to start hens to laying. Before using the tablets I wasn't getting any eggs. Within 10 days after using tablets increase started. I was finally getting 75 eggs a day and fed the tablets until spring. MRS. R. H. TULTZ, Scranton, Kans.

Makes 'Em Lay in Coldest Weather.

Last winter I fed two boxes of your tablets mixed with feed. Before using tablets got only 12 eggs a day—afterward 30 to 36 eggs a day. This was within three weeks. After feeding the tablets six weeks got 50 and 60 eggs a day and in the coldest weather in winter. MRS. ELMER HOTTMAN, Ridgeway, Wis.

Best Tablets Made.

The Buttermilk Compound Tablets I think are better than the common tablets. I got more eggs within two weeks after using them. I have some other tablets but the "Buttermilk" are the best. I fed three boxes last winter. My flock did not have the Roup. Will send for more tablets. MRS. WALTER ELLIS, Gypsum, Kans.

FREE

Because I want one million new users of these wonderful tablets I am willing to send you a big triple size box if you will just write me. Your name and address is all I need. Use a postal card if you wish—I'll send the tablets by return mail, post paid. You use the tablets 30 days then report results to me. If you are not satisfied in every way—if you are not more than pleased—the tablets are to cost you nothing. But if you do find that you get many, many more eggs—probably three to five and even seven times as many—and your flock is healthier than ever before—full of pep and strutting around with healthy red combs—the tablets cost you only \$1.00. No matter what you have tried before, I want you to remember that my secret formula is absolutely different from anything else—that it has been known to succeed where others failed. Not only that—you must remember that I send you a big triple size box—nearly three times as big as the ordinary box of tablets. At any rate, the risk is all mine. You can't afford to pass up this Special Introductory offer a single minute—it may never be made again.

Send No Money — Just Write Me, That's All.

All I need is your name and address—just put it on a postal card or use the coupon below—I'll understand and send you the tablets post paid by return mail.

R. C. COMBS, Gen. Mgr., Milk Products Co.
660 Creamery Bldg., Kansas City, Mo.

As per your offer send me your big triple size box of Combs' Buttermilk Compound Tablets. I understand I may use the tablets in a 30 days' test, and if satisfied they cost me \$1.00, otherwise they are to cost me nothing.

Name

Address

B. F. D. P. O. Box

streets. The grounds comprise three acres and have a gentle slope which insures good drainage. The house is 332 feet long. A six foot aisle through the center of the house gives access to the pens on either side. The pens are 10 by 16 feet and will hold 36 birds. The birds will be run under flock conditions; this is a feature of the contest.

Each entrant sends 12 pullets, the best ten of which at any time determine his total record. This also is a feature of the California Farm Bureau Egg Laying Contest. Usually in contests two hens are set aside at the beginning as alternates and their records never count unless one of the other birds dies.

The daily records are kept on sheets which at the end of each week are summarized and weekly reports given out. From these sheets a report is made and sent to each owner at the end of each month.

Numerous other details would prolong unnecessarily an article of this kind. Suffice it to say that California now has an official egg laying contest which we hope will equal any in existence in the world.

Poultry Queries

Conducted by J. A. Koethen

Sick' Chicks

My baby chicks have watery eyes and white spots on the throat and the whole mouth seems sore. I have lost several and the whole flock seems affected. I feed warm chick mash in the morning and ground corn during the day.—Subscriber, Santa Maria.

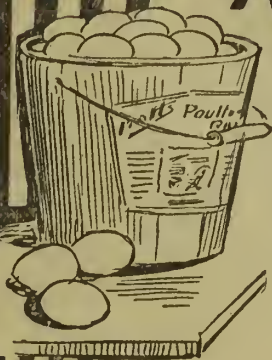
The chicks may be taking cold but I think that warm mash they get every morning is the main cause of the trouble. If moist mash is fed to chicks and a little is left to lie in the sun for a while it becomes first sour, then moldy, and if the chicks eat it will almost certainly cause aspergillosis, which means just the growth of mold spores in the throat and lungs as well as in the food. Your chicks should have a dry mash mixture before them all day. You can buy excellent chick mashes already prepared but the one you are using may be all right if only it were fed dry instead of wet. As you do not say what the mash is composed of, I cannot help you there. Then in addition to dry mash feed some kind of chick grain in scratching litter or, if the chicks have range, in feeders. Just what you feed depends on the age of the chicks. Chicks a month old can eat cracked corn and Gyp corn and will usually eat wheat if it has been mixed with the chick feed while they are little. If you keep a good dry mash preparation before them all the time and chick feed or grain in feeders where they can find it part of the time, keep them warm at night, sheltered from the wind during the day and let them run as far and as much as they wish, your chicks will not be sick. The only cure for those that are affected lies in immediate removal of the cause.

Price for Buff Leghorn Males

Can you tell me what price I should ask for my Buff Leghorn males for breeding? They are about 200 egg type, some more and a few less. Part of them have brownish or very light tail feathers, some have five point combs, some four or six point. One of my pullets took champion pullet at the local fair, and the cock took blue ribbon.—Subscriber, Fresno.

This letter is too long to publish in full and has been answered by mail. It is enough to say here, perhaps, that in selling roosters for breeding only ribbons or reputation or egg records count. A male that has won a ribbon or a male from winning stock of known reputation can command a price as a fancy breeder, and a male who is known to be the son of a hen with a high egg record can command a good price as utility breeder. Roosters outside of this list are worth just the market poultry price in most cases. It is wasted time to try to breed utility and fancy at the same time. Breed for eggs or for feathers, but not for both. A few experts claim to have been successful, but they are very few and far between.

You Can Have Eggs All Winter-If



you give your flock a little help. It isn't a matter of chance—you'll get eggs if you work for them. And if your birds lay heavily this winter you'll take in a lot of egg-money because prices will be high. The extra eggs you can get will pay for many things you want and need.

Give your layers a chance to do their best work. Feed a good ration and include

Pratts

Poultry Regulator

the original poultry tonic and conditioner. It makes hens lay because it puts and keeps them in condition to lay—healthy and vigorous. Its natural tonics, appetizers, digestives and laxatives strengthen and regulate the internal organs—make hens healthy—then they lay. Nearly fifty years of successful use by the world's leading poultrymen proves it. And our money-back guarantee is your protection. Sold in packages, pails and sacks up to 100 lbs.

Pratts Roup Remedy

is another big aid to winter layers. Put it in the drinking water occasionally, especially during spells of bad weather. It heads off dangerous colds and deadly roup, and aids in overcoming these troubles if they appear.

"Your Money Back If YOU Are Not Satisfied"

One of the 60,000 Pratt dealers is near you.
Talk this over with him.

PRATT FOOD CO.

Philadelphia
Chicago
Toronto

Makers of Pratt's Animal Regulator, Pratt's Cough Tonic, Pratt's Hog Tonic, Pratt's Dip and Disinfectant, Pratt's Poultry and Stock Remedies PR25

pratts

Healthy Hens

is the answer to heavy egg production, and in LACTEIN Condensed BUTTERMILK, the hens not only receive the tonic which keeps them in the highest state of health, but a REAL FOOD which supplies the elements of egg making material in a scientifically processed, concentrated form. LACTEIN Condensed BUTTERMILK supplies all elements most economically.



Builds Feathers—Revives After Molt

Molting time is feather-renewing and body reviving time for the hen—and as much food or more is required for this work as that of producing eggs. LACTEIN enters into the aid of nature

with a stimulation and vigor that has built its recognition as supplying tonic and body and feather-building elements better and more economical than any other food or compound.

LACTEIN CO.

Main Office and
Factory at
MODESTO, CAL.



Your LACTEIN investment will prove profitable for all year feeding—if you are not supplying your poultry with it, make the start now—your poultry supply dealer supplies LACTEIN.

NOTICE: ALL POULTRY BREEDERS AND DEALERS No More Spraying, No More Lice, No More Mites

One pair of Lice on that bird, means one hundred thousand descendants in less than two months.

The Federal Bureau of Entomology states that 99 per cent of the flocks of the country, are infested with both Mites and Lice.

The chicken infested with Mites and Lice, is from one to two pounds under normal weight.

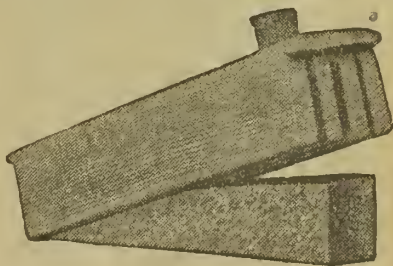
Mites and Lice cut egg production from 25 to 50 per cent. They are the greatest enemy to the chicken industry.

The Wegner Medicated Poultry Roost will rid your flock from Mites and Lice.

It is the greatest proposition ever offered to the poultry raisers of this country.

We want every poultry raiser in the city of Los Angeles and vicinity to step into Germain's Retail Store, N.E. corner 6th and Main, and inquire about the Wegner Medicated Poultry Roosts. Will have a man there to demonstrate, on Monday, Tuesday and Wednesday, Nov. 15th, 16th, and 17th.

E. W. BADGER SALES CO., California Distributors, Long Beach, Cal.



Los Angeles Markets

Los Angeles, November 10, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 59 cents.

Dairy Exchange price last week on extras:

Nov. 3 4 5 6 8 9

'20 ... 57 57 57 57 58 59

CHEESE

Brokers' prices:

California flats, 28@30.

EGGS

Fresh extras, cases included: Produce Exchange closing price, 86 per dozen; case count Produce Exchange closing price 84 per dozen; pullets, Produce Exchange closing price 74 per dozen; power pullets, 58.

Dairy Exchange prices last week on extras:

Nov. 3 4 5 6 8 9

'20 ... 79 81 84 84 85 86

POULTRY

Price to producers: Hens, lt., 34; heavy, 34@36; colored, 37; broilers, 40@45; roasters, 39; old roosters, 14; fryers, 40; ducks, old, 23; ducklings, Pekin, 3½ up, 25; others, 23; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47.

Belgian hares, live, 16@21; old, 9.

LIVESTOCK

Los Angeles, Nov. 9 — Weighed and delivered off cars without foot or water: Hogs (hard-grain): 125 to 175 lbs. 14.00; 175 to 225 lbs., 15.00.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, November 9, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market unsettled; Stocktons: Burbanks, best, 2.25@2.50 sacked; poorer low as 2.00. Idaho Russets 2.25@2.50 mostly. Sweet mostly 90@1.10 per lug.

Onions: Supplies heavy, market dull Stockton: Whites 1.75@2.00; Browns mostly 1.35@1.50 per 100 lbs. sacked; Yellows: 1.25@1.35 cwt.

Garlic, lb., 12@14.

VEGETABLES

These are the actual prices obtained November 9 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, 6@8; Limas, 4@6.

Beets: Doz., 45@55; sk., 1.75@2.00.

Cabbage: Supplies liberal, market steady, movement slow, wide range in quality. Best mostly 2@2½ per lb.; per field crate, best, 1.75@2.00.

Carrots: Doz., 30@40; sack, 90@1.20.

Cauliflower: Supply liberal, field cr., 90@1.10 according to quality.

Celery: Doz. bunches, 90@1.10; cr., 2.50@3.00.

Cucumber: Market firm; local, best, lug, 1.25@1.75, few high as 2.00.

Egg Plant: Lb., 4@6.

Lettuce: Field crs., 1.00@1.50.

Peas: Local, 10@14.

Peppers: Bells and Chilis, lb., 3@5.

Rhubarb: Crimson Winter, best bx., 80@1.00.

Squash: Local summer, lug, 75@1.10; Hubbard, lb., 1½@2.

Tomatoes: Local lugs, best, mostly 40@60 lug.

Turnips: Per doz., 40@50; sk., 1.85@2.00.

DECIDUOUS FRUITS

These are the actual prices obtained November 9 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal; market firm. California bushel boxes Bellefleurs, 4 tiers, 1.75@1.85; 4½ tier, 1.50@1.60; Jonathans, fancy, 3.00@3.25; Delicious fancy, 3.25@3.75. Idahos and Utahs, loose Jonathans large, 6@7, small low as 5 per lb.

Bananas: Lb., 10½@11.

Cranberries: Black, 15.00@15.50; Late Howe, 17.50@18.00.

Figs: Box, 1.25@1.50; few high as 2.00.

Grapes: Supplies liberal, market strong.

Muscats, 9@13; Tokays, 6@8; Cornichons, 6@8; Malagas, 9@13.

Pears: Bartletts, best, lb., local mostly 7@9; Northern mostly, 10@12.

Persimmons: Lb., 10@17.

Pomegranates: Price to grower f. o. b. Los Angeles, 5@8 according to size and color. Retail price 8@12.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.75@3.00; special packed brands, 3.50@4.00.

Lemons: Market dull, wide range in prices: Local stock: Packed, box, 2.75@3.25; loose, 1.00@1.50; lug, mostly 50@60.

Oranges: Supplies light, market firm. 150's and 176's, 7.25@8.00. Local packed, second grade, mostly 4.25@8.00. Navel, new crop, local pack, small sizes, 6.00.

HONEY

Demand light, movement limited, market unsettled, little change in prices. Carloads f. o. b. usual terms: regular 5-gallon cans white orange and white sage 17@18; light amber alfalfa 13@14; light amber sage 13@14. Beeswax, 40@42. In smaller packages white orange 20; white sage 19@20; light amber alfalfa, 16@17½; light amber sage, 17½@18½.

NUTS

California Walnut Growers' Association announces prices on 1920 walnuts: No. 1, soft shells, 2½; No. 2, 1½; Budder, 25½; standard budded, 22½ per lb.

GRAIN AND FEEDS

Grain Exch. prices bid November 8:

Barley: 2.11½.

Milo: Carlots, 2.50; Eastern, blk., 2.20

@2.25.

Bran: Kansas, 43.

Wheat: Mixed, Utah-Idaho, 46.25.

HAY

Alfalfa Growers of California, report under date of November 10:

Continued demand for current consumption and light offerings led to a further stiffening of prices during the week. Present prices are not high and a further reasonable advance during winter seems justified by the strength of the situation and the cost of carrying, but it would be a very great mistake to allow prices to go too high. A period of low prices would usually result in a decreased alfalfa acreage; this would be followed by a season of smaller supplies and high prices, especially during winter. The effect of these high prices would be reduction of dairy herds, and the next result would be very low prices again for alfalfa, the acreage of which had in the meantime been increased again by the short period of good prices. . . and so on in the same vicious circle by which most of the alfalfa growers were kept chronically hard up and in debt, even during the years when all other kinds of farming paid well and created prosperity for the farmers.

This year has been the first in which the association has been strong enough to be a factor in the distribution, and as a result growers received, probably for the first time in the alfalfa history of California, fairly adequate prices all through their principal selling season. In other words, the association succeeded in stabilizing the market. It is to the best interest of the alfalfa growers to stimulate as much as possible the dairy industry, and vice versa, making possible for both industries a continued steady growth on basis of assured fair returns for both. By both industries keeping step with each other, there will be no danger of overproduction for many years to come, if ever, even if the growth of these industries should in time overtake the growth of the population of the state, as there is then a wide field open for shipment of dairy products to other parts. In the meantime, however, and especially at the present stage, the association needs the full support of all the growers in a larger measure than ever before, if you want it to continue to do as much for them as it has done this year, or to put it plainly, if you do not want to go broke again in raising alfalfa. As matters stand today the alfalfa farmer in California is about the only one the price of whose product is not demoralized and below cost of production. Greater efforts on our part are therefore necessary to protect ourselves, as nobody else will protect us, but we can do it all right by increasing our membership and by establishing a comparatively modest fixed working capital which is all we need to put ourselves in a sufficiently strong and independent position. Both objects can be easily obtained without any sacrifice by our members if they will all do their part in both directions.

All hay received was readily absorbed the past week. We make note here of hay received on the tracks in Los Angeles, this does not include direct shipment from ranch to consumer.

There were 750 tons received on the tracks in Los Angeles the week ending November 6, with 80 tons left over as against 528 tons the week before.

Rabbit Alfalfa41.00
No. 1 Dairy Alfalfa32.00
Standard Dairy29.00
Stock Hay25.00
Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats22.00@26.00

Barley16.00@22.00

Alfalfa22.00@28.00

Barley straw6.00@10.00

San Francisco Markets

San Francisco, Nov. 9, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations:

Extras56½

Dairy Exchange prices extras this week

and year ago:

Nov. 2 3 4 5 6 8

'20 ... 55 55½ 55 .. 56½

'19 57 57 .. 67½

CHEESE

Dairy Exchange quotations:

Jack, full cream22@28

Jack, half skimmed17@20

Ore. Y. A.35

Cal. Flats31½

Oregon Trips30

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras86½

Extra Pullets74½

Undersized67

Dairy Exchange prices, extras this week

and year ago:

Nov. 2 3 4 5 6 8

'20 ... 84½ 85 86 .. 86½

'19 89 90 .. 87

POULTRY

The turkey market is showing weakness due to arrival of turkeys from Australia and promise of more to come.

Wholesale prices are:

Broilers, 15 pounds per dozen, 53@54.

Colored fryers, 2 to 3 lbs., 34@36.

Colored young roosters (smooth), 3 to 4 lbs., 38, staggy, 25@27.

Old roosters (colored), 20@23; market

firm.

Leghorns, young, 15 lbs. to 24 lbs. per dozen, 45@48.

Leghorn hens, 3 lbs., 36@38; under, 25; Eastern, 31@35.

Large colored hens, 38@40.

Young Pekin ducks, 25; old ducks, 25

@25; young geese, 25; market easy.

Live Belgian hare, 20@22; dressed 20

@30; market firm.

Dressed Turkeys—Young, large, 50@55;

50; old, 47@52.

Squabs—Large, 75-80 per lb., market

firm.

Pigeons—3.00@4.00 per dozen; market

firm.

LIVESTOCK

Western Meat Company prices are

Cattle: Grass steers, No. 1, weighing 1000

to 1200 lbs., 9@9½; do, 1200 to 1400 lbs.,

7½@8½; do, second quality, 6@6½; thin,

5½@6.

Cows and heifers: No. 1, 7½@8; second

quality, 6@7; common to thin, 3@4.

Calves: Light weight, 9½@10; medium,

8@9; heavy, 8@8½.

Lambs: Milk, 9½@10½; yearlings, 7½

@8.

Sheep: Wethers, 7½@8; ewes, 4½@5.

Hogs: Weighing 100 to 150 lbs., 13, 150

to 225 lbs., 14; 225 to 300 lbs., 13½; 300

to 400 lbs., 12½.

POTATOES AND ONIONS

Wholesale prices:

River, 1.70@2.50 for No. 1, 1.25@1.50

for No. 2; do, Oregon Burbanks, 2.25@

2.65; Salinas, 3.25@3.50; Idaho Gems, 2.65;

sweet potatoes, 2½@3 per lb.

Onions: Yellow, 70@90 per cental;

Australian brown, 75@1.10; do, white 1.00

@1.50.

Garlic: New, 6@8.

VEGETABLES

Wholesale selling price:

Beans: Lb., garden, 10@12; Italian, 8

@10; Lima, 12@13.

Beets: Sk., 1.50@1.75.

Brussel Sprouts: 5@7 lb.

Carrots: 1.50@1.75 sk.

Cauliflower: Doz., 1.00

Cucumbers: Lb., 1@1½.

Cabbage: Lb.

Celery: Cr., 2.00@4.00; doz., 80.

Corn: Sk., 2.00@2.50; fr., 3.00@3.50.

Egg Plant: Stockton, lug, 50@75; Liv

Ingston, 1.00@1.35.

Lettuce: Doz., 35@40.

Onions: Green, per bx., 1.75@2.00.

Peas: Lb., 13@15.

Peppers: Lug bx., Stockton Bells, 75

90; Bay, 1.00@1.25; Chili, 75@90.

Spinach: Lb., 6.

Squash, Summer: Lug, 75@1.25; Cream

75@1.00; Hubbard, 1.25@1.50, sk.; Mar

rowfat, sk., 1.00@1.25.

Tomatoes: Bx., for canning 25@50; fr.,

1.50@1.75.

Turnips: Sk., 1.50@1.75.

FRESH FRUITS

Apples: King, David, 1.75@2.50, Bell-

flowers, 1.35@1.85; choice, 1.25@1.40;

grade C, 1.15@1.25; Rhode Island Green-

1.50@1.65; Jonathans, lug, 1.50@2.25; New-

@2.25; Spitzburg, 2.00@2.75.

Spitzburg, 2.00@2.75.

Avocado: Doz., 4.50@5.00; Blacks, doz.,

small, 1.00.

Bananas: Lb., 10½@11; red, 12.

Berries: Strawberries, 1.25@1.65 per

drawer; raspberries, 75@1.00 per drawer;

blackberries, chest, 12.00@17.00; Huckle-

berries, lb., 22@25 in boxes; 17@20 in

bulk.

Cranberries: Per bbl., 13.00@13.50;

Oregon, 4.50@5.00 box.

Figs: Double, 1.50@2.00; single, 75@

1.00; White, 1.50@2.00.

Grapes: Malaga, 2.00@2.50; Tokay, 1.75

@2.25; Muscat, 2.25@2.50; Cornichon, 2.50

@3.00 per lug.

Olives: Lb., 10@12½.

Peaches: Per small box, 1.50@2.00; L

A. lugs, 2.00@2.25; Alameda, 2.50@3.25

Pears: Winter Nellis, 1.75@2.00; Kelf-

fer, 3.00@3.25.

Persimmons: Bx., 1.50@2.00.

Pineapples: Dozen, 4.00@5.00.

Plums and Prunes: 2.00@2.25 per crate

or box; do, fancy varieties, 2.25@2.50

small lugs, 2.75@3.00.

Pomegranates: 1.50@1.75 per peach box;

2.00@2.50 per half orange box.

Quinces: Bx., 1.50@2.00.

CITRUS

Valencia Oranges: 7.00@9.00; Lemons,

2.50@4.50; Grapefruit, 3.00@4.50, Ariz.,

4.50@5.00.

DRIED FRUITS

Fresno, Nov. 8.—Prices for the re-

mainder of the raisin crop were officially

announced today by the California As-

sociated Raisin Company and show an

all round increase of half a cent on Mus-

cats, Thompsons and Sultanas over prices

for the first allotment. Bleached goods,

however, remain unchanged.

Independent packers who, under the

compromise reached in the suit brought

against the association by Attorney Gen-

eral Palmer, are to receive 20,000 tons of

this season's crop will, it is understood,

charge the same rate as the association.

The price list is as follows:

Prices for Crop

Muscats: Package seeded, Sun Maid,

25 pound boxes, 20½ cents a pound.

Lgose, 25 pound boxes, one crown, re-

cleaned and floated, 20½ cents a pound;

two crown, re-cleaned and floated, 23½

cents a pound; three crown, re-cleaned and

floated, 24 cents a pound.

Layers, three crown flat pack, 20 pound

November 5

New York: 7 Val., 1 mixed, 7 lem. Val. 8.85-12.00, lem. 2.70-3.65.
Boston: 2 Val., 1 lem. Val. 4.55-9.45, lem. 3.05-3.55.
Philadelphia: 1 Val., 2 lem. Val. 8.50, lem. 2.80-3.20.
Cleveland: 1 lem. 3.15-3.05.
Cincinnati: 2 lem. 1.80-3.50.
St. Louis: 1 lem. 2.35-3.10.
Baltimore: 1 Val., 1 lem. Val. 6.10-7.50, lem. 1.45-2.55.

November 8

Boston: 5 Val., 5 lem. Val. 6.80-9.25, lem. 2.60-5.10.
Cleveland: 2 Val., 2 lem. Val. 10.10-10.90, lem. 2.80-3.10.
Pittsburg: 4 Val., 2 lem. Val. 5.10-9.40, lem. 1.30-2.60.
Philadelphia: 2 Val., 2 lem. Val. 5.20-8.95, lem. 2.90-3.25.
New York: 16 Val., 13 lem. Val. 7.35-11.25, lem. 1.70-3.20.

November 9

New York: 10 Val., 10 lem. Val. 6.25-10.95, lem. 70-2.85.
Boston: 4 Val., 5 lem. Val. 5.45-8.75, lem. 2.45-2.95, pomegranates 2.20-2.50.
Philadelphia: 2 Val., 2 lem. Val. 3.15-8.35, lem. 2.00-3.10.
St. Louis: 1 Val., 1 lem. Val. 6.25, lem. 2.65-3.45.

COST OF RICE PRODUCTION



HE Extension Service Farm News, organ of the agricultural college of Texas, in discussing the present discouraging rice situation holds that today's quotations do not justify rice growing under Texas or Louisiana conditions. The Texas paper rather overlooks California as a rice producer. However, the discussion has a lively interest to many California growers.

To quote from the News:

There may be times when the doctors recommend men to work for their health, but it is scarcely possible that the farmers of the country are going to accept this verdict from the consuming public.

A merchant will quit business when he sees that he is losing money and seek some other occupation, and the farmers are doing the same as fast as they are made to realize the cost of production as contrasted with the market price of the commodities produced on the farm. This does not mean that the farmers will strike, but they are getting tired of working for their health. Many have already left the farm seeking profitable occupations and others will leave as fast as they can make the change or at least stop producing a surplus at a loss.

Farmers are commencing to study the cost of production and are finding out whether or not a crop is profitable, and if it does not yield a profit they will produce something which will yield a profit or cease production except for home consumption.

This seems to be about the status of the feeling of the rice growers of South Texas. In fact, in 1919 Texas planted 218,000 acres to rice and produced approximately 7,000,000 bushels of rice, valued at \$19,000,000 on a basis of \$2.80 a bushel, which are the figures given in the Year Book for 1919, published by the United States department of agriculture. Louisiana and Texas together last year produced 26,710,000 bushels of rice, which is about two-thirds of the production of the United States and was valued at \$73,014,000. This sum of money means much to the business interests and consumers in congested centers in Texas and Louisiana. Everyone who touches a dollar of it seems to make a profit except the producer. The average price of rice in 1917 was \$2 a bushel, while the average price in 1917 for day labor with board was \$1.56 as compared to \$2.45 in 1919, and without board, \$2.02 as compared with \$3.12 for the same years. The increase in wages was over 70 per cent from 1917 to 1919, while the increase in price did not reach this percentage by any means, yet the retail price at the stores was 100 per cent over the price at the mill, which is entirely too great a spread and has resulted in the consumption of rice for 1920 falling away below normal.

Knowing that it had cost as much or more to produce rice this year as it did in 1919, the Rice Growers Association felt the rice should bring at least as much as it did in 1919 and fixed \$8 a bag (three bushels) as the opening price, but the crop has not moved at that price.

Realizing that the rice growers must have a profit on their production if they were to be advised to continue growing rice, Geo. A. Smith, district agent extension service, decided to make investigations to determine the

actual cost of producing a bag of rice, so he gathered the data from a number of farmers in Jefferson County on the cost of production, with the following result:

Land preparation, \$6.75; seed and fertilizer, \$6.60; sowing and firming bed, \$1.75; pushing levees, \$3; water (regular charge), \$8; threshing and hauling, \$7.25; cutting, binding and shocking, \$6; sacks and twine, \$5.35; storage (insurance included), \$2.28; cost of work stock, \$10; depreciation, \$4.50; taxes, etc., \$2.50. Total cost, \$63.23, making an average crop of 7½ bags to the acre cost \$8.43 a bag.

Meantime J. C. Elsentraut, county agent of Jefferson County, was compiling figures along the same line from another set of data gathered from other rice farmers, as follows: Plowing, \$2.85; disking and harrowing, \$3.55; seed and fertilizer, \$6.50; planting and rolling, \$1.85; building levees, \$3; water cost, \$8; threshing and hauling to warehouse, \$7; storage, insurance and loading on cars, \$2.16; maintaining work stock, \$9; annual depreciation machinery, \$4.32; taxes and overhead, \$2; total, \$61.18, making an average crop of 7½ bags to an acre cost \$8.15 a bag.

At the same time C. Dornbos made a census of 874 acres divided into four groups of farms in a radius of 20 miles and found an average cost of \$61.15, making an average crop of 7½ bags to the acre cost \$8.23 a bag.

The cost in 1917 was \$37.53, making an average crop of 7½ bags to an acre cost \$5.01 in 1917, which was a profit of 99 cents a bag, or 33 cents a bushel at the price of \$6 a bag or \$2 a bushel.

With the present cost of production at over \$8 a bag to sell at even \$8 a bag would mean a loss to the rice growers, while a less price would cause many to go into other lines of production. Should this occur, what will become of the machinery in the rice mills and where will the employees and middlemen get their profits from handling rice? What will become of the 100 per cent profit of the middlemen?

Shall these rice farmers work for their health in the future and donate their savings to the rice production until they themselves become day laborers, or shall they seek more profitable pursuits? This is the question confronting not only the rice farmer but thousands of other farmers throughout the country.

When all farmers move to town or commence raising only sufficient produce for their own needs, what will become of the profits of the middlemen and the food for congested centers?

Farmers have commenced to investigate the cost of production. What will the answer be?

SOME CUCUMBER DISEASES MAKE ROTATION ADVISABLE

Certain diseases that affect cucumbers live over from one year to the next in the soil, investigation by the United States department of agriculture shows. A transfer to new soil each year in addition to seed treatment and spraying of the vines is found advisable to effect their control.

The ornamental wild cucumber vine is a factor in overwintering and spreading cucumber mosaic or "white pickle," one of the most serious diseases. Mosaic cucumber fruits are often deformed, mottled with green and yellow and have numerous large dark green warts. The leaves turn yellow and die, leaving stretches of white stalks.

The disease does not live in the soil, but is believed to be caused by a virus which lives over winter in the wild cucumber seed and is spread by striped beetles. The cucumber beetles feed first on the diseased wild plants in the spring and then fly to the cucumber fields. The eradication of the wild cucumber is therefore recommended.

Downy mildew is prevalent in the Eastern, Southern, and to some extent in the North Central states, west to Illinois. It is caused by a fungous parasite and can be checked by timely and thorough spraying with 4-4-50 Bordeaux mixture.

Angular leaf spot or leaf blight is caused by a bacterial parasite and is carried by the seed. It can be combated best by treating the seed in a 1-1,000 corrosive sublimate solution.

washing in running water and drying immediately. The disease may live over in the soil to a slight extent, making rotation advisable.

Cucumber anthracnose, recognized by brown dead spots on the leaves and sunken areas on the stems and fruits, is a fungous disease, which lives over winter in the soil and probably on the seed. Seed treatment and rotation are recommended.

Cucumber scab is another fungous disease, known also as spot rot and pickle spot, which occurs mainly in the northern cucumber growing sections. Stems and leaves are attacked but it is most noticeable on the fruit. The disease lives over in the soil, and crop rotation is recommended.

Bacterial wilt is caused by bacteria which live in and clog the water carrying vessels of the plants and causes them to die. The disease is carried over winter and spread chiefly by striped cucumber beetles. It may be somewhat checked by pulling and burning or burying all wilted plants as soon as they appear and by spraying with 4-4-50 Bordeaux mixture and arsenate of lead (four pounds), the spray acting as a repellent and poison to the beetles.

SUDAN GRASS WINS VALUABLE PLACE

Ten years after its introduction to the United States from Khartum, Africa, Sudan grass was being successfully grown in nearly all parts of the United States. It does not serve well either as a money crop or a soil improver, hence it may never find a permanent place in regular crop rotations. It has, nevertheless, a very important place in the farmer's second line of defense as a catch crop which can be planted to give satisfactory returns when conditions have brought failure to other hay crops. This is the verdict pronounced by the United States department of agriculture in Farmer's Bulletin 1126, recently issued.

Sudan grass is replacing millet as the premier catch crop in many localities because of its ability to produce a fair yield and a high quality of hay under conditions of low rainfall; its rather short growing season, and its ability to thrive on a wide range of soil types. Large yields of Sudan grass are obtained only on good soils, but the grass fails completely only on cold, poorly drained land.

Sudan grass produces heavily. In California under irrigation it has made yields of 9.8 tons of field cured hay an acre, when alfalfa produced but 8.3 tons under like conditions. It ordinarily yields about the same as alfalfa under irrigation in the Southwest, but Sudan grass gives its full crop in three cuttings against the four or five required for alfalfa. It is the only grass yet found which in this part of the United States ranks as the equal of alfalfa in point of yield and quality of the hay. Its record in this respect has led to its use in "patching" old alfalfa fields when the stand of alfalfa has been destroyed. In the Southern Great Plains where there is a low rainfall, Sudan grass grown without irrigation will yield from one to three tons of hay to the acre.

There are certain parts of the United States where the department of agriculture considers it unwise to depend on Sudan grass for hay. This is true of the strip of territory 200 miles wide along the northern boundary; the regions of high altitudes in the Western states; and also most of Florida and a narrow strip of land along the Gulf coast. Low temperatures prevent success with the grass in the first two regions named, and disease is the limiting factor along the Gulf coast. In a majority of the Central and Southern states, however, climatic and soil conditions are favorable to Sudan grass.

Although Sudan grass is best adapted by nature to use as a hay crop, it is also used with great success as a sowing and pasture crop for summer pastures. Its use as a silage material is limited by the fact that it is easily made into hay and fed as such with very little waste, and also because corn and sorghum both outyield it and are generally available throughout the region where Sudan grass is grown.

In the semi-arid districts the highest yields are obtained when the grass is drilled in. The advantage of the row over the drilled seedlings is so small, however, that most farmers prefer to avoid the necessity of cultivation by drilling or broadcasting the seed. A common grain drill handles well cleaned Sudan grass seed without trouble and the hay from drilled seedlings is finer stemmed and matures more evenly than row plantings.

The feeding value of Sudan grass is equal to timothy hay. In localities where soy beans or cowpeas do well these legumes may be grown in mixtures with the Sudan grass. Such a mixture produces a hay of higher feeding value than the grass alone, because of the high protein content of the legumes.

Sudan grass hybridizes freely with the sorghums. It is necessary, therefore, if pure seed is produced, to have the Sudan grass field at some distance from any sorghums, otherwise it will result in a mongrel crop the following year.

The department of agriculture's new bulletin goes very thoroughly into the details of cropping, planting, harvesting—both for hay and for seed—as well as the best methods of feeding the hay to livestock.

WEATHER REPORT

San Francisco, Cal., Nov. 6, 1920.

Stations	Rainfall		Temp.	
	Wk.	Season	Norm.	Max. Min.
Eureka	.09	7.59	4.87	56 38
Red Bluff	.00	2.81	2.86	70 36
Sacramento	.00	1.27	1.67	70 36
San Francisco	.00	1.96	1.68	68 46
San Jose	.00	1.72	1.45	72 34
Fresno	.00	.95	1.06	72 42
San Luis Obispo	.02	1.22	2.00	80 33
Los Angeles	.16	.96	.94	78 49
San Diego	.01	.33	.63	74 47

WEATHER REPORT

San Francisco, Cal., October 30, 1920.

Stations	Rainfall		Temp.	
	Wk.	Season	Norm.	Max. Min.
Eureka	.01	7.50	3.87	62 44
Red Bluff	.00	2.81	2.85	80 48
Sacramento	.00	1.27	1.41	78 48
San Francisco	.00	1.96	1.54	76 49
San Jose	.00	1.72	1.25	82 40
Fresno	.00	.95	.97	80 46
San Luis Obispo	.00	1.20	1.79	82 42
Los Angeles	.32	.86	.81	82 50
San Diego	.18	.37	.50	76 51

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Household Department

CLICK O' THE LATCH

The silence holds for it, taut and true;
The young moon stays for it, wistful white;
Winds that whimpered the sunset through,
Sigh for it, low and light.

Click o' the latch and he'll come home—
A stir in the dusk at the little gate.
Hush, my heart, and be still, my heart—
Surely it's sweet to wait!

The tall skies lean for it, listening.
Never a star but lends an ear.
The passionate porch flowers stoop and cling,
Parting their leaves to hear.

Click o' the latch, and him come home—
A step on the flags, a snatch of song.
Hurry, my heart, be swift, my heart.
How did we wait so long!
—Nancy Byrd Turner in Lippincott's.

ALL ABOARD FOR THE FURNITURE ISLANDS

By Clara Peterson

(Continued from last week.)

"No, it isn't the little fawn's father, Janie. See, this deer hasn't any horns. The face is the same, but it isn't the one—and think of it, Sir Arthur has promised to stop shooting—now they'll be married."

Janie dried her eyes. It wasn't the fawn's father after all—and how delightful that Sir Arthur and Alicia could be friends again!

They hadn't time to try to find their way back to the hound, for a page, who smiled shyly at Janie, came to take them to the Queen. Supper was being served in a pavilion on the lake side. The day had grown a little darker and not until they heard the word "supper" did the twins realize how hungry they were. They scampered after the page, who lost all his dignity in laughing with them.

The pavilion was set high above the water and on the blue painted steps Cinderella was waiting for them. She had changed to a gown of grey and pearl and her golden hair was bound with a chain of turquoises.

"Come, Twinnies, I hope we have what you like for supper," she said gayly, but there was a note of sadness in her voice. The twins did not realize that it was because Lady Alicia was sad; they were too hungry to realize anything except that the cunning little table was loaded with all kinds of good things.

There were cinnamon buns with plenty of raisins, and lettuce sandwiches, and a golden salad, and cups of chocolate pudding, and pears and peaches and grapes, to say nothing of a great tray of cakes covered with rainbow frosting.

The Queen had no more than poured her second cup of tea (the twins had lemonade) when there were footsteps on the sand outside the pavilion and Lady Alicia with her knight came up the steps. Cinderella ran to meet them.

"Oh, you darlings! You have made up. Now we can all be happy again."

Sir Arthur shook hands very soberly with the twins, and Lady Alicia, in moss green velvet, kissed their pink cheeks and thanked them. Then a serving maid brought another small round table for the lovers, because there wasn't room at the Queen's, and everybody began to eat.

The tiny white dog had a plate of meaty bones under Janie's chair, and a big St. Bernard with a white collar around his neck—he had come up with Sir Arthur—ate cakes from Jennie's hand.

After everything was cleared away Sir Arthur pulled up the rosewood music box and set it going, and Cinderella and Alicia, after the blue rug was rolled up, danced a polka for the twins.

Then, just as the sun was setting, two tall pages in suits of crimson and gold brought a carved and cushioned palanquin, and the twins seated themselves in it, for Paintetta and Cammie were waiting on Eastchair Island and it was time to go.

While Cinderella and Alicia waved their hands, the little girls were carried down the steps and across the terraces to the foot of the hill, and then up, up along the path they had traveled that afternoon.

The fawn and the bunnies were not to be seen, but below lay the palace, glorious in the sunset, and a hlur of gray and green showed where the

Queen and her lady were watching.

Mr. Bote was waiting for them. The Queen had ordered him and the pages immediately departed. He looked so downhearted that Jennie gave him a whole handful of dots instead of forty.

"Wife's home," said he, slipping into the water with the twins in their seats. "Found the house full of dirty dishes. I told the children to wash 'em—no use. 'Fraid to go home."

The twins didn't know what to say, so they trailed their fingers in the cooling water and looked toward Eastchair. It was a pretty island as green as the rest, but there were no trees, nothing but a low building that looked like a large pat of butter, it was so very yellow.

Mr. Bote was so sad that he did not even say good-by to the twins as they hopped off his back. They heard him muttering:

"I'd better go to Bed Island. Softest to sleep on."

With that he splashed in the water and was gone.

It was very nearly dark and the twins hurried through the grass and huttercups toward the building. It looked most comfortable, for there were a great many round windows, and light was streaming from every one of them. In fact, the Daffy-down-dillies were giving a party, and Paintetta had left word for the children to meet her there.

Janie and Jennie ran around the hack of the building, which would have been quite dark save for the thousands of fireflies flitting about and looking like the sparkles on endless rows of Christmas trees.

The front entrance way was long and narrow and was lighted by a large globe in the corner of the ceiling. The twins stopped at the wide open doors and peeped in.

There was a red carpet on the floor of the hall and a red cushioned waiting hench at one end, and at the double doors which led into the center of the building were ruby velvet curtains drawn closely together.

The hall was empty except for a Dandy Lion in a bright yellow suit. He sat at a little ticket window and when Janie stretched her head a hit too far and fell into the door he looked up with a frown.

"You're early. Names please."

"Janie," said Janie.

"Jennie," said her twin.

They had entered and were standing rather fearfully before the lion.

He had taken the cover off a white box of tickets as he spoke, but when he heard the twins' names he jerked up his head and stared at them. He was a very young lion and he was shaved so carefully that he looked as sleep as Jennie's cat at home, but the twins backed away nevertheless.

"The very idea!" he scolded in a gruff voice. "Those are quite the ugliest names I have ever heard. And you expect to go to the Flower Ball! Prepossoteros!"

This last word didn't sound quite right to the twins but they thought it must be correct or Dandy Lion wouldn't have used it and they didn't feel the least bit like correcting him anyway. He began talking as he worked among the tickets.

"I should think you'd be ashamed to walk around with names like those. You should hear some we'll have tonight. Now, little girl, don't cry. (Janie's eyes were brimming.) I don't know hut what you might sit on the hench over there and watch the guests come in. Don't—"

He stopped suddenly, and from the hench the twins saw the first guest enter. Dandy was searching frantically among the tickets, hut Janie and Jennie did not notice him, for the lady who had stepped so daintily into the hall was an American Beauty.

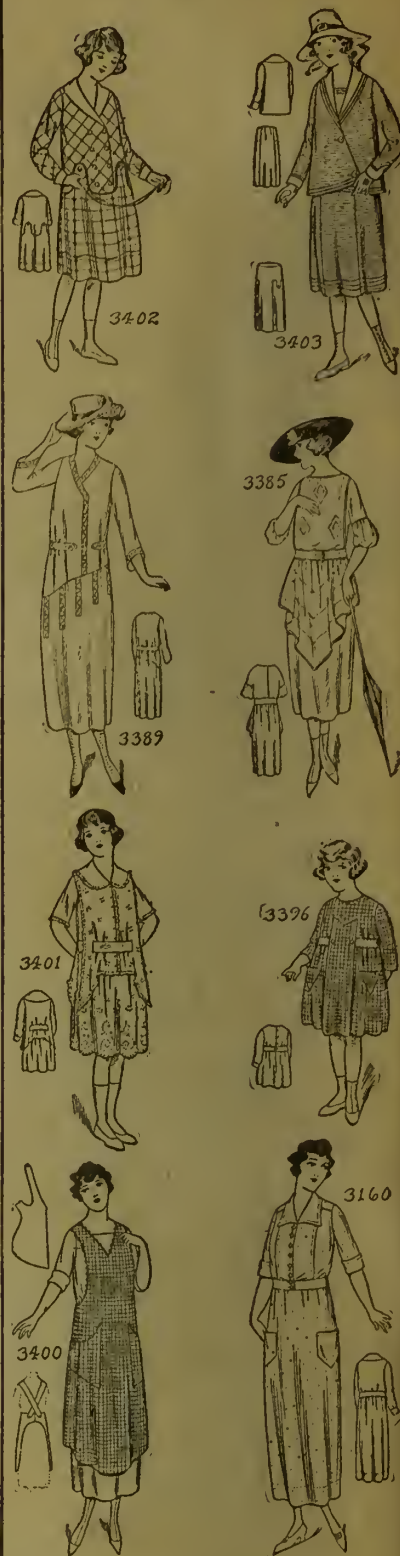
She had on a scarlet headdress of rose petals and her gown was red and gold. Her necklace was of diamonds and she spoke languidly as she reached out a white hand for her ticket.

"Rosebud Natalie."

Dandy Lion handed her the hit of pasteboard and someone inside drew apart the velvet curtains. Rosebud Natalie walked gracefully between their folds and the sound of fairylike music floated out.

The twins had only time to squeeze each other's hands over the wonder of

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It when another lady stepped through the doorway, lifting her gleaming train.

"Pansy Perdlta," said a sweet voice as Dandy Lion handed her the ticket.

She was dressed in royal purple with wistaria lace and her hair and eyes were black. She turned her head and smiled at the twins, then the curtains parted again and she was gone.

The fragrance of perfume which had come in with Miss Rosebud was now growing stronger, for the flower ladies were arriving in a crowd. The twins could hear only part of the names and they could not see Dandy Lion at all, for between them was a mass of silken dresses and shining arms. There was now such a gathering that no one could see the twins, and they were whispering excitedly.

"That one is Marigold Aurella," said Jennie softly. "Isn't that lovely orange satin—and there is Snowdrop Madeline, the darling little white thing, and this one in lavender is Hyacinth Annette."

"I liked Primrose Cecilia the very best," whispered Janie. "She had on a lemon colored dress just like my Sunday one, and little cunning green slippers. I wish she hadn't gone in so soon—Columbine Lucille looks too proud I think."

Both of the twins liked Daisy Evangeline in scalloped white satin, for she happened to look down and smile at them, but Bluebell Hortense stepped on their toes without even knowing it and Amaryllis Regina in creamy pink chiffon crowded so that the twins were quite ashamed of her. Lily Dorinda had on an ermine cape which looked ever so hot, but Heliotrope Althea in a short gown of palest purple covered with icy spangles looked cool and sweet enough to eat.

When everybody had drifted past, the charming strains of music growing louder and louder, the twins took their eyes from the ruby curtains and looked at Dandy Lion. He had a bright green handkerchief in one hand and was wiping his head, muttering to himself.

"Head's swimming—rather have name Smith, Lizzie Smith—"

The twins were just wondering whether they ought to go up and speak to him when there was a sound of violins from without and Dandy got down from his stool and ran to the door. He beckoned to the twins to follow him, and all three of them stood and looked out into the night.

Across the lawn toward the building the Daffy-down-dillies were coming. The light from the windows shone upon them and over their heads a myriad fireflies twinkled like live embroidery.

The Daffodils were dancing gayly and each one played a fairy violin. They wore green silk stockings and golden slippers. Their petticoats were of yellow lace and their flowered gowns were cut away like Bo Peep's. Each one had long curls of yellow, and pink cheeks and eyes that sparkled at the twins and Dandy as they came closer.

"They don't need tickets, thank Heaven!" said Dandy as he scrambled out of the way.

The twins ran back to their bench and watched the Daffodils swing through the hall. Then the crimson curtains closed behind them and the little girls sank back rather sorrowfully.

"May I go in?" asked a voice.

A girl was standing in the doorway. She had brown hair braided neatly and tied with a black bow, and she wore a pretty dress of pink striped gingham which looked almost like the twins' pajamas.

Dandy lifted his head and snapped, "Name please?"

"Mary."

"Mary!" shouted the lion. "Can't do it. Sit over there."

He pointed to the bench and the twins moved over to make room for the girl. She smiled and said:

"Why can't we go in? All of my flowers have left the garden and I want to see what they are doing. It is quite absurd to have them act like real people."

Mary wore a necklace of little wrinkled shells, and on her arms were bracelets where silver bells tinkled cily.

"Are you—could you be Mary, Mary Quite Contrary?" asked Jennie, while Janie stared wide eyed.

(Continued next week.)

HOUSEHOLD QUERIES

Pear Syrup Molds

Why is it that when my pear syrup is kept a long time there is a moldy surface which can be taken away without changing the taste or flavor? I have some grape syrup which is kept in same kind of bottles as the pear and does not get moldy.—Subscriber, Petaluma.

Perhaps the pear syrup was not boiled down to the same density of sugar as the grape and so would not keep so well, or was not sealed boiling hot. If one has an hydrometer and boils syrup down to 70 degrees on the Balling scale or 37 per cent on the Baume (tested when syrup is cold) it will keep perfectly even in open containers. Or poured boiling hot into sterilized bottles or jars and sealed at once it will keep if reduced to only 63 degrees sugar. An hydrometer may be purchased from any chemical supply house or ordered through drug store for less than one dollar.

Home Curing of Beef

This year we expect to kill our own beef and would be glad of any advice on home curing, especially how to make "dried beef" and in putting the meat in a brine to freshen and use as fresh meat. We do not care for what is commonly known as "corned beef."—Subscriber, Julian.

For putting down beef in brine allow ten pounds of salt, two ounces of saltpeter to four gallons of water. The saltpeter is added to keep red color of meat. It may be omitted. This is about the quantity required to brine 100 pounds of beef. Bring brine to boil and let cool before using. Thoroughly clean and scald barrel or crock before packing beef in it. Rub pieces of beef with ten pounds of salt to 100 pounds meat and allow to stand overnight to draw out blood. Then pack in container and add brine prepared as above to cover. Keep meat submerged by wooden float until used. Store in cool place. If brine becomes slimy or moldy or of unpleasant odor, pour off and add freshly made brine of same strength. In corning, sugar and baking soda are added to brine.

Smoked Dried Beef. The round is usually employed. Cut lengthwise of muscle fibers so that fibers will be cut crosswise later for table use after drying. To 100 pounds meat weigh five pounds salt, three pounds sugar, two ounces saltpeter. Mix thoroughly. Rub meat with one-third of this mixture and pack tightly in large jar or barrel. Allow to remain three days. Remove and rub with one-third of mixture. Let stand three days. Repeat third time. The brine forming after each salting should not be removed but the meat should be repacked in liquid each time. Now for the smoking. Rinse off adhering salt and hang in smokehouse. Allow to drain several hours. Smoke for about three days, then hang in kitchen or dry attic and allow to dry sufficiently for slicing. The meat should hang in smokehouse about seven feet from ground. Cool smoking is what is required. The fire should be outside the house and brought in to the center of the floor by stovepipe. Directions for making a smokehouse for smoking fish were given in the household department of Cultivator of October 16, 1920. These can be followed by modifying to give added height for beef or pork and to conduct smoke from outside fire.

HINTS FROM HOUSEKEEPERS

Three Weeks Cake

Have been a subscriber to your paper for the past year and as I have been helped by your recipes, thought some of your readers would like to benefit by a good cake recipe that does not call for any eggs.

Three Weeks Cake. Three cups water, 2 cups sugar, 3 teaspoons cinnamon, 1 pound seedless raisins, 1 teaspoon salt, 4 tablespoons lard. Boil 15 minutes and let cool. Then add 2 teaspoons baking soda dissolved in 4 tablespoons lukewarm water. Add 3 cups flour and mix stiff. Bake in slow oven. This is like fruit cake and will keep indefinitely.

A good frosting for this cake: Powdered sugar, 1 teaspoon butter. Mix with cream and beat well. Flavor with vanilla.

Hoping this will help others as I have been helped, Mrs. C. E. Dilley, Elsinore.



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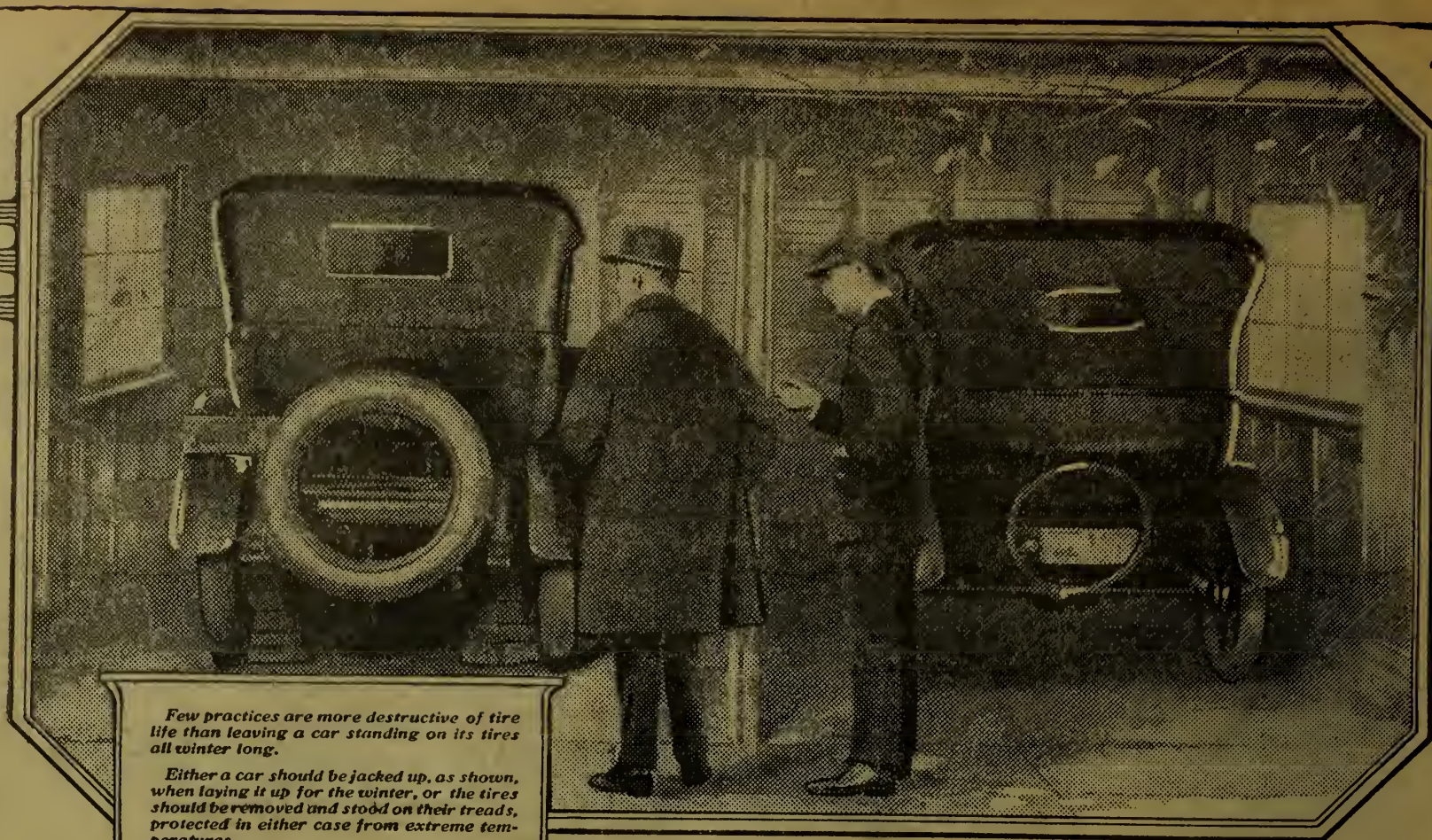
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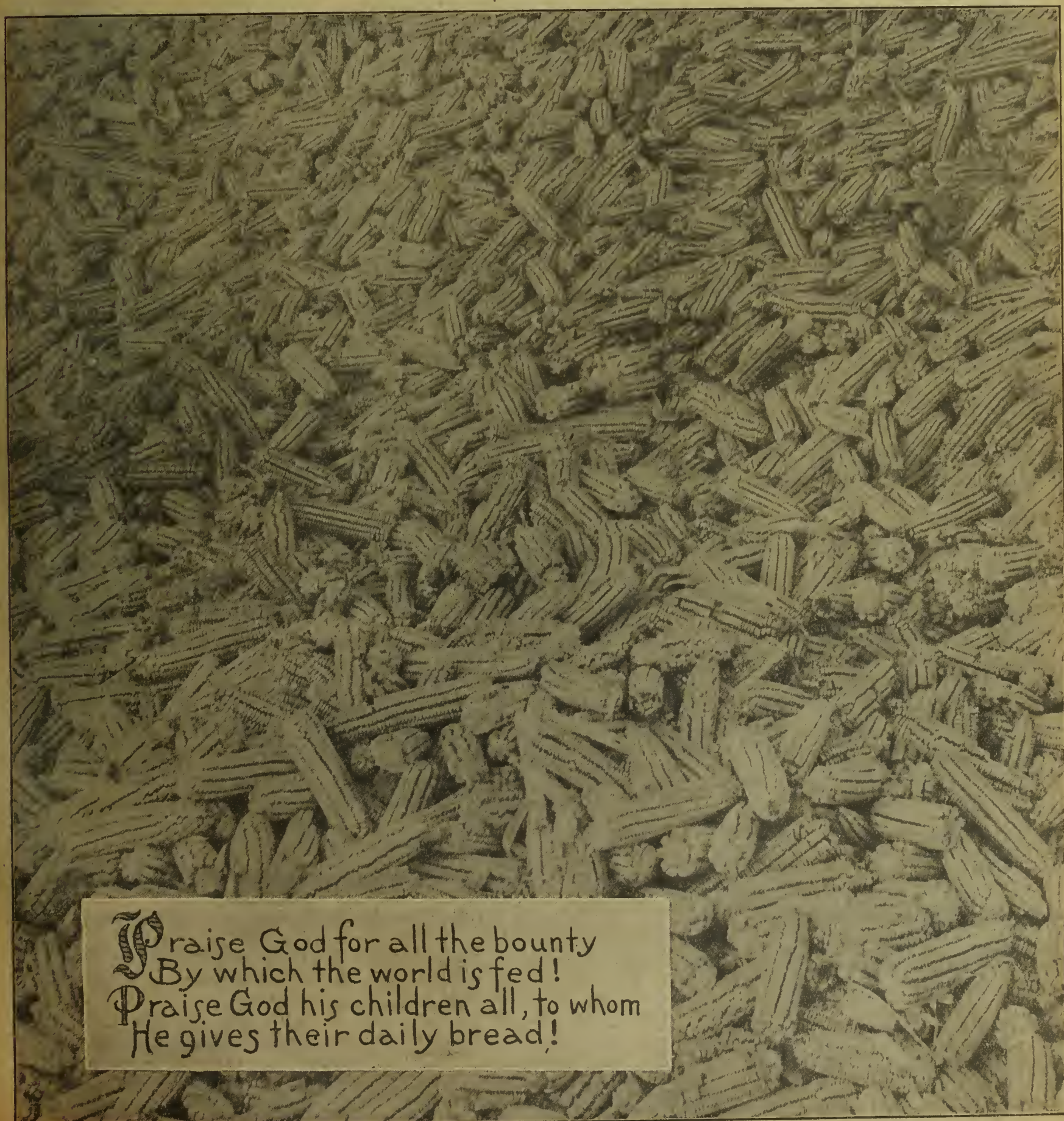
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San Francisco

Vol. LV

November 20, 1920

No. 21



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By which the world is fed!
Praise God his children all, to whom
He gives their daily bread!

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OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

EDITORIALETTES

Note the picture of abundance on the cover; also note the Thanksgiving suggestion in the four lines at the bottom. While we cannot help but think for a moment of the pangs of hunger which are endured by many on the other side of the world, there is certainly abundant suggestion for this Thanksgiving season in America. Our crop of corn was never so great; our crop of practically all foodstuffs is in excess of normal. The surplus is being sent as rapidly as possible to all parts of the world; our surplus, now ready for export, is said to represent a value of over two billions of dollars.

We hope our readers will understand that the wonderful display of corn on the cover is intended simply as an exhibit of abundance rather than of perfection of type. Back in the corn states they would perhaps pick flaws with these individual ears of corn. California has also produced vastly higher quality, but none showing more perfectly nature's abundant gifts.

The meeting of the county horticultural commissioners of the state at Fresno last week had little of interest for the general public, in fact, many of the sessions were executive, but we doubt not the increased efficiency made possible by more united effort

will result in greater service to producer and shipper. California's quarantine service and county orchard inspection has saved the state millions.

* * *

Not content with past accomplishments, the commissioners are planning bigger. Bugs they have fought; chasing of big red apples to the bottom of the pack has been accomplished, and weeds hoed. But the weed campaign is now to be not only "efficient but sufficient." A committee consisting of F. W. Waite of Imperial County, H. M. Kingwill of Glenn, Harry Stabler of Sutter, J. B. Hickman of Monterey and W. D. Butler of Napa are to make up the new weed pest committee. The tumbleweed will now be chased across the valley faster than ever.

* * *

Speaking of the magnitude of the California fruit industry and comparing it with its beginnings when small express fruit shipments across the continent were considered most remarkable, Mr. Bentley called attention to the fact that one day's offerings and sales of California fresh deciduous fruit in the one market of New York aggregated 185 carloads. California is indeed the greatest fruit producing state of the country, but when today's deciduous fresh fruit freight rate on \$1.15 is raised to \$1.92 the industry will be so handicapped that there can hardly help but be a material reduction in our marketing possibilities. Besides the increase in the freight rates there will also be a reduction in diversion privileges, which means a greatly restricted market. Transportation people and the interstate commerce commission appear to be endeavoring to determine how much the California fruit industry can bear.

BIG CITRUS CROP

As California begins shipping its citrus crop for 1920-21 there is much of interest as to quality and quantity. So far the quality appears to be above normal, but it is yet too early to speak with certainty in the matter, for a streak of extreme cold is sometimes given which materially lowers its quality. As to quantity, the Pacific Coast Packer estimates of oranges, lemons and grapefruit a total shipment for the year which will end November 1, 1921, of 57,675 cars, of which 23,320 will be Navels, 20,710 Valencias, 2,165 miscellaneous, 508 grapefruit and 10,400 lemons. If this estimate is reached it will be some 12,000 more cars than were shipped out last year and the biggest crop yet shipped from California.

The quality of Florida fruit is reported as high, "possibly the best ever placed on the market, according to present indications." It seems that it is impossible to make accurate estimate of the Florida output because of lack of data as to number of new orchards coming into bearing. Based on percentages of production, compared with last year, the total output of citrus may exceed 13,500,000 boxes. Last year's output was 12,495,925 boxes. The grapefruit output will be about 75 per cent that of last year and the orange crop 115 to 120 per cent. The government crop report divides the production as follows: Oranges, 8,500,000 boxes; grapefruit, 5,000,000 boxes. Florida is not a lemon producer.

Other states producing oranges, almost entirely of Satsuma variety, are Alabama and Louisiana. There is no means of knowing what the output of those states is, but the guess is that the output of Alabama will be between 50 and 100 cars. Louisiana is a producer of a quantity of the sour, or bitter, Seville orange used in the

making of marmalade. The state will not produce, all told, over 50,000 boxes, of which nearly three-fourths will be Creole Sweets, the balance divided among Mandarins, Tangerines, Navels and a very small sprinkling of grapefruit. The southern part of Louisiana is the oldest citrus producing section of the United States.

COOPERATION IN THE LARGE

While California has set the pace for successful cooperation, there is still to be found an occasional association which is not securing fullest measure of success. So far as we have observed, this lack of success has not been because of lack of business management or of keenest of observation as to market conditions in the great market centers. Take, for instance, the present situation as to beans and rice. The keenest management in the world cannot go up against a flood of imported stuff from Asia and get by and secure a living return to the American grower. The lack of a protective tariff, the unfair rates of exchange, the fact that many American ships used to transport food to other countries make attractive rates on these particular products back to this country, all combine to lower the price below possible competition.

While these difficulties might not all be overcome by a more complete cooperation, excepting that that cooperation could secure federal cooperation, yet there might be something of relief in accepting a suggestion made in the recent fruit growers convention at Fresno. This suggestion had to do with a more thorough cooperation by

cooperators. California today has, say, a score of great cooperative organizations maintaining each its full selling force, and some of these great organizations are transacting a business ranging from 50 to 100 millions of dollars each annually. Why cannot economy be served by uniting these great selling organizations? No question was asked on the floor of the convention which attracted such instant attention and which appealed so strongly.

The grower of rice, of raisins, of prunes, of peaches, of beans, citrus fruits, potatoes, fresh vegetables or other products would then turn over to the one strong organization his product, and the selling organization, with its distributing stations in all centers, would be able, possibly, to deal with the consumer, but more probably with large retailers, eliminating much of the intermediate and expensive marketing machinery. The spread between producer's price and consumer's is uneconomic, worse, it is almost criminal. The rice grower is today unable to sell at three cents per pound; the housewife is often compelled to pay 20 or 25 cents per pound. It's immaterial who gets that several hundred per cent on producer's price, but the production of the crop will cease under such conditions.

This great distributing organization will not come without long planning, without even a long educational campaign, but the Cultivator feels safe in predicting that the day will come when such great organization, capitalized at \$100,000,000, or at least sufficiently, will take our crops and put them in consumers' hands and still leave the producer living wage.



"Before you decide
Take a Briscoe ride"

NEW BRISCOE

The Leader of Light Weight Cars

Prices Now

5-pass. Touring Car

\$1285

Compartment Roadster

\$1285

Four-door Sedan

\$1885

These prices guaranteed against decline to April 1, 1921.

All prices f.o.b. factory

MANY farmers are buying sedans this season, now that the New Briscoe has shown the way to enclosed-car luxury at a moderate price.

The sedan has a lot of advantages as a year-round car, and all of these are found at their best in the New Briscoe.

Next time you're in town with the family, why not let the Briscoe dealer drive you around a bit? He will be mighty glad to do it.

Frank O. Renstrom Auto Co.

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San Francisco, Calif.

Los Angeles, Calif.

BRISCOE MOTOR CORPORATION

JACKSON, MICHIGAN

Countersunk Felloes—

giving a support on the whole rim instead of at six points only—mark a very distinct step forward in wheel design.

(175)



California Cultivator

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Los Angeles, November 20, 1920

One Dollar Yearly

Great Convention Week at Fresno

By C. B. Messenger

THE shade of Russ Stephens certainly stalked in convention halls in Fresno last week. Attendants at the state fruit growers conventions a decade or even a score of years ago will recall voluminous reports, together with scathing denunciation of freight rates which fruit growers of California were compelled to pay, and these reports contained a great fund of information as to cost of production, together with the return to the grower compared with return to railway people for transporting the fruit to the market. Mr. Stephens has passed and during the last five years but little reference has been made to transportation rates, but at the Fresno convention several talks were made, with reference to the unfairness in present arrangements, many of the expressions recalling vividly remarks often made in Mr. Stephens' annual reports.

The transportation question seemed to set the pace, for it proved to be a scrappy sort of convention in other particulars. Besides the fight on transportation, which was made by Charles Virden of Sacramento but supported by many other old time convention attendants, including Frank B. McKeivitt, also of Sacramento, the horticultural commissioners had their difficulties as to quarantine regulations in different parts of the state. The potato growers reached no definite decision but had a warm discussion on standardization of potatoes. Some wished the United States standard adopted; others felt that this would be an injustice to some sections of the state, especially the delta of the Sacramento and the San Joaquin. The nurserymen, likewise, had opportunity for fireworks in discussion of bud selection, and, in fact, all the discussion resulting from difference of opinion brought out a settlement satisfactory to all, that is, if we may except transportation, for that is one problem which will never be settled to the entire satisfaction of all.

Other associations holding conventions at the same time were the ladies auxiliary of the nurserymen's association, the dehydration convention, the county exhibit management association, and then besides some two or three other organizations similar to that of the county and city association of purchasing agents.

The State Fruit Growers

The 53d State Fruit Growers and Farmers Convention was first called to order by President Glass of the Fresno chamber of commerce. He, with Mayor Toomey, extended welcome, which was responded to by Director Hecke with acceptance of the hospitalities of the city of Fresno and concluding with his annual address and statement of the accomplishments and expression of the hopes of the department as to California agriculture.

Touching upon the cooperative spirit Mr. Hecke said:

The Great Solvent—Cooperation

"The salient feature of the year's

work, and one that has been amply demonstrated, is that of the vast possibilities accruing from properly directed and well placed cooperation. I will venture to say that there is no problem confronting the agriculturist of today that, under properly administered and well directed effort will not be solved through the efficacious intervention of 'real cooperation.'

"Through the fruit growers and

tomology and our pest control service promises valuable returns under better organized future conditions.

"The outlook for the success of cooperative measures between the California department of agriculture and the federal bureau of crop estimates, markets, entomology, etc., is reassuring and will yield returns to California agriculture not at all possible under more restricted state operations."



Two of the Meeting Places

Upper picture shows Fresno city auditorium, a magnificent structure capable of holding thousands and the meeting place for the State Fruit Growers Convention. Lower, the chamber of commerce where county horticultural commissioners and certified seed potato growers convened.

farmers conventions the California department of agriculture has had the opportunity of cooperating with the agricultural interests of the state in bringing before the people those problems which most vitally affect the farmers and fruit growers. In order to render the work of the department more effective and to enable us to bring to bear upon the problems facing our California growers the added strength of the United States department of agriculture it has been our policy to enter into cooperative agreements with the various bureaus of the federal department. This enables us to improve the salaries of some of our leaders to a limited extent through the payment of collaborators salaries, thus holding them for directing these important lines of work. Cooperative work, in force for some time between the federal horticultural board and the quarantine service of the state department of agriculture, has rendered our quarantine service more effective, and that between the federal bureau of en-

The first day's sessions were given entirely to "Our Present and Future Problems." These were discussed by representatives of practically every large cooperative association in the state of California. The associations were:

California Associated Raisin Company, F. A. Seymour, assistant to the president.

California Peach and Fig Growers Association, F. H. Wilson, president.

California Fruit Growers Exchange, W. E. Sprott, Porterville.

California Walnut Growers Association, Carlyle Thorpe, manager.

California Almond Growers Exchange, George W. Pierce, president.

California Pear Growers Association, Frank T. Swett, president and general manager.

California Prune and Apricot Growers Association, H. C. Dunlap, secretary-treasurer.

California Fruit Exchange, George Cutter, president.

California Fruit Distributors, Wilmer Sleg, sales manager.

In addition, J. M. Henderson of the Associated Milk Producers of California spoke of the work of his association and of its effort to save the industry which is founded on an economic necessity. He said: "National development depends upon the cow. Her product is one which depends upon all the people. I have abiding faith that people will not expect production without reasonable profit plus cost of production." He referred to the efforts of the department of justice and to the decision rendered by Judge Shields and expressed the hope that it would not only save the dairy industry in California but induce the growers to take new heart and produce more milk. He asserted there is not today produced in the United States sufficient milk to apportion a glass a day to each inhabitant.

The rice growers had no direct representative of their association present. Rice growers are not able today to get more than half the cost of production for their product, but grocers are charging to consumers 20 or 25 cents per pound.

Cooperation of Cooperators

But the biggest thought of the day's discussion on cooperation was cooperation of cooperators, one great, strongly financed corporation owned and managed by state or possibly Coast cooperative organizations, this organization to be abundantly capitalized to own and operate warehouses and distribution stations in every large distributing center of the country. In distributing California products alone this corporation would have such lines as canned fruits, canned vegetables, and canned products of all kinds, beans, potatoes, rice, dried fruits and nuts of a wide range, celery, lettuce, cabbage, in fact, all winter grown vegetables, citrus fruits, deciduous fruits from earliest cherries to latest peaches, even pomegranates.

This suggestion met with instant approval on the part of nearly a score of those who discussed the question. More than that, it called for lobby discussion between sessions. Many felt that it might lead to relief from the wide spread between producers and consumers prices. The price received by producer seems in many cases to have no bearing on the price paid by the consumer, for instance, three cent rice selling for 20 or more cents, and seven or eight cent beans near the 25 cent mark.

Standardization

In every one of the associations holding conventions during the week one question up for discussion was standardization. With nurserymen it took the form of bud selection, while with potato, apple or other growers the whole matter of capitalizing honesty of pack was thoroughly discussed. The discussion was usually led by F. W. Read, specialist in standardization of the state department. The first step to be taken appeared to be edu-

(Continued on Page 670.)

Agricultural News Notes of the Pacific Coast

Northern California

Hay and grain crops in Modoc County have been particularly good this year.

Petaluma shipped out nearly 2,000,000 dozen eggs from January 1 to October 1 last.

Hinsdale, Sutter County, is planning to make large plantings of sweet potatoes next season.

The market on potatoes and onions is discouraging, large quantities being stacked up on wharves.

Beekeepers of Butte County met last week at Chico to discuss development of the industry in that county.

The rains of the last week of October practically brought to an end grape shipping season in Sonoma County.

Many land holding corporations of Japanese were reported formed at the eleventh hour just before the election.

At the tractor course just finished at Lodi, San Joaquin County, 11 makes of tractors were used in demonstrations.

A good crop of celery in New York this year is expected to help in lowering prices on Sacramento Valley grown celery.

Rice growers of Colusa County report benefit from the north winds, which have hastened drying of the rice fields.

Teachers of agriculture in the high schools of Northern California met at Lodi last week to consider educational problems.

The Poultry Producers of Central California will build a packing house at Petaluma as one step in marketing the produce of its members.

Olive growers and packers met a few days ago at Chico to protest the recent ruling of the state board of health that no olives can be sold in bulk.

The State Grange met in annual session in Sacramento the last week in October with an attendance of over 400. Action was taken to establish headquarters at Sacramento during the coming session of the legislature.

Grape growers of the San Joaquin and the Sacramento Valleys met at Modesto to consider method of combating the grape mealybug. R. L. Nougaret of the viticultural service was present at the meeting.

The Glenn County farm bureau held its annual election last week. Dr. W. H. Walker of Willows was elected president; O. L. Rater of Glenn, vice-president; directors, A. E. Linstrom and F. A. Clark of Orland, W. A. Koehler of Glenn and W. W. Foster of Butte City.

The state department of agriculture is cooperating with the federal bureau of crop estimates in a crop reporting service in California. R. H. Taylor and Dr. J. P. Iversen of the state department have received appointment from the federal authorities as collaborators.

The state university announces that the appointment of Dean Hunt as permanent delegate to the International Institute at Rome will in no way affect his connection with the college of agriculture. It is stated that he will return June 1 and resume his work with the college.

Central California

Orange picking has begun at Sanger, Fresno County.

It has been proposed to raise the required sugar content in wine grapes from 17 to 20 per cent.

Fifteen carloads of hogs sold at Hanford at the second annual Pork Day auction held October 28.

Shippers of grapes from Sanger, Fresno County, have experienced much difficulty in securing cars.

Miller & Lux are bringing in their big herds of feeders from Nevada for winter feeding on their California ranches.

The California Associated Raisin Company has announced a raise of half a cent in prices for the remainder of the crop.

Grape shipments from the Livingston district of Merced County are estimated by Inspector Chinn at over \$1,000,000 value.

The Farmers Union of Stanislaus County has asked the board of supervisors to establish a community rest room in Modesto.

The Lucerne packing house near Hanford, Kings County, has closed for the season after sending out 139 carloads of grapes.

Death of several cattle from eating poison hemlock has been reported by Horticultural Commissioner Hickman of Monterey County.

Manager Morris of the Merced-Stanislaus Sweet Potato Association announces distribution of \$60,000 from sale of the fifth pool.

Oranges are beginning to color up in the Springville district of Tulare County. A number of growers expect to start picking soon.

Farm bureau fat hog auction sales will be held in Kern County at Bakersfield, November 20; Wasco, December 4; McFarland, 11; Bakersfield, 18.

A series of lectures on poultry culture are being given in Stanislaus County under the auspices of the Stanislaus County Poultry Association.

Dairy Inspector Peairs of Tulare County, will demonstrate each Saturday to dairymen of the county methods of sterilizing milk in compliance with the state law.

President Giffen of the Associated Raisin Growers spoke on cooperation to the attendants at the annual picnic of the Stanislaus and Merced County farm bureaus on October 30.

The Milk Producers Association of Central California will hold another meeting November 20 to try to settle the policy of the association in regard to marketing with the California Milk Producers.

E. C. DeGaris of the Australian Dried Fruit Association at Melbourne has been inspecting the plant of the California Associated Raisin Company. Mr. DeGaris says that many of the returned soldiers have taken up grape growing.

Growers of Pima cotton in the Lindsay district of Tulare County have incorporated as the Lindsay Cotton Growers Association. About half of the members have signed up for membership in the Arizona-American Egyptian Cotton Growers Association.

Southern California

The San Dimas Lemon Association held its annual meeting November 6.

Eight boys and three girls of Tustin have enrolled in a 120 day pig feeding contest.

Redlands, San Bernardino County, held its November flower and horticultural show last week.

The recently organized Santa Barbara County farm bureau makes the thirty-seventh in the state.

Growers of milo in the Imperial Valley are seriously considering the formation of a marketing association.

Large plantings of grapes will be made the coming year in the Palo Verde Valley of Riverside County.

The U. S. geological survey has published a report on the ground waters of Antelope Valley, Los Angeles County.

The Garden Grove drainage project was defeated. It was felt that the distribution of assessments was not equitable.

The home demonstration agent of Riverside County will give demonstration of pressure cookers at the December meetings.

The second annual institute of the Orange County farm bureau held at Anaheim last week was attended by hundreds of ranchers.

The California Lima Bean Growers Association has raised the standard for 1920 Limas. Seaside Limas must now be 99 per cent perfect.

Apple picking is practically over in Yucaipa Valley of San Bernardino County. Growers report keen demand and very satisfactory prices.

A large number of potato growers of Orange County attended the potato growers field day at Van Nuys, Los Angeles County, last Saturday.

Directors of the Los Angeles, Ventura and Santa Barbara Counties farm bureaus were guests of the Ventura County farm bureau at a big barbecue at Foster Park, November 6.

At the Citrus Institute recently held in Orange County resolutions were adopted asking the citrus experiment station to conduct certain of its experiments in Orange County.

Cotton gins of the Palo Verde Valley of Riverside County are running to capacity. Most of the growers are selling sufficient cotton to clear their crop loans, holding the major part for better market.

The management of the Riverside County fair association is endeavoring to secure support of the farm bureaus of the seven counties of Southern California to make the fair at Riverside a Southern California farm bureau fair.

The Imperial Valley Honey Producers Cooperative Exchange held its annual meeting at El Centro November 9. Owners of 10,000 colonies along the Colorado River who applied for membership were advised to form a separate exchange as more economical in transacting business.

The importation of cheap olive oil has knocked the bottom out of the market for oil made from apricot pits, according to the local packing plants. During the years of the war the apricot oil was used by fish canneries and apricot paste by bakers in the making of "almond meal" maccaroons.

The Coast and General

Arizona is sending out shipments of early oranges.

The Colorado potato market is showing some improvement.

A cattle loan bank is to be established at Jacksonville, Florida.

Colorado potato growers report holding their crop for better prices.

Light showers in Eastern Washington have improved the pastures.

Range stock in Nevada has mostly been moved to lower feeding ground.

October 30 to November 6 was observed in Washington as Apple Week.

The Northwest livestock show was held at Lewiston, Idaho, November 7-12.

The Oregon Bankers Association is taking steps to extend proper credit to stockmen.

Walla Walla County, Washington, expects to ship out 50 carloads of potatoes this fall.

The Hood River apple crop of Oregon amounted to about a million and a quarter boxes.

Montana reports stock feed plentiful on the lower ranges except in the eastern part of the state.

Florida growers and shippers met at Orlando, November 10, to discuss methods of abolishing the bulge pack.

The cranberry crop on the Washington side of the Columbia River has been seriously damaged by heavy rain fall.

The farm bureau of Whatcom County, Washington, is buying stumping powder and other supplies needed in clearing logged off lands.

The first killing frost in the cotton belt east of the Mississippi came October 29 and 30. Rain in the same section delayed cotton picking.

The Walla Walla, Washington, Shorthorn Calf Club recently sold at auction 34 heifers. The sale was held at the fair grounds at Walla Walla.

A most successful fair was held at Port Townsend, Washington, this fall. Exhibits of vegetables, fruits and grain were said to be unusually fine.

One to ten inches of snow has fallen in ranges of Yavapai, Coconino and Navajo Counties of Arizona and heavy rains in other grazing sections of the state.

Heavy rains and cold weather in Colorado have interfered with late harvesting operations in potato and sugar beet fields and the shipping of livestock.

Two thousand family memberships at \$10 a year is the goal set by the Spokane County, Washington, farm bureau to be reached by the end of this month.

The annual meeting of the Yakima Valley Dairymen's Association will be held December 9. A series of organization meetings is now being held through the valley.

The Oregon Cooperative Growers Association is sending out checks to pear growers based on an apportionment of \$70 a ton on No. 1 pears and \$30 a ton on No. 2's.

Shanghai, China, is one of the leading egg freezing centers. There are others at Nanking, Hankow and Tientsin. In 1919 these exported 4,000,000 pounds of desiccated eggs.

Farm Bureau Will Market Products



THE farmers of California announce through their authorized grain growing and marketing committees the completion of one of the most perfectly organized campaigns ever started in the agricultural districts of the state. They have taken over the new 2,000,000 bushel terminal elevator at Oakland tidewater. Their organization for establishing country elevators and warehouses is completed. Fifty thousand farmers are enlisted into county and state marketing exchanges. Will export and market products directly to the consumer. Economic conditions controlling the distribution of farm products have long been problems of deep concern to the farmers, and the project as herein announced indicates that from the weakness of exploitations of the past there has crystalized into activity a program which in its very nature must react for betterment to both the producer and consumer of food.

The program started upon bids fair to make agricultural history in California. It will primarily revolutionize the grain operating industry of the state and relegate the sack handling of grain and other products, with the laborious and expensive processes in-

involved, into past history, as already experienced over the entire grain growing districts of the United States outside of California.

The project just launched will standardize and make of common knowledge to the farmer the grades of grain and other products grown. It will permit the farmer to deal directly with the refiner and consumer of his products. It will make possible the elimination of speculation in farm products and make possible a reduction in the costs to the user and consumer.

The perfection of the terminal plans will give outlet for export and interstate shipment of prepared grains. The perfection of lines of country elevators over the state will save an annual sack bill to the farmer of California of over \$5,000,000 and will reduce the annual labor cost of the grain harvest of the state fully \$5,000,000 more.

In perfecting the cooperative county marketing exchanges over the state the sale of grain and other farm products will go forward at minimum expense and reach its final distribution

By W. H. Heileman

through a state marketing exchange created by a federation of the county units. In all the operations, middlemen costs will be reduced to the minimum and the control of the product will remain largely in the hands of the producer until turned over to the actual user. At present 17 counties have either perfected or are completing their marketing programs.

Under the present methods of supplying the world with agricultural products, the wool grown by the farmer brings less to him than the cost of production, though the price of clothing remains too high. The cotton grower this moment is facing bankruptcy, while cotton goods continue to go at almost war prices. The grain growers of the United States under present marketing manipulations stand to lose over \$2,000,000,000 on this year's crop, though the price of bread remains high and we have almost forgotten the five cent loaf. Mutton and beef production to the stock raiser is an unprofitable industry almost uniformly, though meat to the consumer has not been reduced.

The campaign just launched for the handling of farm products cooperatively is the latest development in the farming industry. Over the entire United States under the new and unified movement led by the American Farm Bureau Federation, farmers are organizing their grain, livestock and other industries on a cooperative basis. The basic strength in the program is the cooperative spirit which pervades and which has been developed through the farm bureau movement everywhere. The farmers of the state are together in this economic betterment and the consumers will early learn that the fundamental principles involved will merit their unanimous cooperation.

It is fully appreciated that carrying through the plans as developed will meet with organized opposition in some of our trade centers. The same conditions arise, however, in every movement for economic betterment. California farmers are convinced regarding the soundness of their position in undertaking to perfect their products for distribution and in organizing to place themselves nearer to those who are dependent upon the products of the soil.

Crop Report for California

By E. E. Kaufman



HIS crop report is compiled by the agricultural statisticians of the federal bureau of crop estimates and the California department of agriculture.

Conditions during October were generally favorable for continuing the harvest of California's various crops. Light rains occurred in all parts of the state, with a heavy fall of snow in the mountains. The snow melted rapidly, filling the reservoirs and greatly relieving the power shortage. Temperatures were about normal with warm sunny days and rather cool nights, with light touches of frost nipping the foliage of beans, cotton, corn and grain sorghums, with slight damage in some instances, but more generally helpful in checking further growth and bringing about more rapid maturing.

Corn

Corn matured rapidly during the month and harvesting is now going on, with yields about as expected. The average yield for the state is estimated at 36 bushels to the acre, compared to 33 last year and a ten year average of 34. The delta of the San Joaquin is the principal producing section, with a reported yield of about 50 bushels to the acre. Total production for the state will be about 3,240,000 bushels, compared to 2,871,000 bushels last year and 2,975,000 bushels in 1918.

In the United States the production is estimated at 3,199,126,000 bushels, as compared with 2,917,450,000 bushels last year and a five years average (1914-1918) of 2,760,484,000 bushels.

Potatoes

There was not only an increased acreage of potatoes this year, but an increased average yield as well, making the total crop about 13,289,000 bushels. Last year the production was estimated at 11,352,000 bushels and in 1918, 12,870,000 bushels. Both early and late potatoes are figured in the

acreage and production estimates.

In the United States the potato crop shows an increased average yield over last year which, on the increased acreage planted, brings the total production up to about 421,252,000 bushels, compared to 357,901,000 bushels last year.

Sweet Potatoes

The average yield of sweet potatoes this year is about 136 bushels, or just under four tons to the acre, which, on the estimate of 8,000 acres planted, gives a total production of 1,088,000 bushels, equivalent to 29,920 tons.

Sugar Beets

Sugar beets showed a condition on November 1 of 88 per cent of a normal, compared with 87 last month, 68 one year ago, and a ten year average of 89. The better condition and increased acreage promise a very material increase in the tonnage of sugar produced this year.

Sugar beet production in the United States is forecasted at 8,812,000 tons, as compared with 6,421,000 tons last year and a five year average (1914-1918) of 6,051,000 tons.

Grain Sorghums

The acreage planted to milo, Egyptian corn, etc., decreased in cotton growing sections, but increased slightly in some bean growing localities. Reports indicate that not quite the usual acreage was harvested. The average yield is estimated to be about 1,500 pounds per acre.

Rice

Some slight damage resulted from heavy winds blowing down and shelling the grain more or less.

Beans

The yield of beans other than Limas varies from two or three sacks to the acre in some sections to over 15 sacks in others, with an average

for the state estimated at about 680 pounds, or 11.3 bushels. Blackeyes are not up to expectations in the Modesto-Turlock district, and some pinks suffered from frost around Stockton. The production of small whites, large whites and pinks will be the smallest for a number of years.

Apples

Apple production was estimated on November 1 to be 69 per cent of a normal, compared to 100 last year and a ten year average of 77. Quality is below the average, and the rigid inspection this year is cutting down the percentage of the commercial (boxed) crop. Total production will be about 6,000,000 bushels.

Apple production for the United States is estimated at 236,187,000 bushels, as compared with 147,457,000 bushels last year and a five year average (1914-1918) of 202,698,000 bushels. The commercial crop this year is placed at 35,417,000 bushels, or about 106,251,000 bushels.

Pears

The production of pears is about 85 per cent of a normal, indicating a crop of 90,000 tons. Shipments are greater than last year, tonnage canned 80 per cent of last year, and tonnage dried, probably 50 per cent of last year.

Almonds

The production of almonds is now estimated at 65 per cent of a normal, or about 75 per cent of last year's record crop.

Walnuts

Reports on the total production of walnuts indicated disappointing yields when harvesting began, and the crop is now estimated to be about 22,500 tons, against a total last year of 23,100 tons.

Raisins

The indicated average yield was

about 1,900 pounds to the acre, which, on an estimated acreage of 190,000 harvested, would show a total production of about 180,000 tons.

Oranges

Many reports indicate that oranges are not sizing up quite as much as expected, although the condition is the same as last month, 82 per cent of a normal. Cool nights and sunshiny days developed color rapidly, and shipments from Northern and Central California have already been made. There is nothing in the present condition of the orange crop to warrant a change in the forecast of one month ago, when the total production was placed at 18,500,000 boxes for the state.

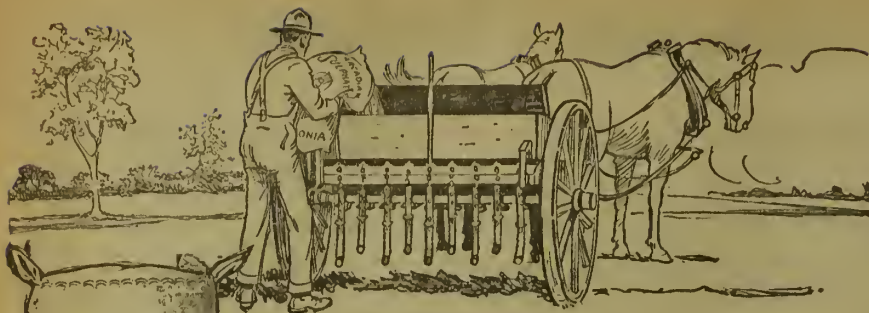
On December 11 preliminary estimate of cotton production by states and for the United States will be issued at Washington, D. C. On December 14 will be issued the final estimates of the acreage, average yield per acre and production of the various field and fruit crops. On December 17 the estimated acreage planted to winter wheat and rye for the 1921 crop will be issued.

The December report issued by this office will show the estimated acreage, average yield per acre, production and value to the grower of the principal crops grown in California in 1920, with revised figures for 1919. This will not be available until about the first of the year 1921.

WHO HAS THE LARGEST CHERRY TREE?

W. J. McGrath of Watsonville is anxious to learn as to the largest cherry tree in California. He refers to one Pajaro Valley tree which is certainly a sizable tree and one which would test the powers of a little hatchet Mr. McGrath writes:

"Some time ago I saw an article in your paper giving the circumference of what was supposed to be the largest cherry tree in California. If I remember right, it was seven feet and nine inches. We have a tree on our ranch that is about 35 years old which measures eight feet and six inches around."



Top-Dressing Talk, No. 1 *Which Source of Ammonia is Best?*

Think what it means to have a top-dressing ammoniate that is ready for use without pounding of hard lumps — one that is fine and dry and which can be applied easily and uniformly by hand or machine.

Then think of having a fertilizer that contains one-third more nitrogen (one-third more active plant food) than any other nitrogenous top-dressing— $25\frac{1}{4}$ units of ammonia guaranteed.

Also think of a fertilizer that will improve (not destroy) the physical condition of the soil, and that will tend to overcome the bad effects of alkali.

To all these advantages, add low price per pound of actual plant food and you have in mind "The Great American Ammoniate" Arcadian Sulphate of Ammonia.

The efficient top-dressing for orchards, vegetables, and general farm crops. It is quick, enduring and satisfying.

ARCADIAN
Sulphate of Ammonia

Write for free instructive bulletins on the proper use of "The Great American Ammoniate."

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CALIFORNIA: SAN FRANCISCO; Hawaiian Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Pacific Guano & Fertilizer Co., Western Meat Co., California Fertilizer Works. LOS ANGELES; Pacific Guano & Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Agricultural Chemical Works, Hauser Packing Co., Hawaiian Fertilizer Co., Ltd., Southern California Fertilizer Co. OREGON: PORTLAND; Swift and Co.

For information as to application write Desk 5

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The above illustration shows the impeller of a DeLaval irrigation pump. It is made of bronze and highly polished in order to reduce friction and pitting when exposed to water. Each individual impeller is designed to meet the special conditions for which it is required. It is then tested in factory under these actual conditions.

This is one of a series of advertisements explaining the different parts of the DeLaval Irrigation Pump.

Write for Booklet on
The Selecting and Testing of Centrifugal Pumps

Herzog Electric & Engineering Co.
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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

California Nurserymen

By Ernest Branton



THE tenth annual convention of the California Association of Nurserymen held at Fresno, November 11-13, was in many respects the most satisfactory, because most progressive, of any yet held. The provision of a financial budget on a five years agreement insures the "sinews of war" sufficient to meet every need during the stated term, and this alone goes far toward insuring success, for sufficient funds is the basic need of every organization. The further provision for meetings of the executive committee not less than once a quarter insures functioning throughout the year, in marked contrast to the past manifestation of life, evident only through three days of annual conventions.

After the froth and fervency of welcome and response had blown off, President Bergholdt delivered the official annual address, in which he stated: "The nurserymen are the connecting link in the chain of human activity that, on the one hand, ties a vast volume of human fruit food and an industry great and munificent to nature's storehouse, and, on the other, unfolds to humanity nature's beauties in plant life. While one is rated the greater material asset, the other is greater spiritually. Both are indispensable to human needs." He showed by catalogue figures quoted that California nurserymen are furnishing trees to the planter more than 50 per cent below prices obtaining in any other section of the United States. He urged closer cooperation, stating that the fruit tree men had dominated late conventions and the next president should be an "ornamental." The executive committee should be authorized and instructed: To renovate the organization; to devise plans and methods to enlarge its activities and make it the leading factor in the horticulture of the state; to draft a code of ethics to be rigidly observed and enforced. Also, that said committee should meet every quarter and secure a budget adequate to the needs of the organization. Continuous and systematic efforts should be made to increase the membership.

Standing Committee Reports

The committee on membership, R. M. Teague, chairman, reported on the past year's campaign and its success but that 25 per cent of 1919 accessions had dropped out, and recommended appointment of special district membership committees. The committee on finance, represented by J. S. Armstrong, chairman, reported funds on hand as more than brought forward from last year's report, but advised collecting sufficient to enable the proper officials to represent the association before legislatures, etc., in matters pertaining to impending legislation, transportation, quarantine regulations, etc. One of the most complete reports was made by J. D. Meriwether on transportation, so potent with facts and figures that it should be digested in full to appreciate its unquestioned importance and value.

M. R. Jackson, reporting on deciduous fruits, said that demand for trees was so great that nurserymen had already sold 75 per cent of their stock for next spring's planting and that the total number of cars of fruits and grapes sent out during 1920 exceeded that of 1919 by more than 8,000. The citrus and tropical fruits committee, R. M. Teague, chairman, reported active demand for Navel and Valencia trees, light for lemons, growing demand for pomelos, mandarins and tangelos, the latter a hybrid of tangerine-pomelo parentage. The demand for avocado stock of good varieties is beyond all expectation or anticipation. The feijoa, or Paraguay, guava, also promises to become a leading commercial fruit. "Native Vegetation," reported by Theodore Payne, recommending methods and varieties, merits full reproduction in a future issue. Roy F. Wilcox, chairman committee on plants and flowers, advised extensive trade exhibits at all future conventions, also a "credit committee" to establish definite credit principles among the trade, and that the next

convention be held at Los Angeles in 1921.

The Program

Many papers and talks before the convention are of such value that we hope to present them in whole or part in future issues of the Cultivator and therefore they will be but lightly touched upon here. Stenographic reports of extemporaneous or studied speeches have not yet been typewritten and therefore are not available.

A. L. Wisker of Grass Valley read a most exhaustive treatise on the subject, "Blight Resistant Pear Stocks," accompanied by tree exhibits so illustrative that it is a matter of regret that all pear stock propagators and growers could not both see and hear. In dealing with "Some Fruits That Pay and Some That Do Not," J. W. Barnicott of Newcastle gave such extensive list found to do well in various sections of the state that its value to growers at large can only be reached by publishing later in full. "Today's Problems in Citrus Culture" is another comprehensive survey of the whole field, a result of wide observation and deep study from which it is quite impossible to merely quote paragraphs in a skeleton outline of the program. The "piece de resistance" of the whole convention was Professor Wickson's paper on "California Nurserymen of the Fifth and Sixth Decade," a continuation of previous papers on the same general subject. It aroused more interest, applause and laughter than any other number on the program and the association will print it and previous numbers of the series in booklet form.

In the paper on "Growing Ornamentals Formerly Imported," read by Roy F. Wilcox, appear 32 pungent points for the consideration of growers of ornamentals, who are urged therein to experiment with the growing of stock now denied importation from Europe and Japan under quarantine regulation number 37. These consist largely of palms, heaths and similar shrubs, roses and rose stocks and many sorts of bulbs. Ernest Branton, under head of "California New Plant Introductions," merely gave lists of such, sent in by dealers, as they will appear in 1921 catalogues. The Silva-Bergholdt Nursery Company, Newcastle list the Standard plumcot; Anita plum, a seedling of Tragedy; Becky Smith, a plum of Japanese type; the Florence, largest of European plums; Wilma, also of European type; a new type of Tartarian cherry and a new black variety from England known as Bedford. The California Nursery Company of Niles have a new prune of exceptional promise known as the XX. The Armstrong Nurseries, Ontario, list the Ontario Cling peach, claimed to be distinct from Tuscan Cling and better adapted to use in the south. In citrus novelties the same firm lists Algerian Satsuma orange, Lue Gim orange, Rialto Seedless lemon, Rangpur lime, Thornless lime, Cedrola (Etrog) citron, Sampson tangelo, Deliciosa cherimoya and Choceana feijoa. The R. M. Teague Nurseries, San Dimas, report the Temple orange of Florida being under surveillance of the federal authorities, with prospects of a release to them during 1921. The Coolidge Rare Plant Gardens, Pasadena, list many novelties, among them a new very dwarf lemon of great bearing capacity, and Eugenia Hookeri, a dual purpose plant already becoming popular. Howard & Smith, Los Angeles, list new roses already prize winners in competition both in the United States and Europe.

George H. Hecke, state director of agriculture, spoke:

HOW CAN WE IMPROVE THE NURSERY INSPECTION SERVICE?

A question which is ever before the nurserymen, and before agricultural police officials as well, is how to prevent the dissemination of plant pests and diseases on shipments of nursery stock and at the same time cause the least possible interference with the legitimate business of the

(Continued on Page 674.)

The Source and Guardian of Quality

There is in the factories of this Company a section occupied entirely by men whose business it is never to be satisfied with things as they are.

These men, constituting the Development Department, are charged with the creation and improvement of Goodyear products, processes and factory equipment.

Out of their devoted labors have come not only the present excellence of the things Goodyear builds, but the very machinery by which these things are made.

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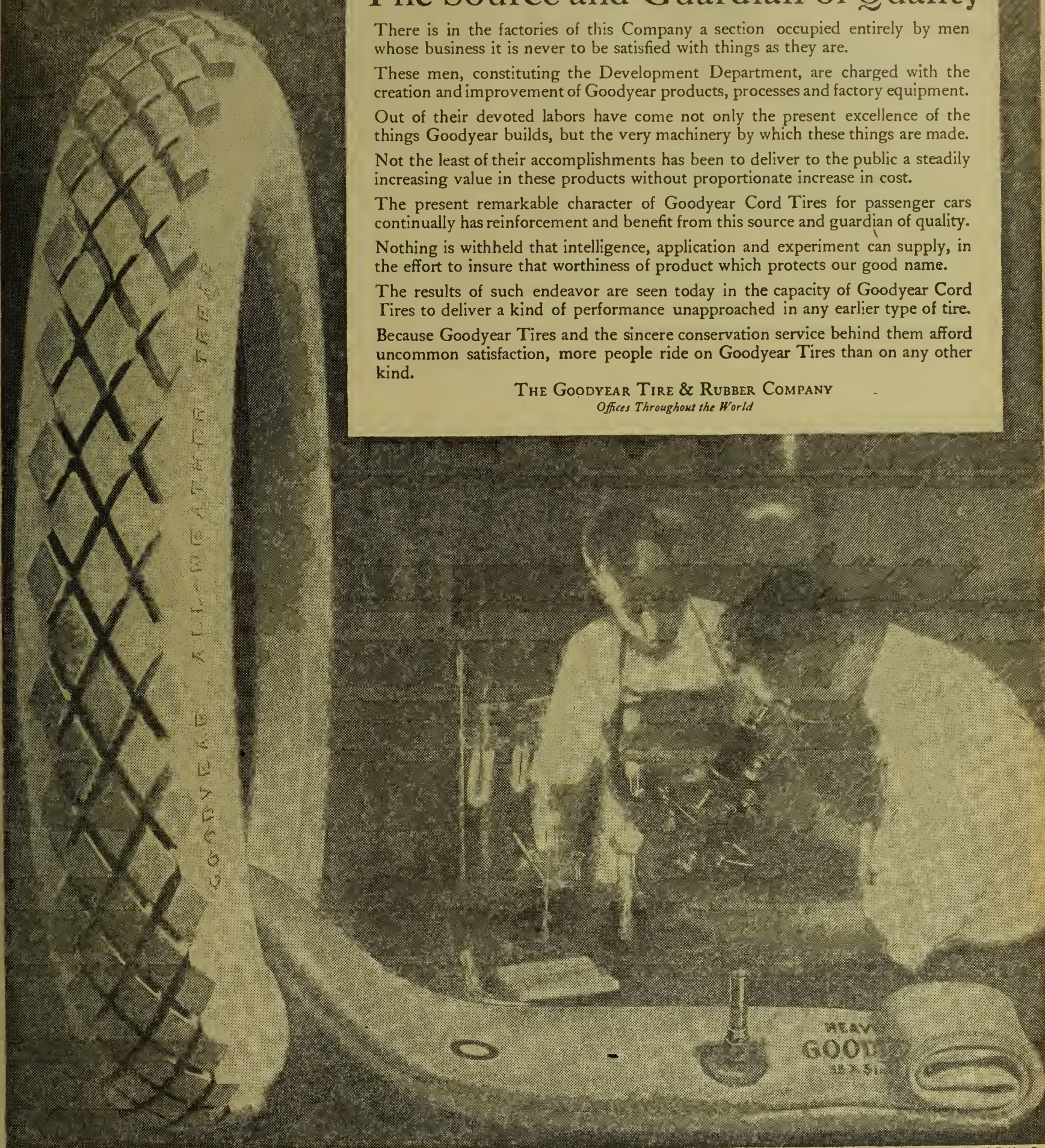
The present remarkable character of Goodyear Cord Tires for passenger cars continually has reinforcement and benefit from this source and guardian of quality.

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This is an actual photograph taken in one of the laboratories of the Development Department in the Goodyear factories at Akron

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GOODYEAR CORD TIRES

Fall Plowing in the Citrus Orchard

By E. L. Koethen

RECENTLY a client asked the writer to give a newly bought orchard "the once over." It was one of those unfortunate pieces of property that has been changing hands quite frequently for several years. Each succeeding owner has "milked it" and then unloaded it on some unsuspecting "easy mark," who has in turn done the same thing with it. The care it has had has been just that which will keep it in presentable appearance for surface inspection. Very little fertilizer has been applied and the team work has been of the most superficial. The result is typical of all such pieces of property, and it has lost value and was purchased for a low enough figure to justify giving it some real care and building it up, as it still shows much vitality.

Our first test with a soil tester showed the most pressing need. We asked the new owner if in irrigating there was much waste water. "Oh, plenty of it." That was just what we expected. The plow sole was sealed up all over the place. Some of the trees were wilting, though it had been quite recently irrigated. The trees

in one small area had made quite a promising growth, and we found that in that spot the owner had dammed the waste water up and carried it into the spaces between the rows, and there being but little if any hardening of the plowsole there, the trees had had a drink and were happy over it.

We recommended an immediate plowing, which we think the only method of getting the trees in good order for next season's service.

Now what about fall plowing? Why not? After about August 1 the fruit is set fast. There is no special danger of making it drop. If there is to be any time of the year when a good plowing is to take place, this seems to be the one when least risk will be taken. It gives the trees time to recover from the shock before the active growing season begins. New roots will form where those growing near the surface have been severed. There is danger of starting new growth, it is true, especially if it is done early, but what of it? We had better have some new growth to freeze during a cold night than have a starved tree exposed to the frost. The injury will be more apparent on the vigorous tree

but less injury of a permanent character is done. The sooner the orchard gets rid of the starved condition due to lack of water, the better. No orchard can thrive where it is in such a condition.

But why allow a plowsole to form? It is preventable. By plowing at least once a year and with the use of cover crops it will not form. It seems to us that fall plowing is the safest and it can be so arranged as to come in when a summer cover crop is to be turned under, and in getting ready to plant the winter crop. If this is done it is really not necessary, under ordinary conditions, to plow in the spring if the grower prefers not to take the chances of disturbing the root system in the spring, which is really a critical period in the life of the tree. A disking will put the winter cover crop under if persistently pursued, and with less disturbance to the root system.

There is, however, one precaution that should be taken in case of fall plowing. Should the orchard prove to be dry underneath, as is likely to be the case, a prompt application of water should follow the plowing in order to prevent the trees suffering from drouth. We have seen an entire crop of oranges drop from the trees early in December because of a deep plowing under such conditions.

There is another advantage in fall plowing. It takes much more time

to plow than it does to disk, and usually the teams are not so busy at that season as when the time comes to get the orchards cleaned up in the spring. A day saved in the spring is of great importance.

DO WE NEED LIME?

Do California soils need lime? This has been answered, "Yes"; it has been answered, "No"; and if the truth were known we presume both would be found correct, for some do, some don't. Anyhow, here are some interesting points taken from the summary of "Use of Lime in Soil," which is Lesson 148 of Cornell Reading Course for the Farm. The first page of the cover shows an ideal New York farm resting upon five supports, organic matter, tillage, fertilizers, soil moisture, lime. These are termed fundamental factors in the maintenance or improvement of crop producing capacity of soil. From the summary:

In its application to the soil, the term lime is used to exclude any caustic or carbonate form of the element calcium or a mixture of calcium and magnesium. In its more technical and restricted sense, as used by the chemist and the manufacturer, the word lime refers only to calcium oxide or a natural mixture of calcium and magnesium oxide, which is commonly known as lump, stone, rock, fresh, or quicklime.

The use of lime in some form is necessary to maintain the productive ability of at least three-fourths of the cultivated soil of New York state.

Lime may have many effects on the soil, as follows: It will neutralize active acid. It creates a condition in the soil favorable for the growth of many valuable crops. Its presence favors the growth of many of the legumes and promotes the use of the nitrogen of the air by those plants. It improves the type of decay of organic matter in the soil with the formation of humus. It supplies nutrients in the form of calcium and magnesium for the use of plants. It may improve the tilth of the soil. It improves the sanitary condition of the soil.

Plants, including those useful in agriculture, differ widely in their tolerance of an acid condition of the soil. Each plant has a rather definite range of tolerance of active acid and of active alkali in the soil.

Acid soils may be recognized in the following ways: By the kind of plants that thrive on them; that is, whether these are acid tolerant or require large amounts of lime. By their reaction to certain tests, as the litmus paper test, the Veitch lime water absorption test, the Truog test, the muriatic acid test and the ammonia water test.

The amount of lime required by the different soils in New York ranges from a few hundred pounds on the more calcareous soils in the middle part of the state to several thousand pounds on the very acid soils of the higher and more remote hill lands.

Limestone deposits are confined to the main valley regions of the state and are associated with the more calcareous soil areas. Marl is abundant under the muck in the swamp areas through the middle and especially in the western section of the state.

Suitable forms of lime for use on the soil are: Burnt or caustic forms, consisting of lump and ground quicklime, hydrated lime and air slaked lime. Carbonate forms of lime, including pulverized limestone, marl and mussel shells. Other by-product forms of lime containing a mixture of any of the preceding forms.

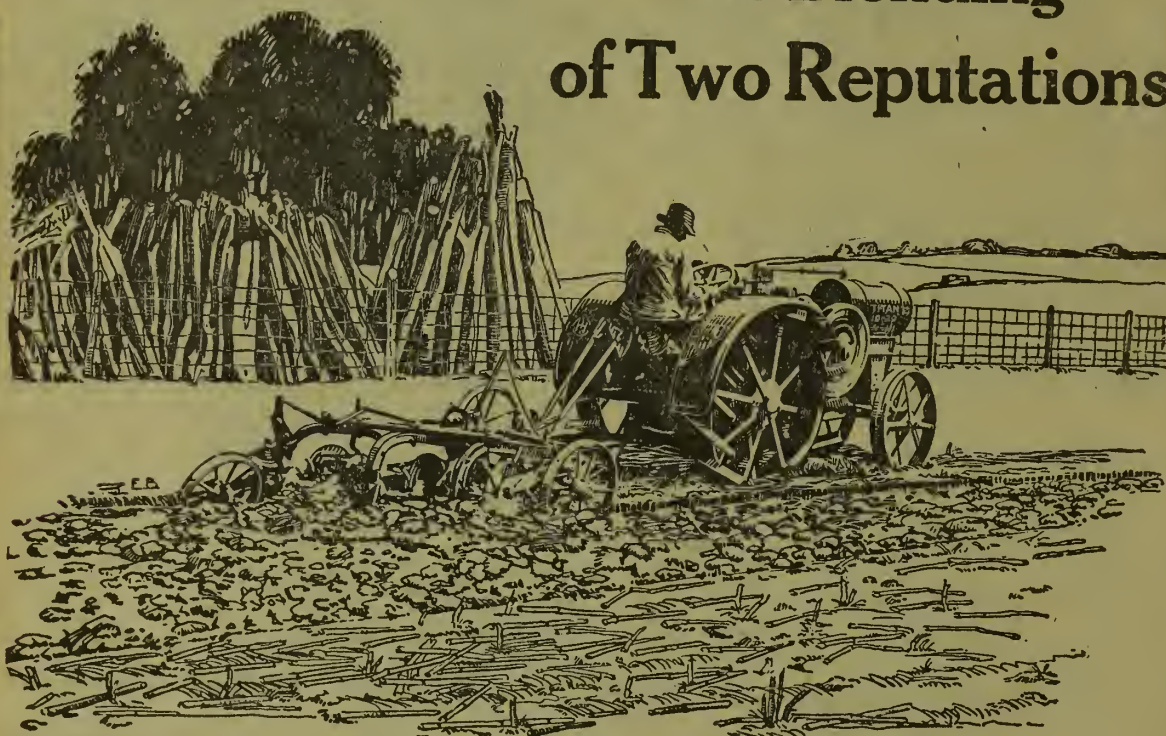
The finer a lime material is pulverized the more efficient it is in the soil. Until the particles are reduced to a fineness of 1/50 inch in diameter, the efficiency of lime in any form is very low.

Either burnt (caustic) or carbonate forms of lime are suitable for use on the soil. Caustic forms applied to the soil change in a very few days to the carbonate form, and thereafter have the same effect as if they had been applied in that form. They should be used in amounts to supply equivalent quantities of available oxides.

Lime is leached from the surface soil very slowly and is retained for many years in a form available to plants.

The amount of lime to be applied should be determined after consideration of the degree of acidity of the

The Blending of Two Reputations



AWAY back in the beginning of modern American farming the pioneer builders of farm machines began their work. For more than three generations the genius and skill of good plow makers at Canton, Illinois, ran parallel with the skill and genius of good farm machine builders now united under the name of the International Harvester Company.

From the pioneer days down to date these industries were intent on providing the farms with quality machines. They were ever on the alert for improvement and progress.

When, fifteen years ago, this Company began putting practical tractors on the farms, the Parlin & Orendorff plow makers began the development of a superior line of tractor plows. As the **International Tractors** developed into popularity, so did the

sterling worth in **P&O Little Genius** win its way into leadership.

It was fitting, therefore, that eventually the International Harvester Company should join together the extraordinary success of **P&O Plows** and **International Titan Tractors**. For a long period now these reputations have been blending. **P&O Plows** are a part of the International line. International Harvester Tractors and **P&O Plows** have long been working together efficiently.

Many thousands of new owners of these long-famous plows and tractors, who are turning soils with them in every corner of the land, know that this close and necessary association of power and plow is making for better plowing and more completely successful tractor farming. **P&O Plows** and **International Tractors** recommend themselves.

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We also have large quantity standard pipe and screw casing, pressure tested and guaranteed.

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Installations can be made in wells 10 in. or larger. Produce 300 to 4000 gallons per minute. Ask for Folder No. 4.

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soil and the degree of sensitiveness of the crop to an acid soil.

Frequent small applications are likely to be better than very large applications at long intervals. From one-half to one ton of burnt lime to the acre, or twice this amount of limestone, once in rotation of five years, is a fair application for the average soil. Strongly acid or very heavy clay soils should receive twice these amounts. A light, sandy soil, moderately acid, may give good results with only half these amounts.

The time and the method of application of lime are secondary considerations to the primary fact of its application. Thorough distribution in the soil is desirable. Application immediately after plowing will usually insure suitable distribution.

The use of a lime distributor is the most convenient method of applying lime. Some forms may be applied through the fertilizer attachment of the grain drill.

The sale of carbonate forms of lime for agricultural purposes comes within the scope of the law regulating the sale of commercial fertilizers. Each brand of carbonate lime must be licensed, and a guarantee must be given by the manufacturers of its content of calcium oxide and magnesium oxide.

FRUIT AND VEGETABLE INSPECTION

The fruit and vegetable inspection service by the state department of agriculture has been expanding greatly during the month of October and the prospects for still greater expansion appear to be most favorable. Orange shipments from Tulare County are just beginning and at the request of the shippers the standardization service has placed an inspector in that district to handle outgoing shipments. Ralph H. Gray, who has just closed out the grape deal at Lodi, began inspection work on November 8.

Orders for inspection have been placed for about 250 cars of Navel oranges.

In Southern California, as a result of cooperative agreement with the bureau of markets, standardized trade terms have been worked out for lettuce and tomatoes not only for the use of the inspectors in writing the certificates but also for the trade in quoting these commodities to Eastern buyers.

During the month a meeting was held at Brawley with the shippers of lettuce from the Imperial Valley. The trade terms adopted in the Los Angeles section were approved for use in the Imperial Valley and arrangements were discussed looking towards the inspection of the big Imperial Valley lettuce crop beginning about the first of the year by the state department of agriculture.

A meeting was held with the executive committee of the San Francisco Jobbers Association during the latter part of the month and the demand for carlot inspection at the shipping point is such that a man will be placed permanently on the San Francisco market in the near future who will certify not only to potatoes, onions and other vegetables moving out of San Francisco, but also to the large crop of broccoli, cauliflower and cabbage from the Colma section and artichokes from the Half Moon Bay district.

Inspection of about 200 cars of celery from the Antioch-Walnut Grove district has already been requested and as this stock is moving at the present time an inspector will be placed in this section at once.

The value of the inspection service has been attested to by all and it is interesting to know that of the 500 cars of Gravenstein apples inspected and certified to in the Sebastopol section, not a single car was rejected.—F. W. R.

Each of us works for the benefit of the community. Each family lends to the progress of the town, city or village. None of us can get away by ourselves to thank the Maker that we are not like other men, for we are like the rest of them.

Prof. E. L. Overholser of the state university is giving a series of pruning demonstrations in the prune orchards of Napa County.



Blast the Holes this Fall

Are you going to plant trees next spring? If you are, now's the time to shoot the holes for in the fall the ground is in prime condition for blasting.

And now's the time, too, to cultivate your bearing orchards by blasting around the trees with

HERCULES FARM DYNAMITE

If you want to know more about the ways in which explosives can help you with your work, send to the Hercules Powder Co. for a copy of "Progressive Cultivation". This 68-page illustrated book tells you how to plant trees, cultivate your bearing orchards, clear land, dig ditches, blast subsoil and do scores of other things with the help of explosives.

Every rancher or orchardist should have one of these books—and he can get it for the asking.



Hercules Farm Dynamite is for sale at leading Hardware and Implement dealers



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Gentlemen: Please send me a copy of "Progressive Cultivation".

I am interested in dynamite for _____

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Address _____

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Best quality Thompson Seedless, Emperor, Malaga, Muscat, Sultana, Cornichon and Zante Currant Grapevines; and two year old Wonderful Pomegranate trees and all varieties one and two year old Fig trees, for sale at prices which cannot be beaten.

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We can still supply a limited number of trees.
Write For Our Price List

The Fresno Nursery Co.
FRESNO CALIFORNIA

When Writing Advertisers Mention California Cultivator

GREAT CONVENTION WEEK AT
FRESNO

(Continued from Page 663.)

cation as to what constitutes "Grade A," or "Fancy Pack." In this the department of agriculture at Washington has made certain rulings which will be of value in educating growers, shippers and consumers. As a rule shippers are ready to follow regulations as to a standard. Reputation and dependable market will result in surer profit once general acceptance of standardization is secured. Many shippers have extended financial aid to state standardization. They are now paying five dollars per car for certificates, which are proving of great value. Fees for state certificate of standardization are now established at five dollars per straight car, ten dollars per mixed car and two dollars per half car. Full standardization has not yet been extended to citrus fruits, which, in a way, have their own standards. However, it is probable the state regulations will soon be issued and a regular standard established in

addition to regulations as to color and sugar content now prevailing.

The work of the Agricultural Legislative Committee was presented by the chairman of the committee, C. C. Teague, and by the executive secretary, R. N. Wilson. G. W. Pierce, chairman of the budget committee, also touched upon legislative needs and the discussion was led by Frank T. Swett. This committee has one big job between now and the convening of the state legislature in January. It is contemplating recommendations as to revision of the several enactments now affecting agriculture, the presenting of some entirely new bills, and, through invitation on the part of the university and other state institutions, is investigating budgets which it is hoped the coming session will pass. Several members of the committee anticipate spending days with the department of agriculture at Sacramento, investigating its needs, and with the university authorities at Berkeley.

Touching upon the subject of the budget of the department of agricul-

ture, Mr. Pierce said that the department is performing a valuable service of protection to the farmers, and that the present budget for the department is entirely inadequate. The proposed budget should not only be passed in full, but it should be increased, he said. He also advocated additional protection for the state forests.

In the transportation question one of the most vital points made in the convention was that regarding the ruling of the interstate commerce commission seriously restricting diversion privileges. This discussion led to instruction of the convention that communication be had with the interstate commerce commission requesting immediate reconsideration of this question. The following wire was sent by the director of agriculture to the secretary of the I. C. C.:

"Relative to the new national reconsigning rules becoming effective December 1, 1920, particularly to that portion affecting the fruit and vegetable business of California, I as presiding officer of the 53d State Fruit Growers and Farmers Convention, now

in session at Fresno, have been instructed and advised by resolution adopted in this body, that the contemplated rules and regulations would be inimical to the interests of these industries in California, since any curtailment of the present privileges of reconsignment would operate to obstruct the marketing of fruits and vegetables already seriously affected by the prevailing high rate schedule and shortage of rolling stock.

"Any regulations at present which will tend to prevent the widest possible distribution of farm products and to prevent the movement of crops to new and increased markets will be reflected in restricted production, which in turn vitally affects the well being of the farmers of California.

"In the consideration of the foregoing facts I earnestly urge suspension of these proposed rules or tariffs for the national diversion or reconsignment, and respectfully ask in the name of the Farmers and Fruit Growers Convention, here assembled in annual meeting, that a rehearing be granted. In order that California shippers and growers may be given an opportunity to present their case before your honorable commission."

The resolutions committee, consisting of Wylie M. Giffen, president of the California Associated Raisin Co.; H. C. Rowley, editor of the California Fruit News; Charles H. Bentley, vice-president and sales manager of the California Packing Corporation; C. B. Messenger, editor of the California Cultivator; George Farrand, attorney for the California Fruit Growers Exchange; H. C. Dunlap, secretary-treasurer of the California Prune and Apricot Growers; Frank T. Swett, president and manager of the California Pear Growers; H. G. Ryan, horticultural commissioner of Los Angeles County; George W. Pierce, president of the California Almond Growers, presented resolutions touching many phases of the state fruit growers activities and needs, all of which were unanimously adopted. Greatly condensed, these resolutions were:

1. Recommends purchase of lands by the federal department of agriculture, which are now being used by the department in a series of phylloxera and other investigations, but the leases on which expire within a short time. The results of these experiments will be lost if these lands are allowed to revert to private ownership. These sites are near Fresno and Oakville, Napa County.

2. Suggests that due recognition of the farming industry be given in the election and appointment of public officers and administrative officials in state and national affairs wherever their duties are germane, to the end that adequate representation of this important industry may be had in the councils of our affairs political.

3. Fully endorses Truth in Fabrics bill, now before the national congress.

4. Requests board of regents of the University of California to include an item of \$10,000 annually in its budget in order that the fruit products laboratories in Berkeley and Davis may increase the scope of their work, which is efficient but not sufficient.

5. Suggests that greater power be given state director of agriculture in fruit and vegetable standardization.

6. Whereas, the permanent prosperity of our nation rests fundamentally upon the welfare of the farmer and producer, and in addition the greatly increased costs of labor, transportation and materials in connection with the unprecedented fall in rates of exchange have combined to encourage great imports of lemons, raisins, figs, canned fruits, olives, olive oil, rice, beans, walnuts and almonds, that the ways and means committee of the house of representatives be petitioned to give special consideration to the necessity for revision of tariff law, and in connection with the tariff that particular attention be given to the need of maintaining international trade relations to the end that favorable consideration may be shown to countries which in turn show favorable consideration to the products of this country produced far in excess of domestic demand and which require foreign markets, such as the dried prunes, apricots, peaches, pears, raisins, canned fruits and canned vegetables of California. It is recognized that permanent foreign trade of value can only be developed in exchange of commodities, but it is believed that these

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should not be of competitive character.

7. Expresses appreciation of the work of Director Hecke, with resolution requesting state legislature to give favorable consideration to the budget as presented by the director.

8. Requests state railroad commission, in its hearings for the purpose of readjustment of rates for hydro-electric power, to give due consideration to the needs of agriculture, at present faced with rapidly declining prices on its products, and that in case of shortage power service for non-essential purposes be restricted and determined largely by the needs of agriculture.

9. Calls attention to the inadequacy of salary of county horticultural inspector, which is limited by law to \$3.50, and favors amendment to the statute which will allow the payment of proper salaries.

10. Refers to the work of Frederick Maskew as chief deputy quarantine officer of California, during whose administration not one major pest of horticulture or agriculture has gained a foothold in California, and "whereas, Mr. Maskew has now retired, it is resolved that the fruit growers of California express their appreciation of service rendered."

11. Reaffirms the action of the 52d State Fruit Growers which met in 1919 at Chico, and fully endorses the proposition of Col. Marshall, formerly chief of the U. S. geological survey in California.

Thanks and fullest appreciation was expressed to the people of Fresno, its chamber of commerce, the press and others for the courtesies extended during the convention.

The Banquet

Something over 200 fruit growers and their wives filled the banquet hall. An especial honor to the convention was extended by Governor Stevens, who was present and made an after dinner talk. In addition to the talks by Wylie M. Giffen, who acted as toastmaster, and the governor, addresses were made by Mr. Anewalt of the Santa Fe, Mr. Kelley of the Southern Pacific, with a bunch of funny stories thrown in by an entertainer.

It was unfortunate that the only available room for holding a convention was in the city auditorium, an immense building with capacity for thousands. As but few of the local producers found it possible to attend the convention, the few hundred who were there found themselves lost in the great structure. It was, however, a good convention, we believe above the average and attended by thoroughly representative producers of California.

It was often remarked during the convention that it was greatly to be regretted that local people gave so little attention to the magnificent program. Fruit growers within auto distance could readily have filled the great auditorium, and the interests of California fruit growing would have been materially advanced thereby.

The farm papers were all there, and the department will later issue an abridged account of the addresses and discussions, but the best effect of those conventions is lost where one is not in personal touch with them.

DEHYDRATION

A part of the state fruit growers convention and yet held under the auspices of the University, with E. M. Sheehan of the Grape Exchange presiding, was the convention of fruit dryers or, as expressed in the program, dehydration convention. Prof. Cruess of the university showed charts or rather plans, of artificial fruit dryers and referred to the specifications and gave particular points to be observed in the construction of a dehydrator.

Prof. E. R. de Ong discussed methods of control of dried fruit insects. He exhibited a mite which is becoming somewhat serious in infesting prunes. Some of these, confined in a glass jar, reduced a number of prunes almost to a powder. The principal method of preventing infestation of dried products by insects is through cold storage. It has been found that where dried fruits are stored in temperature of 40 to 50 degrees the insects are entirely dormant; at 35 to 46 degrees, held for a period of three months, all insects are killed, while if held at 22

to 33 degrees two months or less is sufficient to destroy all insect life.

Arthur W. Christie gave one of the most complete descriptions of the process of dehydration, different methods of building dryers and specific details of the handling of the fruit.

Workers who were responsible for much of the comfort of attendants at the convention were Fred P. Roullard, county horticultural commissioner, and Fred K. Howard of the service department of the Associated Raisin Company. These two men were pressed into service at the last moment because of absence from the city of chamber of commerce officials who had first planned the entertainment. Messrs. Roullard and Howard were ably assisted by Mrs. Roullard and Miss Scott, who acted as registration clerks and general information bureau.

CERTIFIED SEED POTATO GROWERS

President George H. Peters of the California Certified Seed Potato Growers presided at what he characterized as one of the most helpful conventions and the greatest advance step yet made by California growers. The meeting was held in conjunction with

the state convention and called out a large attendance of potato growers from as far north as Sonoma County and on the south from Los Angeles County.

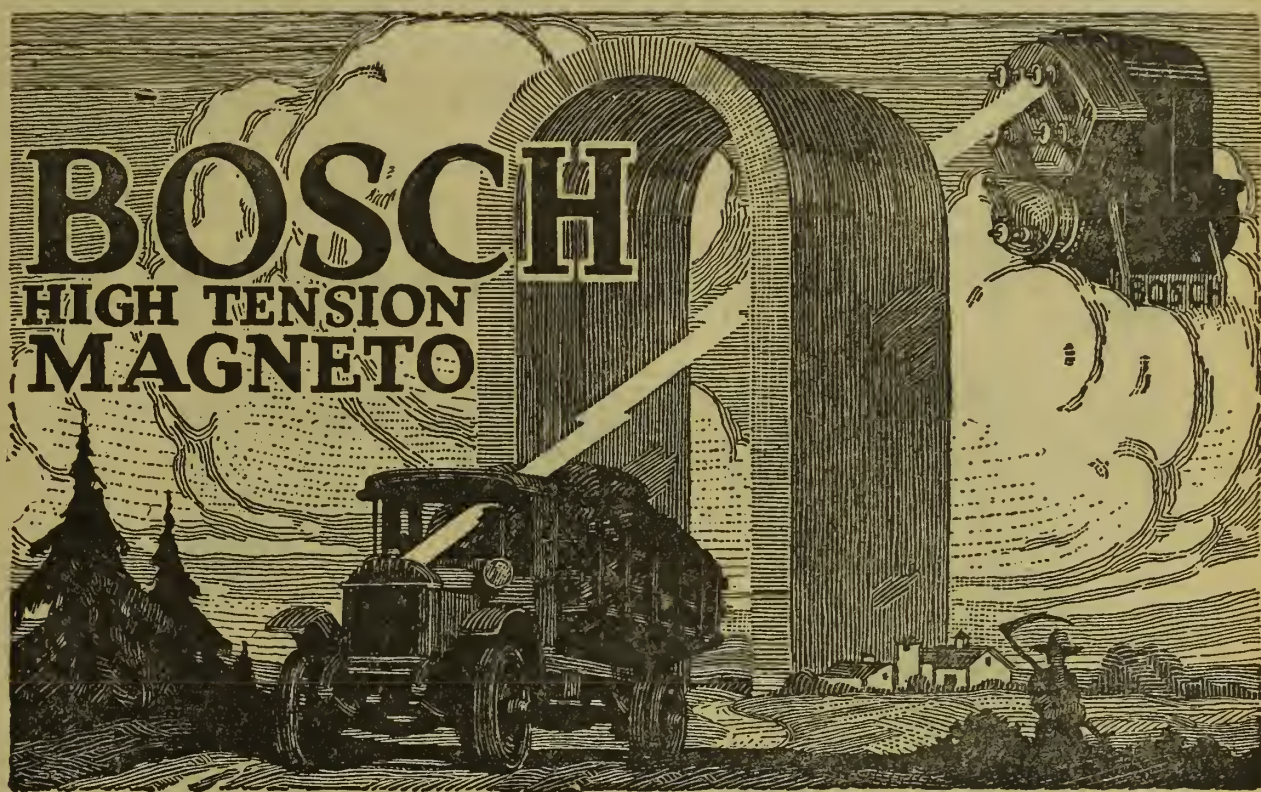
This convention, like others held in Fresno the same week, had to do with standardization more than any other one topic. A thorough discussion of federal standards was had and the question asked as to the ability of California growers to meet the requirements of government standards. It was the general opinion that these standards, together with market requirements and ability to secure fair treatment, would be more nearly realized under a reputation which California potatoes could secure through standardization. In fact, standardization was the principal subject under discussion rather than certification of seed. However, W. V. Shear of the department of agriculture, who has charge of seed certification, presented some most forceful object lessons in several packages of potatoes which he purchased on the Fresno market and used to enforce his claim as to the need of planting more dependable seed and of harvesting and marketing a more uniform standardized crop.

T. H. Lambert reviewed 20 years history of potato growing in Los Angeles County and endorsed standardization. The benefits of standardization were shown graphically by Messrs. Read of the state department, Truax of the federal department and others. It was generally considered that standardization of marketable potatoes could be more quickly accomplished in California than could standardization of varieties. "U. S. No. 1" will probably soon be a term which will be understood in California, and which, if generally followed by potato growers, will advance the price and reputation of California grown potatoes.

Resolutions were passed requesting the greatest watchfulness for Colorado potato beetle, which is near the boundaries of California both on the east and the north. Another resolution called attention to the meagerness of scientific investigation either by the federal department of agriculture or by the state and requesting this investigation to be taken up and the industry given deserved attention.

The prohibitive transportation rates granted by the interstate commerce

(Continued on Page 674.)



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Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Eucalyptus on Line

Along my line of fence eucalyptus trees have been planted. They were cut off some time since, but are now growing again. Some stand on line, some on my neighbor's side, and some on my side. My neighbor forbids me to trim the trees along my side or clear along the fence. The trees are taking the nourishment from my land for a distance of some 40 to 50 feet. Can I bring action for damages? How far from the dividing line must such trees be planted? Can I compel my neighbor to trim or destroy the trees or let me do so?—Subscriber, San Luis Obispo.

The trees along the neighbor's side of the line are his property. The trees the trunks of which are wholly or in part on the dividing line are the common property of yourself and your neighbor, the interest in each of which is identical, but which neither may

cut nor injure without the consent of the other. The trees upon your side of the line are your property, which you may grub out and do with as you please, being sure, of course, that they are actually upon your side of the line. There is no rule or law requiring trees to be placed at any distance from the dividing line, but you are entirely within your rights to dig a ditch along your boundary line, cutting off all roots, and it is probable that where you can show that such action is necessary to protect your own property that you might hold the neighbor liable for the cost of constructing such ditch, although there is no decision upon this point. The decisions have been directly conflicting as to whether or not the neighbor can be enjoined from permitting the roots of his eucalyptus trees to project in the land beyond his own. The better opinion is that he can be so enjoined. There is now a case pending in the appellate court which will undoubtedly determine the law in this state. The practical result of such injunction would be that the neighbor would be forced to grub the stumps, as he could not other-

wise control the growth of the roots.

Husband's Property

My husband has children by a former wife. We have no children. At the time of marriage he owned a ranch which has since been traded to good advantage so that his property is worth more than double as much as at the time of marriage. It all stands in husband's name. Is this community property? If the husband makes a will can he leave the wife less than she would legally have a right to?—Subscriber, San Fernando.

All property owned by the husband before marriage or that acquired afterward by gift or descent, with the rents, issues and profit thereof, is his separate property. Such separate property is absolutely subject to the disposition of the husband by will, in which the wife would have no interest. The wife does have an interest by law in one-half of the community property, which consists of all other property than the separate property of the respective spouses. This one-half interest in the community property the husband cannot affect by will. Whether the increase in value of the estate of the husband consists of any part of community property is a question of

the particular facts so that it would be almost impossible to give a definite opinion, but you should take the matter up with someone who can make a more detailed examination. The presumption would probably be that it is separate property and that if the husband dies leaving no will the wife would take one-third and the children two-thirds, but such distribution could be in any way changed by will.

Legal Name

On my second marriage, my son, who was very young, took the name of my second husband. He is now of age. Would it be legal for him to be married under my second husband's surname? If not, what course should be taken?—Subscriber, Pomona.

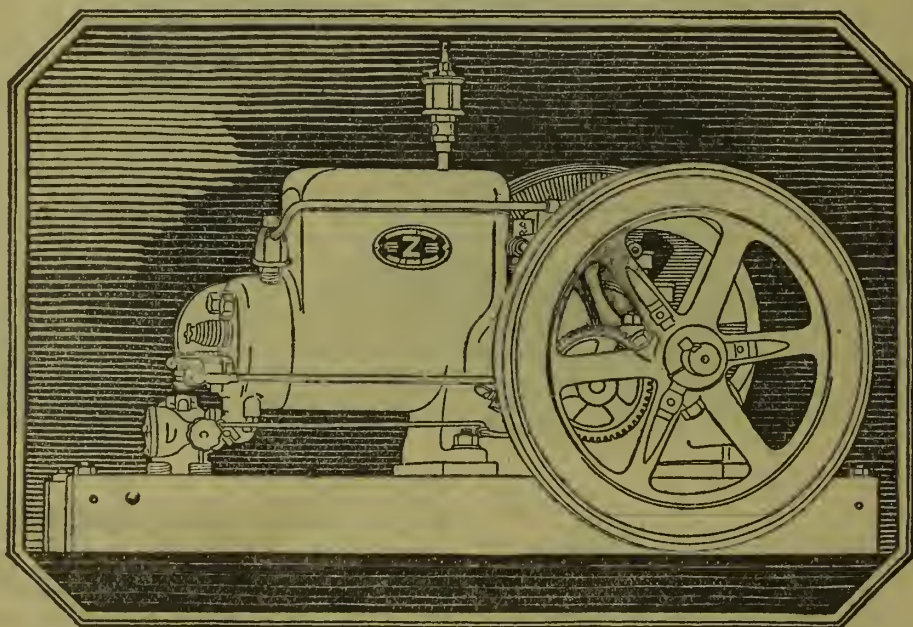
Under the early English common law, great importance was attached to the Christian name, as that was a designation conferred by baptism, while the surname was frequently a chance appellation assumed or given to the individual much as nicknames are now conferred upon people. In time, it became the custom for all males to bear the name of their parents, but there is nothing in the law prohibiting another name, if he so chooses. There is no penalty or punishment for so doing or any consequences growing out of it. The fact that such instances rarely occur may be readily accounted for by reason of the lack of any object to induce a man to change his name; by reason of pride in the name of his ancestors and that unless a man goes to a place where he is unknown, it would be difficult to have people refrain from calling him by the name to which they are accustomed. In the case of one who has adopted a different name, engaged in a business by that name, and has been known by that designation, there is no reason why he should not continue to use it, and it has been held that where a contract, agreement or obligation has been entered into or any grant made under that name, such name shall be valid and binding, as he has been as effectually named by the new name as that which he previously bore. Many instances of such change of name are noted, such as President Grant, who was christened Hiram Ulysses Grant; President Cleveland, who was christened Stephens Grover Cleveland; Senator Mitchell of Oregon, who was christened by the original surname of Hipple. He afterwards adopted the name of John H. Mitchell and was senator for three terms under that name for the state of Oregon. There are provisions whereby a person may petition the court for an order changing the name, but it would seem under the circumstances presented above that the name as adopted is in effect the legal name of your son.

FOREIGN TRADE, THE FARMER'S HOPE

By E. W. Wilson

The farmer's point of view towards making a profit out of the management of his farm is no different from the viewpoint of the merchant in the management of his store. Both are equally concerned with all the problems that make for better returns upon the labor expended and the money invested. American farmers are approaching the time when it will be imperative to find out the purchasers of their products. The clear mind will need the sharp pencil and the aid of the compass to chart the course that will produce the larger net income in order that the higher cost of production may be provided for. Without reference to the kind of agriculture he is interested in, he must be alive to every avenue of information that will aid in increasing pro-

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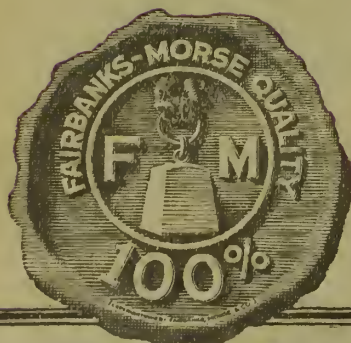
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duction and decreasing cost of unit production. Good soil is the starting point. Modern machinery, intelligent plans and dependable labor are first aids. The farmer's responsibility is not ended, however, by large production and low unit costs. Large crops, without a market, do not make a profitable investment out of farming.

To the merchant, buying without selling is not merchandising, and to



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the farmer, producing without knowing where he is going to market his goods usually means bankruptcy. Europe absorbs our surplus crops of cotton, corn, wheat and barley. Foreign countries located everywhere furnish markets for the surplus production of our canned and dried fruits, apples, oranges, raisins, lemons, etc. In fact, there are few articles that come from the soil whose price is not influenced largely or controlled entirely by foreign markets. Modern farm machinery, better fertilization of the soil, and a general improvement in the seed used have increased our agricultural products to the point where our prices are very largely dependent upon foreign demands. That being the case, every tiller of the soil in this country should make it his business to know where the particular market is located that influences the price of his products. He should also inform himself upon how these markets are to be reached as well as the cheapest way his products can be delivered to these points.

Unless the farmer becomes interested in these problems and makes his interest manifest to his congressman, our foreign trade will suffer in dollars and cents as the result.

BUILDING FEED

Farmers have for years wrestled with and solved more or less satisfactorily the various feed problems presented by their occupation. They have had to deal with the question of the balanced ration in hog feed, dairy cow feed, horse feed, chicken feed and even plant food.

And now appears on the farmer's horizon a scientist who tells him that even his buildings must be nourished; that a house, barn or outbuilding that is kept painted with good paint will last over a hundred years, whereas an unpainted one will fall to pieces in ten years; that a neglected building dies just as surely as a horse or cow that has nothing to eat.

The argument is logical from a scientific standpoint, and it behooves farmers to attend to the proper nourishment of their buildings, for we all know that the cost of rebuilding and of repairs is almost prohibitive nowadays.

EXTERMINATE THE RAT

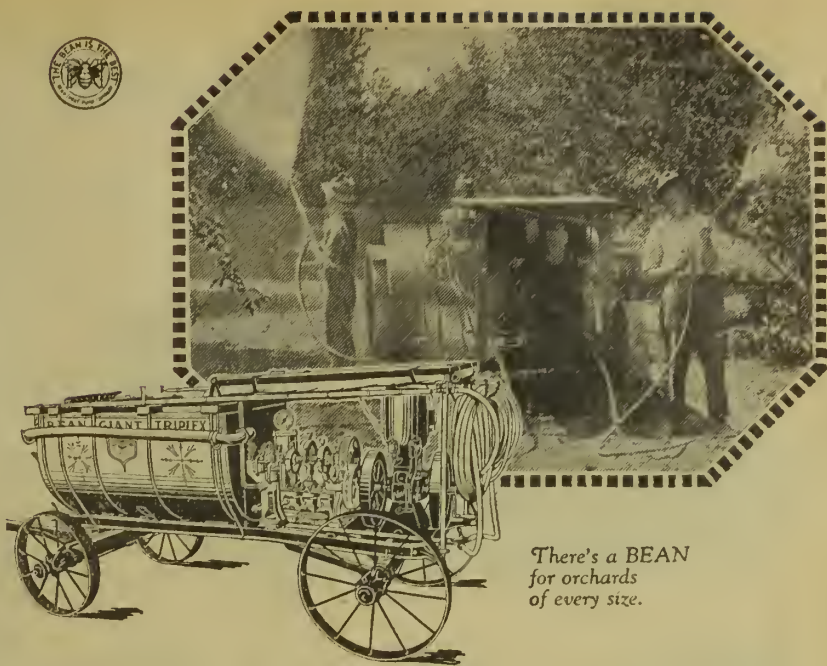
Untold sums of money are lost each year through the agency of rats. Rats are vectors of parasites that infest hogs, cattle and human beings. Rats also are carriers of fleas that communicate bubonic plague to human beings.

The time approaches when vast quantities of dried beans, rice, peas, cereals and grains will be placed in storage awaiting shipment or for future consumption. A comparatively small outlay for cement may save thousands of dollars worth of destroyed or spoiled foodstuffs lost through the ravages of rodents. Where ventilation is desirable in a storage room, protect the openings by setting coarse wire screen in cement to exclude rats and mice.

It is possible to make a city rat proof—why not the entire state?—B. A. R.

"The manufacturer of sweet cider is held responsible for the alcoholic content thereof, and in consequence he should so preserve or sterilize his product and market it in sterilized glass or other containers that the alcoholic content will remain within the limit fixed by law until consumed. Cider containing one-half of one per cent or more of alcohol by volume is regarded as an intoxicating liquor and the manufacturer thereof is required to procure a permit and give bond. Sales of such fermented cider may be made only in wholesale quantities of five wine gallons or more to other permittees and pursuant to permit of purchase, Form 1410."

Forest lookouts lead lonesome lives, but not devoid of excitement. At Mount Eddy in the Shasta region, recently, the United States department of agriculture forest service is advised, lightning struck the lookout station, tore a four foot hole in the wall and stunned the lookout, J. S. McClemons. He recovered just in time to save the house and his own life. Thirty-five lightning fires were caused in that vicinity the same day.



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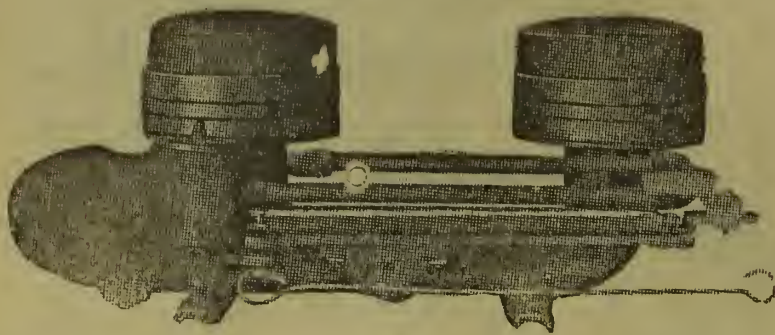
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CALIFORNIA NURSERYMEN

(Continued from Page 666.)

nurserymen and the least possible expense to the state. I admit that our present methods fall short of what is needed; this is simply demonstrated by the fact that no two states in the Union have similar methods of handling the problem, showing that agricultural police themselves are not agreed.

The ideal system, that of inspection of all shipments of nursery stock at the point of origin by inspectors responsible to the state, cannot be put into force in California at this time on account of the expense to which the state would be put. We must, for the present at least, content ourselves with an attempt to so modify our present methods as to cause the least inconvenience and loss to the nurserymen, at the same time, of course, retaining all our present safeguards.

The main criticism of the nurserymen against the system in force in California is, I believe, that while they exercise every care to ship only clean stock, some infested material occasionally gets by them, with the result that it is condemned at destination. What we must work toward is a reduction of the opportunities for such infested material to leave the nursery. This can be brought about by two lines of action, both of which to my mind should be carried out. First, the state department should give the nurserymen every assistance in the cleaning up and keeping clean of their nurseries. The state should be able to inspect at least the most important nurseries once a year, not for the purpose of issuing to the nurserymen certificates stating that the nursery is "apparently free from dangerous pests and diseases," but for the purpose of giving the nurseryman a complete survey report of the condition of his stock so far as pests and diseases are concerned, with specific instructions as to what should be done to clean up, and also should give the nurserymen direct assistance in particularly difficult cases. This, in itself, would in time very greatly lessen the number of condemnations at destination. At the same time the state department of agriculture should undertake a serious study of methods of treating nursery stock for disinfection, with the object of being able ultimately to recommend methods of treatment which would make it safe to ship nursery stock anywhere without inspection, the treatment, of course, to be done under official supervision.

Perhaps it will be advisable to raise the registration fee to, say, \$10 per year, the fund obtained to be used in making the survey reports and making recommendations for cleaning up the stock. Perhaps this work should be done at the request of the individual nurseryman, for which he would pay a fee covering the actual expense of the service rendered him. The other project, concerning the working out of better disinfecting methods, should, I believe, be supported by a special appropriation from the legislature.

Dr. J. C. Whitten, professor of pomology, University of California, read a paper entitled "Facts for the Nurseryman to Consider in Bud Selection," in which he treated of seedling varieties, bud varieties or sports, improvement by bud selection, and experiments with various stocks. Max J. Crow, Gilroy, gave a complete history of the organization, development and activities of the Nurserymen's Bud Selection Association of California, followed by a strong affirmative argument on the subject, "Is Bud Selection Worth While?" by J. H. Bones'ee, Kingsburg. Numbers on the program not listed herein were those spoken, for which no manuscript is yet available.

Business Again

New and unfinished business opened with the annual report of Secretary-Treasurer Kruckeberg, followed by reports of regular and special committees. Chief among the latter was that of the auditing committee. J. D. Meriwether, chairman. He advocated an increased reserve in the treasury and presented a new plan of contribution to that end, a sort of "gentleman's agreement." Thereunder nurserymen doing a business of \$10,000 a year were assessed \$10 per annum and

larger business in proportion up to a maximum of \$200, the agreement to cover a period of five years, to be retroactive to include the past season, the first assessment to be now due and payable. Sufficient signers were found within the hall to insure an income double that of any past year. The executive committee were instructed to have the Wickson papers of past and present published in book form at the expense of the association.

The committee on resolutions offered one on the death of C. W. Ward of Eureka, copies to be sent to his immediate family and business associates. One endorsed and commended the work and aid of Chas. Sizemore, traffic secretary of the American Association of Nurserymen. Another recommended to President-elect Harding the advisability and importance of having a Californian as secretary of agriculture in his cabinet. Last, but not most, a sweeping resolution thanking everybody and everything in any way contributing to the success of the convention or the entertainment and comfort of delegates and visitors. All passed without a protest.

The election of officers presented no ripple on the smooth and unruffled surface as the recommendations of the nominating committee found favor with all present. For the year 1921 the association will be governed by: President, Roy F. Wilcox, Montebello; vice-president, J. W. Barnicott, Newcastle; secretary-treasurer, H. W. Kruckeberg, Los Angeles. The executive committee are Fred H. Howard, Los Angeles, chairman; J. D. Meriwether, Ontario; J. E. Bergtholdt, Newcastle; E. B. Washburn, Pasadena; Max Crow, Gilroy. The 1921 convention will be held in Pasadena late in October. It will be the aim to join with the Avocado Association's convention so all may get a chance at the great avocado dinner and with the Pasadena Horticultural Society so that every visitor may see one of their famous flower shows. Some convention, boy!

LADIES AUXILIARY

The Ladies Auxiliary of the California Association of Nurserymen featured the most popular assembly of the week. Under their auspices the program was supplied by the ladies clubs of Fresno. This was held in the Woodman Hall, which was packed to the walls. The regular session of the auxiliary was presided over by Mrs. John S. Armstrong, the vice-president, the president, Mrs. John Vallance, not being able to attend. Officers elected for the coming year are: President, Mrs. D. W. Coolidge of Pasadena; vice-president, Mrs. John S. Armstrong, Ontario; secretary, Miss Rose Wershing of Ontario; treasurer, Mrs. Fred H. Howard of Los Angeles. Other members of executive committee are Mrs. T. R. Hills, Mrs. J. D. Meriwether, Mrs. R. M. Teague and Mrs. John Vallance.

GREAT CONVENTION WEEK

(Continued from Page 671.)

commission were given a rap in another resolution and a most respectful suggestion made that the commission revise the ruling so as to give producers opportunity to market this invaluable food crop.

Another resolution called for the appointment of a delegate to attend the budget hearing by the legislation committee, to be held in the department of agriculture, November 23.

The final resolution endorsed the U. S. standard of pack and urged its acceptance in California as soon as possible.

Mr. Shear reported that the certified seed of the state would this year aggregate about 35,000 sacks. Mr. Olson, one of the largest potato growers of Los Angeles County, felt that every encouragement should be given to the production of dependable, certified seed and to the securing of a higher reputation for California grown stock.

The canner's viewpoint and, in fact, some of the problems and difficulties confronting canneries, were given in an address by Charles M. Bentley, vice-president and sales manager of the California Packing Corporation of San Francisco. Mr. Bentley said:

In order to have a clearer understanding of the situation today, as affecting all growers of apricots,

peaches, pears and other canning varieties, whether said growers actually sell to canners or not, it should be borne in mind that prior to the war California was exporting about 25 per cent of her canned fruit. This went chiefly to Great Britain as nearly all other countries of commercial importance maintained high import duties, in many cases prohibitive tariffs. During the war the demands of our own army and navy and of the allies was greater than the supply. Commercial trade was to some extent cut off. Production was encouraged and greatly increased. Following the armistice the commercial trade, which was largely restricted during the war, reopened. Domestic as well as foreign demand was heavy. 1919 witnessed an active market with speculative features and the entire pack of canned fruit was absorbed. Similar conditions, so far as domestic markets are concerned, continued well through the earlier half of 1920 until after the pack of the current year had been largely sold. Foreign buyers who bought heavily in 1919, some anticipating the opening of a market in Germany, some purely speculative, have not operated this season, partly because of a surplus carried in the foreign markets and partly because of the unfavorable prevailing rates of exchange.

Out of sympathy with the market conditions the pack has been restricted in California as well as elsewhere. The coal and railway strikes of last winter and spring caused a shortage of tin plate and a consequent shortage of cans which further restricted operations. Generally speaking, the wholesale buyers have bought very conservatively, anticipating a decline in prices. Their activities have been further restricted by the fact that the enormous increased costs for all goods they were carrying required more capital and more funds than many wholesale grocers have at their command. So there is some unsold stock in California, but not so large as to give any alarm if the normal consumption of the winter and spring develops and wholesalers do anything like the normal business.

These conditions confront the industry as a whole, whether canneries are operated in a cooperative way by growers or by the ordinary corporation. If conditions are prosperous there is no reason why a cooperative cannery should not prosper if operated by experienced people. The mere fact that the people controlling the business are fruit growers is no disadvantage, assuming that they permit the business to be run on its merits; nor, for that matter, is it any advantage. In the ordinary enterprise, the stockholders hazard capital; in the cooperative enterprise, the growers hazard returns on their crops. In either case the success or failure will be determined by the value of the location, the management and general trade conditions. Cooperative enterprises among growers have rendered valuable service to the producers of many of California's products. In most of these activities the producer turns over to the organization a product which requires very little added expense to prepare it for market. In the canning business, however, the raw fruit is comparatively a less important item of cost. In some varieties, in normal times, the labor costs more than the fruit; often the can costs more and the sugar also. So the cooperative cannery should be regarded by the grower from the point of view of making an investment, rather than as a means of finding a profitable market for his crop. This for the simple reason that for \$100 worth of fruit there must be about \$400 available for labor, cans, sugar, other materials and expenses. In recent years any cannery should have prospered, but, as we come into a period of falling prices and deflation, only those which are favorably located and economically administered can be profitable, whether they be cooperative or otherwise.

The period of deflation is well advanced in this and other countries. It will bring serious losses everywhere, and while we are likely to hail reduced prices with a cheer, so long as they relate to other people's goods, and while we recognize that such a period is not only inevitable but even desirable, we must also remember that the process of falling prices is even more dangerous than the process of rising prices. The latter hurt people

as consumers, while falling prices hurt people as producers and merchants. If business is unprofitable there will be curtailment of enterprise, decreased supply and unemployment. Those who have incurred debt for what they bought at high prices will suffer, but their creditors will also suffer. The poor merchant is likely to hold his stock around his cost figures in the hope of avoiding loss. He gets little business and is thrown into bankruptcy. The wise merchant gradually takes his loss, continues doing business and ultimately recovers. As someone has said, "It is better to climb down, than to fall down, or be thrown down."

This is the market condition, which producers, manufacturers and merchants generally are facing. The falling prices make the farmer less wealthy on paper than he thought he was. The other factors are similarly affected and it is necessary that this process should continue until our price levels are put on a competitive basis which will enable us to sell surplus farm and factory products in foreign trade. The process will involve unemployment, reductions in wages and cost of materials, but for the welfare and prosperity of the nation it is devoutly to be hoped that prices for farm products will never fall below the point where the farmer is encouraged to produce.

The most serious problem confronting the fruit industry is that of securing adequate and profitable markets. Domestic markets may be stimulated, but in the face of the impending increase in acreage, foreign markets must be secured and developed, not merely for the canned fruits, but even more for the dried prunes, apricots and pears.

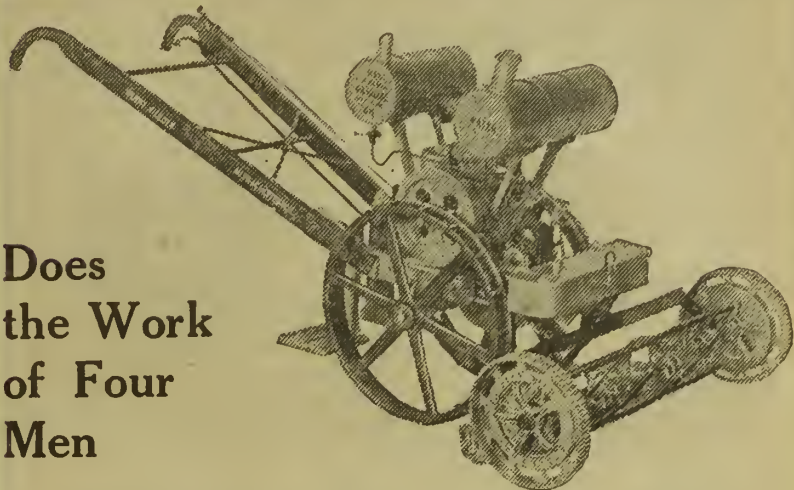
Mention has been made of the important part foreign buyers have played in establishing a profitable market in the past and particularly during the war. It should be remembered by the prune growers that Germany was a very large buyer before the war. More than 50 per cent of the prunes and dried apricots were exported even before the war. In 1913 Europe bought nearly 70 per cent of our dried prune crop and more than the entire crop of dried apricots, taking some 1912 carryover. Heavy purchases were made in 1919 by British and Scandinavian buyers; very little has been bought by them in 1920.

One of the important factors in preventing buying is the much discussed and little understood question of exchange. The foreign buyer has had to reckon on what he regards as our high prices, but when he comes to the actual paying for the goods in our money the British merchant finds that he will have to pay over 30 per cent more to transfer his funds into those of this country.

If you went into a shoe store and saw a pair of shoes listed at ten dollars and offered to buy them, tendering a ten dollar bank note, and the shoe dealer said, "No, I do not want that kind of money; I want gold coin," you might try and get gold coin at the bank. Suppose the bank said gold was at a premium and you might have to pay \$13 in bills to get the \$10 in gold. Your shoes would cost, not \$10, but \$13. This very crude illustration may give you some idea of the predicament of the foreign buyer who might be satisfied with a quotation of 15 cents per pound on prunes, but would refuse to buy when he discovers that to get the 15 cents in United States coin he will really have to pay 20 cents. If you found a shoe dealer who would sell the pair of shoes of nearly equal quality and who would take your bank notes in payment, he would be likely to sell you the shoes. So the foreign buyer of canned fruits is being tempted to buy Australian, French, Canadian and Spanish canned fruits because his money is worth more in dealing with those countries. This condition is directly affecting every grower of apricots, peaches and pears, whether he sells to the canner, or dries his fruit, or ships fresh to the market. In the case last named, he is likely to have more competition with other similar fruit, which might have gone to the canner or drier had there been a better demand for such products. So we are all concerned for the development of foreign markets to take care of the increasing production in our state.

(Continued on Page 691.)

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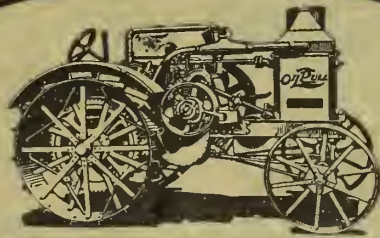
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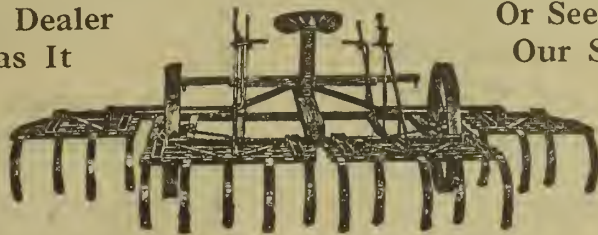
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Farm Bureau Federation Convention

Secretary Coverdale of the American Farm Bureau Federation announces that plans are rapidly shaping for what promises to be the biggest gathering of agricultural leaders ever assembled, December 6, 7, and 8, at Indianapolis.

The keynote and central idea of the convention is to be the formulation of a national agricultural policy. President Howard has invited a formidable array of the nation's agricultural leaders to work together in formulating such a policy, and speakers of national reputation have been secured to discuss various phases of our national agricultural problems from their respective viewpoints.

Sir Auckland Geddes, the British ambassador, will discuss international relationships with reference to agriculture. Other speakers are Secretary of Agriculture Meredith, Herbert Hoover, former Secretary of Commerce Redfield, Henry Wallace, Chief U. S. Bureau of Roads McDonald.

Delegates from at least 37 states will be present and advance reservations indicate that a very large number of visitors from near by and even distant states will be present. In addition the various commercial organizations, private business houses and others vitally interested in any broad, concerted action taken by agriculture will have representatives present.

Some of the larger problems to be included in the discussion of policies are tariff, transportation, taxation, labor, credits and financing, marketing, collective bargaining, land tenancy, governmental policies, merchant marine and foreign markets policies, and

national legislative measures. Numerous local summaries of national agricultural policies have been attempted but since the close of the war and its attendant readjustments many policies must be modified and new policies formed, and it is believed that the American Farm Bureau Federation with its more than 1,000,000 members, representing not only the very cream of the farming interests of 33 states, but the agricultural colleges, county agents and similar groups of recognized leaders as well, is the logical and proper body to formulate such a declaration of policies and initiate the necessary machinery for putting them into effect.

The farm woman's part in the program will not be neglected. Mrs. J. C. Ketcham of Michigan will take a prominent part in this feature of the convention.

A considerable portion of the time during the convention will be given over to discussion of business matters having to do with the organization, membership, program work and general administration of the affairs of the federation. Since only a single year has elapsed since the original meeting of the federation was held, it is expected that several important amendments to the constitution will be adopted.

The new packing house of the Grand View Heights Citrus Association of Tulare County has all equipment in readiness for its first season's run on Navel oranges. The management expects to handle 100 carloads.

RICE IRRIGATION

Rice growers who may be able to dispose of their 1920 crop and be in position to grow another crop in 1921 will find interest and information in "Rice Irrigation Measurements" by Frank Adams. It is Bulletin 225 of the experiment station of the college of agriculture and may be had by writing the station at Berkeley.

In 43 full season measurements of the amount of water used in rice irrigation in Sacramento Valley, 1914 to 1918, the total depth of water applied ranged from 3.91 to 18.70 feet, and the net depth, after deducting measured or estimated waste, ranged from 3.91 to 13.43 feet.

In 32 full season observations on clay and clay adobes of the Willows, Sacramento, Stockton and Capay series the total depth of water applied ranged from 3.91 to 10.09 feet, the net depth from 3.91 to 9.11 feet, and the average depth from 3.94 to 5.72 feet.

The average net depth of water applied to 22,404 acres embraced in the 43 full season observations mentioned was 4.89 feet. Of this area 21,419 acres was clay or clay adobe of the Willows, Sacramento, Stockton or Capay series.

A four year record of use on 39.5 acres of Stockton clay adobe near Biggs, well prepared and well irrigated, showed a range in depth of water applied of 4.27 to 4.87 feet and an average of 4.53 feet.

An annual depth of 5 feet of irrigation water for rice is sufficient for the principal rice soils of Sacramento Valley, viz: for the clays and clay adobes of the Willows, Stockton, Sacramento, Capay and Yolo series. Pervious loam soils require an excessive amount of irrigation water and from a water

standpoint are not suitable for rice growing.

The use on individual fields of one cubic foot per second of irrigation water to 30 to 40 acres during the first flooding after seeding is not excessive. Owing to the fact that all growers are not ready for the first flooding at the same time, canal diversions at this rate are not necessary, although probably as much as one cubic foot per second to about each 50 acres served is desirable during the period of initial flooding. The seasonal use averages about 65 acres per cubic foot per second.

About one-third of the water applied to rice fields is lost by evaporation from the surface of the standing water during submergence. This factor in the duty of water cannot be controlled.

A six year series of experiments at Biggs, duplicated for two years near Norman, generally show maximum rice yields from submerging rice fields six inches deep beginning 30 days after emergence of the plants above ground. An exception to this was found on the alkali soils in the Norman plots, from which the best yields were obtained from submergence beginning 15 days after emergence.

The advantage from submerging rice fields six inches deep beginning 30 days after emergence on all but alkali land, when compared with the results from submerging to a less or greater depth or beginning submergence earlier or later after emergence of the plants, may not average sufficient to offset the difference in cost of irrigation by the different methods.

Constant movement of irrigation water through the rice checks during the period of submergence is necessary only where the soil contains alkali in sufficient quantities to affect the plants.

Keeping rice fields only moist or "muddy" throughout the growing season gives reduced yields of poor quality.

Fluctuating depth of submergence may prove beneficial in rice irrigation, but experiments to date have not fully demonstrated this for California conditions.

It is imperative that ground water and rise of alkali be controlled in California rice fields both by confining rice growing to the heavier, impervious clays and clay adobes, and by thorough and adequate drainage facilities embracing the entire areas affected or likely to be affected.

A prime factor in control of water grass in rice fields is the keeping of banks of canals and ditches, principally lateral and field ditches, entirely free of this pest by pulling, cutting or pasturing before the seed is formed. An almost equally important factor is the keeping of drains and sloughs free of both water grass and tules.

LOSSES CAUSED BY RATS

Entomologists of the department of agriculture of the University of Minnesota say that Minnesota's financial loss from the depredations of rats is from \$10,000,000 to \$12,000,000 annually. State directors of agricultural extension work have estimated the losses in Montana at from \$15,000,000 to \$20,000,000; in North Dakota at \$6,000,000 or more; in Kansas \$12,000,000; in California \$20,000,000 and in Wyoming and Nevada at from 10 to 15 per cent of the value of all crops.

In addition to this monumental loss of food products, rats spread disease, and efforts are being made by our state and city boards of health to reduce the number of these dangerous and destructive animals.

THE MULLET FISHERIES OF THE SALTON SEA

Developing a profitable fishing industry and marketing ocean food fish from a brine pickled pool of constantly varying salinity and water levels, far below the level of the oceans and in the midst of a blazing desert, is an accomplishment of man that is worthy of attention. This newest of American fisheries, which has recently commanded the attention of both state and federal scientists, is in the Salton Sea of Southern California, where the industry has grown up under some of the most adverse and ex-

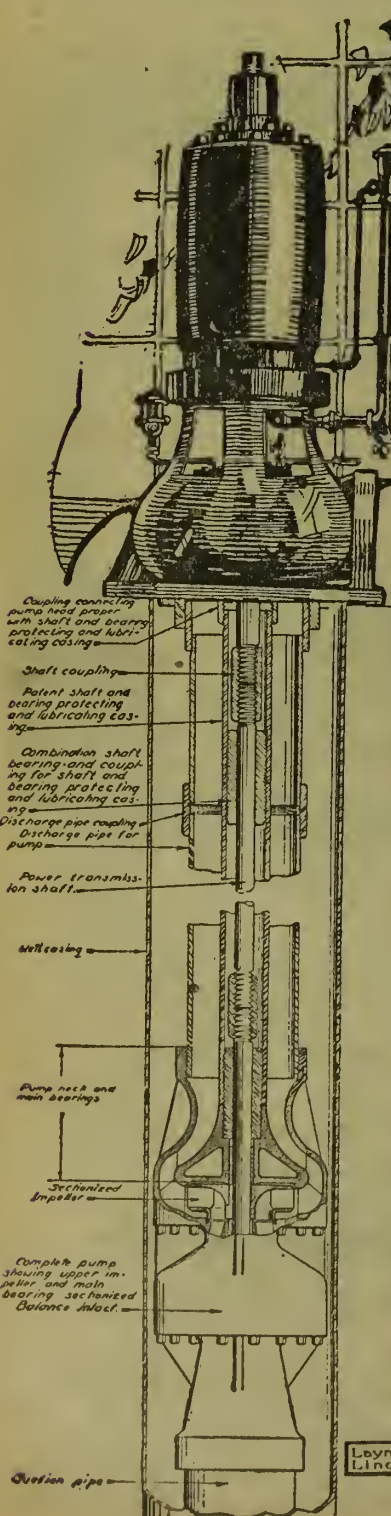
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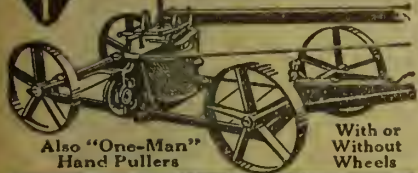
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The Salton Sea is one of the most
mysterious of all the world's inland
brine pools. With its surface at this
writing 257 feet below ocean level, and
its waters at times approaching six-
fold the salinity of sea water, it has
often been termed the Dead Sea of
America. It is the lowest body of
water on the face of the western
hemisphere and the lowest on earth
with the exception of the Dead Sea
of Palestine.

Little is known of the fish life of
the Salton Sea prior to the last break
in the Colorado River dykes. It is de-
finitely known, however, that at the
time the sea was something like six
times as salty as ocean water, and this
fact alone would have precluded the
possibility of fish living in its waters.
In 1905 the river overflowed its banks,
cutting two channels to the Salton
Sea which are now known as the New
and Alamo Rivers. The flood carried
160,000,000 cubic feet of water which
it emptied into the Salton Sea, fresh-
ening the water, raising its level and
greatly extending its area.

Several years after the flooding of
the Salton Sea the salt water mullet,
a desirable food fish of the identical
species found in the Gulf of California
and other Pacific waters from Mon-
terey southward, made its appearance
in the sea. Two theories are advanced
by scientists to account for the occur-
rence of the fish. The first is that
they had swum from the Gulf of Cali-
fornia into the fresh waters of the
Colorado River, and were carried down
into the Salton Sea by the flood. This
theory however does not seem ac-
ceptable inasmuch as the fishermen
declare there is no authentic record
of the salt water mullet swimming up
into the fresh water of streams. The
second theory, and the more plausible
one, is that the Salton Sea was stocked
with fish by the white pelicans. These
great birds inhabit the sea by tens of
thousands, rearing their young on the
several volcanic islands and making
daily excursions to the Gulf of Cali-
fornia for their food. Isolated moun-
tain lakes are known to have been
thus stocked with trout, and probably
the fish of the Salton Sea were car-
ried there in the same manner.

In a short time a considerable col-
ony of fishermen began to appear on
the shores of the Salton Sea. Experi-
ments by several large packing plants
at Los Angeles with the canning of
mullet also met with a high degree of
success. Due to the terrific summer
heat of the Salton basin, the tempera-
tures often going as high as 125 de-
grees, the fish are iced aboard the
fishing boats as soon as they are taken
from the water. The fishermen work
in canony tonned boats and in the
water as much as possible, for the pur-
pose of keeping cool. The fish are
landed on Mullet Island, where the
receding of the sea has made possible
the building of a motor road connect-
ing it with the land. They are then
trucked to Niland on the Southern Pa-
cific line for shipment to the canning
plants and markets.

Just what the future of the Salton
Sea fishing industry will be no one
can say until an accurate water sur-
vey and analysis of the water is made
from samples taken from various por-
tions of the lake and extending over
a period of years. At present the sea
has a maximum depth of about 45 feet
and it is already well known that the
salinity varies at different depths as
well as in different localities, accord-
ing to the distance from sources of
fresh water supply. If the Salton Sea
should ever again attain the degree of
salinity that it possessed prior to the
flood of 1905, it is probable that the
fishing industry would be automatical-
ly terminated by the perishing of the
fish. The fishermen and old residents
about the sea, however, scoff at the
idea that the sea will ever go dry, or
even recede to the point of increasing
salinity beyond the endurance of the
fish. They believe that the water is
now holding its own against evapora-
tion losses. Last year the sea receded
four and one-half feet and then, with-
out any apparent reason, rose again
two feet. With the constantly increas-
ing irrigated area of the Imperial Val-
ley and the development of additional
irrigation projects along the Colorado
River, an ever increasing volume of
overflow water will be drained into
the Salton Sea to freshen its waters
and maintain its level.—John Edwin
Hogg in Popular Mechanics.



The **FRUIT GROWER** says—
"for tree planting
genuine **GIANT** is
most satisfactory"

The Giant Farm Powders—Eureka Stumping and Giant
Stumping—loosen and pulverize the soil instead of packing it
and throwing it high in the air.

Western fruit growers have used hundreds of tons of these
Giant Powders for blasting beds for trees. They have proved
that blasting with genuine Giant Powders provides free
drainage, increases moisture-storage capacity and insures
vigorous growth and early bearing.

"My trees planted three years ago in beds blasted with Giant
Powder are 75 to 100 per cent bigger and better than the
trees that I planted in dug holes," writes H. H. Smith,
Oregon City.

You will enjoy reading "Better Farming with Giant Farm Powders." It de-
scribes all the new and money-saving methods of blasting beds for trees, sub-
soiling established groves and orchards, clearing land, ditching, etc. Write
for it now.

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orders for 1921 delivery. Place your order early and
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Can supply A-1 budded citrus stock one and two years old, wholesale or
retail, in any quantity.

Selected Buds From Fruit Growers Supply Co.

Honda Sour Seed Bed Stock for sale. Trees planted and guaranteed on
contract.

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Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
 December 1, H. E. Vogel, Fresno.
 December 2, Consignment Sale, Tulare.
 December 16-17, Consignment Sale, Sacramento.
Poland Chinas
 February 17, Bassett, Ross & Crawshaw, Hanford.
Percheron Horses
 February 17, M. Bassett, Hanford.

The Brant Rancho at Owensmouth is anticipating a class leadership on the record now being made by the senior two year old Guernsey, Rose of the Rancho, who is going at the rate of 710 pounds of butter fat for the year, with only a few days more to go.

R. A. Chapman of San Diego has received the Poland China boar pig, Renowned Liberator, which he bought in the Maple Way Farm sale. This youngster, being by Liberator, is a half-brother to this year's grand champion of the National Swine Show.

The Italian Vineyard Co. has purchased all the breeding herd of Berkshires of the Sandercock Land Company of Sacramento.

At the Diamond Bar Ranch at Spadra it has always been the opinion that lousy hogs cannot put on pork as cheaply as clean ones, and in order to combat the parasites concrete wallows which are kept filled with a solution of water and sheep dip are in all the large pens. Since this method has been adopted there has not been a lousy hog on the place.

The wisdom of keeping hogs clean has been clearly shown by some recent tests made by the United States department of agriculture. Three experiments, each covering a period of three months or more, were conducted, and from 20 to 30 hogs were used in each. In one experiment it cost \$1 a hundred pounds of pork more to feed the hogs that had lice than it did those that were free from parasites. In another, the cost was \$1.50 more, and in the third \$2.94 more,

and the hogs that did not have lice weighed 3,150 pounds, although the total amount of feed consumed by the latter group weighed only 203 pounds more than that consumed by the animals that had lice.

Announcement has just been made that Owen Duffy, manager of the Napa state farm, has purchased the aged Hereford bull, Beau Rosemont, from Chas. Rule, Duncan's Mills. Beau Rosemont was sired by Dictator Fair-



A Remarkable Litter of Spring Pigs

This litter of Durocs by the Ace of Pathfinders, and shown by the Diamond Bar Ranch, won 1st young herd, 1st breeder's young herd and 1st produce of dam at Sacramento, Los Angeles and Riverside as well as the futurity prizes at all three shows. The individuals were also prize winners in their classes.

showing that the hogs with lice consume more protein feed and that they cannot make up for the blood sucked by the parasites. Fifteen hogs with lice weighed a total of 1,167 pounds at the beginning of the experiment, and 15 hogs without lice weighed 1,025 pounds. At the end of the experiment the lousy hogs weighed 2,872 pounds

and was purchased by Mr. Rule in 1917 after he had been shown successfully by Col. E. H. Taylor of Kentucky. As a two year old he was first in class and senior champion at Des Moines, where he defeated the noted \$31,000 Ardmore; senior champion at Indiana and Illinois; first in class at Misouri, the American Royal

and Texas; fourth at Chicago. At the last California state fair he was first in the class for aged bulls.

A meeting of the California Holstein Breeders Association was held at Sacramento the evening of November 10. Announcement was made that the Holstein had been selected as the official dairy cattle breed to be raised by the settlers on the Delhi colony. Plans were discussed for developing the Australian market and extending the influence of the breed generally. At the meeting it was decided to accept members from Nevada. Following the meeting a smoker was given by Messrs. Lewis and Hill, owners of the Toyon Farm Association.

In a recent letter from Professor Gordon H. True, who is at present in the Hawaiian Islands, he says: "California livestock breeders will be interested to know that at the recent Maui County fair California bred livestock gave a splendid account of themselves. Joe Dulcinia, the Hereford bull that Mr. Rice purchased last fall from W. J. Bemmerly of Woodland, was made champion over a number of high class bulls. An Ayrshire cow from McFarland's Steybrae herd at San Mateo was champion for that breed. A Napa state hospital cow and a Morris bred bull were the Holstein champions. A Berkshire boar bred at the university farm was champion of his breed."

G. Ellinwood Finnell, one of the owners of the Finnell Stock Farm, Galt, reports that they have just purchased an aged Hereford bull to place at the head of their herd. The bull is a ten year old son of the noted sire, Domino, and is out of a richly bred Anxiety dam. He was purchased from a Kansas breeder and it is stated that he has proven himself a most prepotent sire.

At a meeting of the California Shorthorn Breeders Association held at San Francisco, November 10, Senator Benj. F. Rush of Suisun was elected president and a new board of directors set up. The association is making plans to engage the services of a fieldman to look after the development and promotion of the breed in this territory, and it is expected that an early announcement will be made of their selection. Plans were made for holding a consignment sale early next spring.

C. N. Hawkins of the Pacheco Cattle Company, Hollister, reports that their show herd of Shorthorns that is now making the Northwest circuit is meeting with marked success. At Lewiston their senior yearling heifer, White Pacheco, won her class and their senior heifer calf, Sultan's Dale, was junior champion. They also were first on their young herd and calf herd. At the Spokane show the Pacheco colors were out in front in the same order except that the calf herd was second.

Howard Vaughn, who has recently moved to this state from Iowa, has purchased a ranch just north of Dixon and is making his plans to establish a herd of Shorthorns. Vaughn was a well known breeder of Shorthorn cattle and Chester White hogs in Iowa.

CARE OF DAIRY UTENSILS

Last week a dairyman asked my opinion of a milk cooler he had recently purchased from another dairyman who had not had occasion to use it for some time. He told me that his friend had purchased it new less than a year ago. Examination showed that the cooler was badly corroded and would not be fit for use until it had been retinned. Such occurrences are not rare. Dairy machinery and utensils often are left to rust and corrode so that when they are needed they are not fit to use.

A cooler or separator bowl that is not going to be used for a while should be washed and dried, then thoroughly coated with grease, wrapped in paper and stored in a dry place. The interior of cheese yats, pasteurizers, etc., likewise should be coated with grease and covered to exclude dust. Milk cans and buckets should not be used for boiling water or handling waste skim milk. A little care in these matters will avoid considerable loss, as

FOURTH TULARE SALE

70 Registered Holsteins 70

67 Females---3 Bulls

Sales Pavilion, Tulare, Cal. Thursday, December 2, 1920

This offering includes a large number of young cows and heifers of more than ordinary merit, and made doubly attractive by the services of the great sires which they carry, these bulls including both short and long time record breeding. In the list will be found:

A SPLENDID COW that has just completed a yearly record of 745 lbs. butter from 17,087 lbs. milk. She sells heavy with calf to a 32 lb. son of King Mead of Riverside.

A 24 POUND daughter of Colantha Sir Pontiac Aaggie that has just finished a yearly record of 653.2 lbs. butter. Due to calve on December 7 to a 32 lb. son of King Mead of Riverside.

A DAUGHTER of a 646 lb. yearly record 2 year old. Dam now on test again and making nice record as a 3 year old.

A 3 YEAR OLD that has just completed a yearly record of 640.6 lbs. butter. She sells heavy with calf to a 32 lb. son of King Mead of Riverside.

A 21 POUND granddaughter of King of the Pontiacs, now fresh.

A 19 POUND 3 YEAR OLD, bred to a 32 lb. son of King Mead of Riverside.

A DAUGHTER OF KING KORNDYKE SADIE VALE, out of a 23 lb. 4 year old granddaughter of Pontiac Korndyke.

FOUR YOUNG COWS bred to a 31 lb. son of Sir Veeman Korndyke Pontiac, whose first daughters to freshen are making splendid records.

A 26 POUND daughter of a 28 pound cow, bred to Prince Gelsche Walker Alcartra, who is by Prince Gelsche Walker and out of a half sister to Tilly Alcartra that made 796.16 lbs. butter from 19,043.5 lbs. milk in one year.

TWO DAUGHTERS of Prince Gelsche Walker Alcartra out of well bred dams.

A DAUGHTER of Creamcup Colantha Pontiac Burke, heavy with calf to Sir Aaggie De Kol Acme 2nd, five of whose seven nearest dams average 1,153 lbs. butter in one year.

A DAUGHTER of the 35 lb. sire Segis Pontiac Abbekerk.

A DAUGHTER of Segis Pontiac Crane De Kol, heavy with calf to Segis Pontiac Abbekerk.

A SHOW HEIFER, sired by a proven son of Segis Pontiac De Kol Burke.

A 2 YEAR OLD daughter of Sir Aaggie De Kol Acme, now on yearly test and bred to the 34 lb. bull Sir Aaggie Hiske Walker.

A GRANDDAUGHTER of an 811 lb. yearly record cow bred to Palo Humphrey Meka, son of the 1,326 lb. yearly record cow Laurameka.

AN 18 POUND 3 YEAR OLD bred to Palo Humphrey Meka.

A 2 YEAR OLD with 519.3 lbs. butter in 305 days, her dam a 23 lb. 2 year old.

TWO GRANDDAUGHTERS of King Korndyke Sadie Vale, bred to a 31 lb. grandson of Pontiac Clothilde De Kol 2nd.

A DAUGHTER of a cow that made 1,093.04 lbs. butter from 27,179 lbs. milk in one year.

A GRANDDAUGHTER of King Segis Pontiac Count, out of a 21 lb. dam and heavy with calf to a 36 lb. son of the three times grand champion King Segis Alcartra Prilly.

A 21 POUND COW that has milked over 100 lbs. per day many different times.

A 2 YEAR OLD daughter of the above cow, with 18.49 lbs. butter in 7 days at 2 years 3 months. She is by a son of King Segis Pontiac Count and sells heavy with calf to a 36 lb. son of King Segis Alcartra Prilly.

ANOTHER DAUGHTER of the same cow, sired by a son of King Walker and due to freshen shortly after sale to a son of King Segis Pontiac Count.

A HEIFER sired by a 950 lb. yearly record grandson of Aralia De Kol. Will be fresh with first calf before sale.

MANY OTHER WELL BRED FEMALES, by great sires, out of good dams, and bred to some of California's best bulls.

Only Three Bulls in the Offering

A son of the 41 lb. \$5,000 bull King Abbekerk Johanna Segis, out of a 29.42 lb. daughter of Spring Farm King Pontiac 6th. The dam and sire's dam average 35.21 lbs. butter in 7 days. Here is a herd header.

A son of Creamcup Fldessa Cornucopia Lad whose dam made 897 lbs. butter from over 22,750 lbs. milk in one year. The dam of this youngster is now on yearly test and making a good record.

A son of the 35 lb. bull Segis Pontiac Abbekerk, out of an A. R. O. granddaughter of King Pontiac Ruby Burke.

CONTRIBUTORS TO SALE:

GOTSHALL & MAGRUDER, Ripon
 ALEX WHALEY, Tulare
 R. C. STURGEON, Tulare
 F. S. BORROR & SON, Tipton
 E. D. BARRY, JR., Daggett

HARRY HILL & SON, Riverdale
 H. E. SPIRES, Caruthers
 PETER LOWSON, Tulare
 SANTA MARIA STOCK FARM, Tulare
 DR. E. J. WELDON, Sacramento

Every animal positively guaranteed to be a breeder; every animal over six months old tuberculin tested and sold subject to retest by the buyer.

CATALOG FREE ON REQUEST

Auctioneers:
 Col. Ben A. Rhoades, Los Angeles
 Col. Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Company
 C. L. Hughes, Sales Manager, Sacramento, Calif.

milk cans that are rusty, or coolers and separators that are corroded, can not rightly be used for handling milk and cream.—M. E. Coulter.

SILAGE FOR FATTENING BEEF CATTLE

Highly satisfactory beef can be produced from two year old steers by feeding the corn as silage, together with linseed meal and clover or alfalfa hay, instead of full feeding on shelled or ear corn.

The price of feed and the premium on heavily fat cattle during the past five years have not warranted full feeding over long periods when cattle which are two years or more of age are used.

One acre, yielding 40 bushels of corn, or eight tons of silage, if fed as silage, together with 1,733 pounds of linseed oil meal and 1,810 pounds of alfalfa hay, would prepare for market 2.8 steers, or would produce under the foregoing circumstances 756.8 pounds of beef and 11.3 pounds of pork as compared with 0.87 steers prepared for market by an acre of corn, fed as shelled corn (full feed) and silage, together with 308.2 pounds of linseed meal and 345.2 pounds of alfalfa hay, or which produced 291.6 pounds of beef and 68.5 pounds of pork.

Pork produced behind cattle eating a ration of corn silage, linseed meal and hay is a negligible quantity.

It is possible to change cattle from corn silage to dry feed, but the increased cost of gains frequently makes it inadvisable.

A ration of corn silage and alfalfa hay produced a gain of 2 1/4 pounds per day for the first 60 days of a feeding period, on two year old cattle.

A ration of corn silage, alfalfa hay and linseed meal with the past five years' prices produced gains at about two-thirds to three-fourths of the cost per pound of the cost when full fed on shelled or ear corn.

The extensive use of silage without shelled or ear corn involves the investment of less capital in feed, decreases the cost of gains and the necessary margin, reduces the hazard of cattle feeding, permits of a larger volume of business and enables the average farmer to participate in the enterprise. It does not produce such a high finish nor such large gains.—Missouri Agricultural College.

SIRE AND DAM RATIOS

Developments in the "Better Sires—Better Stock" campaign have resulted in figures showing the relative number of males and females kept for breeding purposes. Following are the ratios based on more than 200,000 head of stock of all kinds listed with the United States department of agriculture:

Cattle, one bull to 18.9 cows; horses, one stallion to 16.9 mares; swine, one boar to 11.5 sows; sheep, one ram to 37 ewes; goats, one buck to 26.6 does; poultry, one rooster to 23.3 hens; other poultry, geese, ducks, turkeys, etc. (average), one male to 8.5 females.

These figures represent conditions on more than 2,000 farms in various parts of the country and are believed to be typical of other farms. They show the importance of placing stress on quality in sires, since in practically all cases a sire is the parent of a very much larger number of offspring than the average female animal.

REPORT OF DAIRY COW COMPETITION

By Prof. F. W. Woll

Our records show that the following groups of five grade cows in a herd entered in the state dairy cow competition made the average production of butter fat given during the months of September and October, 1920, viz.:

September, 1920—Chas. F. Holman, Stockton, 71.05 pounds; C. E. Fisher, Hughson, 64.46; F. F. Pellissier, Whittier, 62.18; D. Buzzini, Crescent City, 63.04; Albert Burger, El Centro, 50.52.

October, 1920—Earl Graham, Compton, 83.26 pounds; J. D. Hoffman, Pasadena, 77.46; F. F. Pellissier, Whittier, 71.12; C. E. Fisher, Hughson, 60.85; Albert Burger, El Centro, 58.72; D. Buzzini, Crescent City, 48.82.

The two leading groups of cows for the two months were owned by Charles F. Holman and Earl Graham. They are, therefore, entitled to the California Cultivator prizes for the months of September and October.

The production of individual cows in each of the high producing groups is given below. All the cows included were grade Holsteins, except Rose, which is a grade Shorthorn cow.

Grades owned by C. F. Holman, Stockton:

Name	Lbs. Milk	Butter Fat		Credit
		Pct.	Lbs.	
No. 81	1,293	4.3	55.599	63.94
No. 57	1,311	6.5	85.215	85.22
No. 18	1,116	6.9	77.004	77.00
No. 54	1,278	5.8	74.124	74.12
No. 55	1,485	3.7	54.945	54.95

Average credit—pounds, 71.05.

(No. 81 was allowed handicap for cows below full age.)

Grades owned by Earl Graham, Compton:

Name	Lbs. Milk	Butter Fat		Credit
		Pct.	Lbs.	
Maud	2,468	3.1	76.500	76.50
Rose	2,099	5.4	113.300	113.30
Whittier	2,099	3.9	81.900	81.90
Spencer	1,861	4.1	76.300	76.30
Colantha	1,265	5.4	68.300	68.30

Average credit—pounds, 83.26.

SOPHIE 19TH A WONDER

As a rule a 15 year old cow is not considered of much value as a milk producer. Sentiment may permit a hitherto profitable milk producer to linger on the farm and receive kind treatment as a reward for good services. Not so with Sophie 19th of Hood Farm, Lowell, Massachusetts. At the age of 15 years and nine months she has broken her ninth official world's record for butter production. The totals of her nine records are 110,918 pounds of milk and 6,353 pounds of

butter fat. Her record for last year was 10,918 pounds of milk and 566 pounds of butter fat. The owner, Mr. Hood, apparently is not amazed at this wonderful record. He simply states that the cow has always been given the best of care.

Veterinary

Mouth Swells

Mare's nose and all about her mouth puffs up to almost double, every once in a while, in fact of late it is so much of the time. This has been going on since in early summer. At first we thought of snake bite. She had a colt in April, and though we have fed her right along she is extremely thin. We took the colt away from her in August. She eats well and seems well. She runs out on pasture and we feed her both grain and hay and alfalfa. She is about 12 years old.—Subscriber.

The trouble you mention is a very difficult one to diagnose. It is impossible with the information given to recommend any treatment that is sure to give satisfaction. I believe the best suggestion I can make at this time is that you employ the services of a competent veterinarian to examine the animal and prescribe treatment.—G. E. G.



Betsy Lamb Prilly

75 Registered Holsteins

WITH
—TYPE—PRODUCTION—BREEDING—HEALTH—

At Public Auction

Wednesday, December 1, 1920

Westlawn Farms Owned By H. E. Vogel **Fresno, Cal.**

Mr. H. E. Vogel is making an offering in this sale of which any breeder might well be proud, and the opportunity presented for purchase of high class individuals is one which should command widespread attention.

The entire milking herd at Westlawn Farms will be dispersed in this sale, and a number of high class bred heifers and a limited number of good bulls will complete the sale list.

In a previous announcement in this paper we outlined the breeding of the four great sires to which the females in this sale are bred, and present here a brief description of a few of these richly bred females:

- BETSY LAMB PRILLY, 35.03 lbs. butter in 7 days from 743.3 lbs. milk. She also made over 31 lbs. butter in 7 days as a 4 year old and was Grand Champion cow at San Francisco in 1919. She is due to calve in January to King Aralia Mead, an 1,161 lb. son of King Mead of Riverside.
- A DAUGHTER OF KING MEAD OF RIVERSIDE, out of a daughter of Ignaro De Kol that made 762.73 lbs. butter from 18,424.6 lbs. milk in one year.
- A 22 POUND GRANDDAUGHTER OF ARAIA DE KOL with 717 lbs. butter in one year as a 3 year old, her dam a 954 lb. daughter of the 1,085 lb. former world's record milk cow Riverside Sadie De Kol Burke. Her three nearest dams average 1,061 lbs. butter in one year.
- A 21 POUND DAUGHTER OF PRINCE GELSCH WALKER, out of De Kol of Valley Mead 3d, 845.11 lbs. butter in one year.
- A YEARLING DAUGHTER OF THE ABOVE COW sired by Sir Aagie De Kol Mead, son of Sir Aagie De Kol Acme and Miss Valley Mead De Kol Walker. HERE IS A REAL STAR!
- A DAUGHTER OF COLANTHA ALCARTRA FAYNE, 33 lb. grandson of Colantha Johanna Lad, with 25.68 lbs. butter in 7 days as a junior 3 year old.
- A 28.36 POUND DAUGHTER of Dutchland Hengerveld Sir Gladi, in calf to a son of Betsy Lamb Prilly.
- A GRANDDAUGHTER OF KING OF THE PONTIACS, with 21.38 lbs. butter in 7 days as a senior 4 year old. Sells heavy with calf to King Aralia Mead.
- A 17 POUND 2 YEAR OLD daughter of King Morco Alcartra, bred to King Aralia Mead.
- A 24 POUND SENIOR 3 YEAR OLD granddaughter of Juliana King of Riverside, now on yearly test with 191.47 lbs. butter to her credit in 60 days.
- A 24 POUND GRANDDAUGHTER of Juliana King of Riverside, now on yearly test, and well along with calf to King Aralia Mead.
- A 22 POUND COW due in December to a son of Betsy Lamb Prilly.
- A 21.73 POUND JUNIOR 4 YEAR OLD daughter of the 30 lb. bull Admiral Burke.
- A 15.87 POUND 2 YEAR OLD daughter of above cow, well along with calf to a son of Betsy Lamb Prilly.
- A 24.23 POUND GRANDDAUGHTER OF JULIANA KING OF RIVERSIDE, now on yearly test, and well along with calf to a son of Betsy Lamb Prilly.
- A 23 POUND COW, heavy with calf to King Aralia Mead.
- A GREAT COW with a record of 25.11 lbs. butter in 7 days as a senior 2 year old. Will be fresh at sale time.
- A 22 POUND COW out of a half sister to Juliana De Kol, and bred to a son of Betsy Lamb Prilly.
- AN 18.29 POUND 2 YEAR OLD, heavy with calf to a son of Betsy Lamb Prilly.
- A 17.40 POUND 2 YEAR OLD, heavy with calf to a son of Betsy Lamb Prilly.
- A LARGE NUMBER OF OTHER COWS AND HEIFERS with good records, out of well bred, high record dams, and bred to one or the other of the richly bred Westlawn Farms herd sires.

A Limited Number of Young Bulls

KING PRILLY MEAD, out of the great producer and show cow Betsy Lamb Prilly, 30.03 lbs. butter from 743.3 lbs. milk in 7 days, and sired by King Aralia Mead, an 1,161 lb. son of King Mead of Riverside. Here is a real herd bull for some breeder.

A SON OF A 25.68 POUND 3 YEAR OLD, sired by a son of Betsy Lamb Prilly.
A SON OF KING ARAIA MEAD out of a 24 lb. granddaughter of Juliana King of Riverside now on yearly test.
TWO OTHER WELL BRED YOUNG BULLS, both out of dams with good records.

This is positively one of the best offerings ever made in California. The blood lines of the herd are popular, the records substantial, and we believe that no sale in the west has ever presented cattle of better type throughout.

Every animal positively guaranteed to be a breeder; every animal tuberculin tested and sold subject to retest by the buyer.

WRITE FOR CATALOG NOW.

Auctioneers: Col. Ben A. Phoades, Los Angeles
Col. Geo. Bell, Tulare
Management: California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Manager, Sacramento, Cal.

Big Type Poland Chinas at Auction

On account of changing my location, I am offering 60 head of Polands at public auction, at

Orland, Cal., Wednesday, Dec. 15th, 1920

The offering includes 30 spring gilts, 10 fall gilts, 10 tried sows and 10 young boars sired by Long Jumbo, Glenn Chief, Yates Big Orphan, Young Hadley and bred to Yates Big Jones, Y. C. 4, Reformer, and Black Bob. Send for catalog.

R. J. Yates

Orland, Cal.

Poland China Pigs for Quick Sale

Weaned pigs, either sex, of September farrow for sale at ten weeks of age for \$25 each. They are sired by The Sequoian, an extremely large yearling boar and one of the best sires in the state. Write at once.

Z. M. Dickey

Dinuba, Cal.

Eastman Ranch Poland Chinas

Herd headed by Buster Bob, Grand Champion at the strong Los Angeles Live Stock Show. He is the largest junior yearling in the state and is siring some great pigs. Young stock for sale at all times. Satisfaction assured.

H. L. Graham, Mgr.

San Fernando, Cal.

Victory Bob, the Greatest Son

of the grand champion Giant Bob heads the Sunland herd of big type Poland Chinas. Some choice young animals of select breeding for sale at all times.

H. A. Johansen

Fresno, Cal.

Poland China Boars Ready For Service

One October yearling out of Liberty Girl, grand champion sow at Sacramento. Two March boars sired by Long Big Bone Jr. out of the 1919 reserve champion sow. These pigs were from the 3rd prize litter at Sacramento. One by The Westerner out of the 3rd prize junior yearling sow. These boars are real tops and are priced low enough for any one. Write at once. Satisfaction assured.

Alex. D. McCarty

Route C, Modesto, Cal.

King's Big Bone Leader

A Grand Champion and the sire of a Grand Champion heads my herd of high class sows. He has sired a high class of pigs. I will sell 35 head of selected sows at public auction in January. Write for prices and information.

Les McCracken

Ripon, Cal.

Trehwhitt's Big Type Polands

Are the result of careful mating and selection. Size and feeding quality have always been essential features in this herd. Write for prices and information. I can interest you.

W. D. Trehwhitt

Hanford, Cal.

NOW READY TO SHIP

DRIED BEET PULP

Palatable succulent vegetable feed for dairy cows, beef cattle, sheep and hogs

We can take care of orders from any part of the country

The Larowe Milling Company
Detroit, Mich. Los Angeles, Calif.

The Cattle Shortage

By A. L. Spellmeyer

IN the association meeting recently at Los Angeles some of the prominent speakers advised us that there was a cattle shortage, but did not give the facts pertaining to it, and at least one prominent speaker did not believe there was a shortage, but rather plenty of cattle.

It may interest readers to have certain facts which the department of agriculture has assembled, the report of John Roberts of the bureau of animal industry being especially interesting. It may be well to mention that my number of estimates made at various times were figured on a conservative basis which would admit of no dispute, and that the government figures indicate a far more serious condition of shortage than most of us had realized existed. The 1919 slaughter: Cattle, federal inspected, 1,089,984; other slaughter, 3,545,100. Calves, federal inspected, 3,969,019; other slaughter, 5,072,000. Total cattle and calves killed for food in the United States, 1919, 22,676,103. We find also that the average live weight of cattle killed was 924.8 pounds and the average dressed weight 494.8 pounds, or 53.51 per cent. We find that calves dressed 61.16 per cent of the average weight killed, or 94.1 pounds from the live weight of 154 pounds.

The 1919 total beef production is estimated at 6,571,000,000 pounds, veal 851,000,000 pounds. The per capita beef consumed is 59 pounds, veal eight pounds.

It is interesting to note the steady decline in weight of animals killed, showing that younger cattle are being killed for meat. Also the enormous number of calves killed in 1919 as compared to 1914, in fact, about double.

In 1914 1,696,962 federal inspected calves were killed, 2,964,400 other calves were killed, making total of 4,661,362. In 1919 the total slaughter was 9,041,000 calves, about 4,000,000 federal inspection and over 5,000,000 outside.

In weight the veal slaughter of 851,000,000 pounds for 1919 compares to 626,000,000 pounds for 1907 and 433,000,000 pounds for 1914.

It is worthy of note the per capita meat consumed was in 1919 the lowest of any year since 1907, with the exception of 1914, 1915, 1917. Per capita all meats consumed: 1907, 167.4 pounds; 1914, 140.7; 1915, 137; 1916, 143.7; 1917, 130 (meatless days); 1918, 150.1; 1919, 142.

In 1907 we supposed we had 51,566,000 beef type cattle and 20,968,000 dairy cattle. The 1910 census gives 41,178,434 beef type cattle or almost 6,000,000 less than government estimate.

In 1919, or January 1, 1920, we are supposed to have had 44,485,000 beef type cattle and 23,747,000 dairy cattle, or 68,000,000 cattle to stand a slaughter of 22,000,000. In my opinion we had millions more in 1907 than estimated by the government and in 1920 we have several million less, if all states check like certain Southwestern states in relation to government estimates. The fact is we are using about the same amount of beef as the average period since 1907, more veal, about the same mutton tonnage and more pork. While per capita consumed has fallen, tonnage of all meats eaten has increased over a billion pounds since 1914, due to population increase, probably.

Sheep have decreased since 1907 some 5,000,000 head, 1,000,000 of it since 1914. Swine up to and including the year 1918 showed a great increase, but since 1918 have declined.

The maximum was reached with 74,000,000 plus of swine January 1, 1919, but the following year showed a decline of almost a million head and the probable figures for the present year will show a decline of several million additional owing to the high costs of grains and low return for pork causing men to quit that business as they have quit cattle feeding and cattle raising.

Exportation of meat is again picking up. Foreign beef and mutton prices are high and with the exception of Argentine far higher than growers are receiving in this country. Even in

Australia where range is almost a gift and fattening done at low cost on grass, beef prices are 9.25 per hundred weight, or about \$8 per steer over average Los Angeles price for last six months. Cows in Australia up to \$125. Cows in Arizona sold last week at \$40.

Still this country is exporting meat to Europe. Dressed Scotch beef in England is selling at 38 cents. The robbery and pillage of the great cattle industry, following years of drouth, have cut into steer supply, and the present kill in all districts consists of large numbers of cows and of veal calves which should be reserved for the replenishment of depleted breeding stock supply. We have within the last 30 days heard the two czars of the meat industry. Both state that cattle prices will be better. Feeders throughout the country don't believe in them enough to take any chance, as the cattle scarcity in all feeding centers shows plainly. Los Angeles will have no shortage before 1921 unless the meat barons desire to cause it, and cattle price won't raise if those meat barons oppose it, until after the coming March, 1921.

It doesn't take any wisdom to understand that 68,000,000 cattle can't stand a 22,000,000 slaughter and not fall behind. We fell behind millions of cattle with less slaughter, and it will take us six years to grow a mature steer from a calf, so that sometime the cow will again be worth the price.

ELUSIVE SCAB MITE CAPTURED

An interesting report on sheep scab inspection has been received from Dr. R. E. Duckworth, state veterinary inspector.

The owner of a band of sheep near Fairfield, desiring to take the necessary precautions against the spread of scab, dipped his bucks about six weeks ago before turning them in with the ewes. A few days ago while Dr. Duckworth was making an inspection of the band there was no evidence of scab found on any of the ewes. One buck looked slightly suspicious and after much trouble and a long drive was caught. A very careful examination revealed the scab mite. None of the bucks showed signs of irritation by the mites even after they had been driven fast for a considerable distance. An incident of this kind brings very forcibly to mind the necessity of insisting on the corralling of sheep for careful inspection, no matter how much time or trouble is spent. This is one instance when a casual inspection might have caused such a mild infestation to be overlooked.

HELP A GOOD DAIRYMAN TO STAY IN BUSINESS

Milk is a perfect food. It contains protein the equivalent of meat, but in more digestible form; sugar; fat; mineral salts or ash; water, and is rich in vitamins, the very necessary growth stimulating substance for children. It is a food that must be had.

Consumers are everywhere complaining of increasing difficulty in getting milk, while dairymen are quitting the business in ever increasing numbers. Ask them the reason: Feed is high, milk is not; it is very hard, confining work and, worst of all, they are not making a reasonable wage from it in consideration of living costs and of wages paid for much more desirable work of half as many hours in some other line. If someone suggests a rise in the price of milk, such a howl arises that it threatens that person's standing in the community. Furthermore, the same customers who are begging the dairymen for milk when feed is scarce and all but the best cows are dry, will quit a dairyman who has striven faithfully to serve them through the pinch and buy milk from a neighbor while the grass is green and there is some hope of a small profit from the business. All this injustice, for such it certainly is, is committed in spite of the fact that most dairymen are running a clean, sanitary dairy in strict conformance with the dairy law, while "neighbor's cow dairies" are not all operated upon a legitimate basis.

The solution: Apply the golden rule. Give your dairyman a reason-

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A Safe, Speedy, Positive Remedy for

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diphtheria. Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address The Lawrence-Williams Co., Cleveland, O.



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Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

able price for his product and a contract for a year's delivery, so he can conduct his business with some certainty of the future and make it extensive enough to guarantee you (the consumer) a good supply for the year around without worry.—J. J. F.

FEEDING SUNFLOWERS

Experiments with sunflowers show that 36 tons of green fodder were produced on one acre when it was irrigated. When unirrigated, but hoed, one acre produced 22 tons of green fodder. Forty to 90 pounds of the green product were fed to cows daily. About five per cent of the plant was in flower. The results showed a food value almost equal to corn fodder.

The following feeding tests were conducted to more nearly determine the food value of siloed sunflowers:

Seven cows were fed oats, malt, sprouts and bran in the ratio of 5:2:3, and alsike clover hay. Seven other cows were fed for the same period on the same ration with the exception that part of the clover hay was replaced by sunflower. At the expiration of 28 days of such feeding the ration of the same two lots of cows was reversed and the experiment continued 28 days longer. The results showed that the feeding of three and three-fourths pounds of sunflower daily increased the milk and butter yields and resulted in a daily saving of one pound of clover hay. No peculiar taste or smell could be detected in the milk and butter when the sunflower was fed.

THE MUDDY BARNYARD A MENACE

The muddy barnyard season will soon be at hand. During the rainy period it will be next to impossible to improve the condition, so why not now give the problem some serious thought and consideration and have the yards in good trim before the rains appear? Study the course of natural drainage, and if there is a reasonable amount of this great improvement can be made by deepening the ditches or by putting in a system of underground tiling.

If there is no natural drainage and the barnyards are extremely level, it will be necessary to pave a portion of the yard.

Not much profit is made by allowing hogs and cattle to wade belly deep in mud during the rainy season. And, furthermore, filthy yards about the barns are one of the most common causes of the dissemination of diseases among our domestic animals.

NOVEL MILKING SHED FROM THE ANTIPODES

Dr. M. E. McDonald, inspector for the state department of agriculture in the Imperial Valley, reports that William Paine of El Centro has a novel type of milking shed that is arousing the interest of various inspectors and others who have seen it.

Mr. Paine has a herd of some 60 or 70 cows. His milking shed is equipped with a milking machine and consists of only six stalls. The cows enter the stalls and after being milked pass on through doors in the front of the stalls which are released by means of a lever from the rear. Other cows, awaiting their turn, take their places so that there is no loss of time. They are milked by machine directly into pipes which transfer the milk direct to the receiver in the milk house. Mr. Paine has been using this system for some six months or a year and reports that the cows are readily trained to follow each other into the stalls and that he is well pleased with the plan.

While this system is a novelty in this state, it appears that it is by no means a novelty in other countries. Information is that a gentleman of New Zealand devised it some 20 years ago and that now it is in very common use in both Australia and New Zealand. In fact, it is reported that practically all the milking sheds of New Zealand are of this type and that they are adapted both for machine and hand milking. Because of the similarity of conditions there and here it is thought by those who have imported the idea that the plan is suitable for California.



America's Best Duroc- Jerseys

From point of size and quality and show ring records the 1200 head of pure bred Duroc-Jerseys on the big Diamond Bar Ranch are noted throughout the country. They have in their veins the blood of the greatest sires that America has ever produced.

Add This Trio to Your Herd

Boar and two unrelated sows, seven to eight months old, all registered and sired by such famous boars as: Ace of Pathfinders, Mammoth Sensation Jr., Great Pathfinder. Offered now for \$500 for the trio.

Registered spring boars sired by the same boars as mentioned above.

A limited number of registered bred sows may now be had at reasonable prices.

Unregistered pure bred gilts in quantity, (car lots or less). Price \$35.00 a head. Registered boars to go with these gilts at correspondingly low prices.

A guarantee protects you in every instance.

Act Promptly.
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Upon Request.

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SPADRA,
Los Angeles County
California

F. E. LEWIS,
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Hog Department

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AND ATTEND MY
DUROC SALES
MAIL ORDER AUCTION
HELD EVERY MONTH
EVERY HOG SOLD UNDER MY THOUSAND
DOLLAR GUARANTEE
WRITE FOR LIST OF "DECEMBER SPECIALS"
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YOUR DUROC FARM WHITTIER
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Johnson's Defender Jr.

Heads my herd of carefully selected sows. He should be seen to be appreciated. I can spare a few choice females or young stock either sired by or mated to this good boar. You will be pleased with any purchases made from me.

H. C. WITHEROW

Live Oak, Cal.

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In February Sale of sows and gilts bred to Great Orion Sensation Jr., grand champion at Tulare, Los Angeles and Riverside.
Now Spring pigs—boars and sows—by the grand champion.
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protected against Blackleg for Life with ONE treatment vouch for Purity Blackleg Aggressin (Germ Free Vaccine made by the Kansas Process). Absolutely safe to use. Cannot transmit disease. Brand, castrate, etc., when you vaccinate. OTHER PURITY PRODUCTS: Anti-Abortion Vaccine for Cattle; Hemorrhagic Septicemia Vaccine for Cattle and Sheep; Anti-Hog Cholera Serum, and High Count Mixed Infection Vaccine for Swine. For service that counts write, phone, or wire.

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where efficiency is our watchword and the production of extra heavy milking Holsteins and big type Poland Chinas is our specialty. A few choice animals of either breed or sex for sale at all times at reasonable figures. Write for information.

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want and also for "Jersey Facts" and "The Key to Dairy Profits."

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Also a few bull calves sired by Jap's
Perfection Owl.

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Young Jersey Bulls For Sale

One at the head of your herd will pay
big dividends on his cost. Write to

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Jersey Bull

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A fine straight one, bred right, priced
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Shipping weight 15 lbs.

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Has TELESCOPE with magnifying glasses which
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Pays for itself on the first job ofIRRIGATING, DITCHING, TILE DRAINING,
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Increase Milk ProductionSecure uniform and correct dairy
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Priced at a figure any farmer can afford and that will show him a profit.

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Thirty Buyers Take Toyon Holsteins

Thirty buyers took advantage of the opportunity afforded by the two day dispersal sale of Holsteins sold by the Toyon Farm Association at the state fair grounds, Sacramento, November 10 and 11, and paid \$42,205 for 134 head, an average of \$315. The sale was regarded as entirely satisfactory to the sellers and the buyers seemed well pleased with their purchases. It so happened that rain fell on each day and that fact is known to have kept many prospective buyers away. As it was, it is probable that no sale wherein was offered as large consignment reached as satisfactory termination. A number of new buyers were developed and many of the better lots found their way to established herds.

Gotshall and Magruder of Ripon were the heaviest buyers and took 15 head of the better things, including the two year old, Moxee Lucy, now making a nice semi-official record, for which they paid \$1,000; her dam, Cascade Lucy at \$625; Cascade Queen Juanita, by the same sire as Cascade Fleta Johanna, for \$725. William Dreher of Sacramento made his debut as a buyer and selected 14 head of the top females to be used as a foundation herd. H. J. Long bought 11 head, J. W. Scudder of Escalon paid \$1,000 for the 26.55 pound cow, Snowstorm Ormsby De Kol. Scudder got eight head of females and eight head of the younger bulls. P. M. Shearer of San Jose took 11 head of the younger females. Mrs. B. F. Fox of Modesto selected seven head of the top cows and was the runner up on many of the highest selling lots. The Bridgford Holstein Company, Patterson, bought the third cow to sell for \$1,000, the 19 pound three year old, Countess Mary Mahomet De Kol 2d, with a yearly record of 742.77 pounds butter from 17,850.7 pounds milk.

The bulls catalogued did not sell for their actual values, but they were disposed of at prices that will make money for the buyers.

The sale was made in order to reduce the herds owned by the Toyon Farm Association to fit into the new plans of the owners.

The sale was held under the management of C. L. Hughes of the California Breeders Sales and Pedigree Company, Sacramento. Col. Ben A. Rhoades, assisted by Col. John A. Davis, did the selling.

A list of the principal sales follows:

- 3, Nazli Prilly Fobes, February, 1914, M. L. Dow, Modesto, \$540.
- 4, Toyon Nazli Fobes, March, 1920, P. M. Shearer, San Jose, \$300.
- 5, Pride Pontiac Fobes, January, 1916, Gotshall & Magruder, Ripon, \$400.
- 6, Nellie Fobes, November, 1912, Wm. Dreher, Sacramento, \$335.
- 7, Laconner Korndyke Lass, January, 1915, Wm. Dreher, \$310.
- 8, Countess Mary Mahomet De Kol 2d, November, 1914, Bridgford Holstein Co., Patterson, \$1,000.
- 9, Johanna Chimaum Canary, January, 1917, Holmes Stock Farm, Modesto, \$860.
- 10, Pauline Piebe, September, 1915, Mrs. B. F. Fox, Modesto, \$210.
- 12, Laconner Pontiac Ellnor, May, 1915, Mrs. B. F. Fox, \$460.
- 13, Toyon Ellnor, February, 1920, P. M. Shearer, \$250.
- 14, Jessie Longfield, January, 1916, Wm. Dreher, \$735.
- 15, Edenwold Jean Abbekerk, February, 1914, E. Alberti, San Anselmo, \$360.
- 16, Johanna Pontiac Vickery Champion, August, 1916, R. J. Bender, Glenn, \$400.
- 17, Mona Fobes Tritomia, September, 1916, Wm. Dreher, \$625.
- 18, Toyon Mona Fobes, November, 1919, E. L. Hall, Reno, Nevada, \$310.
- 19, Laconner Pontiac Grant, March, 1917, H. J. Long, Fallon, Nevada, \$350.
- 20, Johanna Skylark Ormsby, March, 1918, John Saxer, Modesto, \$350.
- 21, Kirby Spofford Van Beers, November, 1911, Gotshall & Magruder, \$325.
- 22, Laconner Pontiac Kathleen, October, 1915, Wm. Dreher, \$610.
- 23, Toyon Kathleen, January, 1920, P. M. Shearer, \$300.
- 24, Toyon Pearl Segis Alcartra, March, 1917, H. J. Long, \$310.
- 26, Canary Hartog Mercedes, October, 1916, Mrs. B. F. Fox, \$220.
- 28, Cascade Juanita, December, 1912, J. W. Scudder, Escalon, \$400.
- 30, Laconner Pontiac Helene, April, 1915, Hutchinson Co., Oakland, \$225.
- 32, Moxee Pearl Johanna, August, 1918, Frank Hatch, Modesto, \$600.
- 33, Moxee Aaggie Bracelet De Kol, December, 1918, R. E. Kilgore, Ripon, \$625.
- 34, Lady Augusta Pontiac, September, 1918, F. W. Klesel, Sacramento, \$300.
- 35, Snowwhite Pietertje Ormsby De Kol, November, 1914, J. W. Scudder, \$900.
- 36, Unnamed, September, 1918, M. L. Dow, Modesto, \$425.
- 38, Meadow Lea Ona Bonheier, June, 1918, R. E. Kilgore, \$375.
- 40, Countess Doede De Kol, January, 1916, Gotshall & Magruder, \$450.
- 41, Maldeta Mercedes Fobes, November, 1914, C. C. Pease, Kerman, \$210.
- 43, Cascade Lucy, February, 1916, Gotshall & Magruder, \$625.
- 44, Lady Canary Violetta, May, 1915, Wm. Dreher, \$555.
- 47, Minnie Segis Model, October, 1912, Mrs. B. F. Fox, \$300.
- 50, Queen Canary Maldeta, August, 1915, Wm. Dreher, \$425.
- 51, Bessie Pearl Fobes, April, 1916, R. E. Kilgore, \$200.
- 53, Meadow Lea Grace Marie, January, 1916, Wm. Dreher, \$430.
- 54, Cascade Flora, January, 1914, J. W. Scudder, \$525.
- 57, Oakhurst Jessie Pauline Fobes, January, 1916, C. C. Pease, \$400.
- 58, Alice Segis Perfection, March, 1912, R. E. Kilgore, \$225.
- 59, Susie Fobes, May, 1917, Wm. Dreher, \$335.
- 60, Northfield Ray Apple 4th, November, 1915, Wm. Dreher, \$300.
- 61, Toyon Rag Apple Emperor, December, 1919, H. J. Long, \$375.
- 62, Alice Posch Spofford, February, 1916, H. J. Long, \$360.
- 63, Toyon Alice Posch, December, 1919, H. J. Long, \$235.
- 65, Toyon Idaho Fobes, February, 1920, P. M. Shearer, \$200.
- 67, Johanna Neeltje De Kol, April, 1912, Gotshall & Magruder, \$300.
- 69, Toyon Vecman Colantha, January, 1920, P. M. Shearer, \$225.
- 71, Cascade Queen Juanita, February, 1915, Gotshall & Magruder, \$725.
- 72, Toyon Juanita De Kol, November, 1919, P. M. Shearer, \$260.
- 73, Lady Bracelet De Kol 2d, August, 1911, Wm. Dreher, \$385.
- 74, Toyon Bracelet De Kol, January, 1920, P. M. Shearer, \$200.
- 75, Jettine Ruby De Kol Posch, March, 1912, Wm. Dreher, \$360.
- 76, Pauline Anoka Goudgeld De Kol, January, 1913, M. L. Dow, \$875.
- 77, Pearl Heffron, December, 1916, J. W. Scudder, \$400.
- 78, Parthena Akkrum De Kol, July, 1916, E. L. Hall, \$216.
- 80, Toyon Colantha Ellen, December, 1919, H. J. Long, \$285.
- 81, Hollywood Lilith Sita De Kol, June, 1915, Gotshall & Magruder, \$260.
- 82, Toyon Sita Fobes, January, 1920, P. M. Shearer, \$200.
- 83, Pride Pontiac De Kol Fobes, November, 1917, R. J. Bender, \$250.
- 84, Toyon Pride Fobes, February, 1920, Frank Hatch, \$260.
- 85, Toyon Segis Bess, September, 1918, E. Alberti, \$135.
- 86, Cascade Ruby, December, 1914, J. W. Scudder, \$750.
- 87, Lily Woodmont Akkrum, March, 1911, C. C. Pease, \$325.
- 88, Meadow Lea Memorial, December, 1919, P. M. Shearer, \$260.
- 93, Violet Gen De Kol 2d, January, 1912, H. J. Long, \$375.
- 94, Lilith De Kol Fobes, August, 1917, Wm. Dreher, \$260.
- 95, Meadow Lea Virgo Canary, November, 1914, R. J. Bender, \$300.
- 96, Johanna Doede Ormsby Korndyke, November, 1917, Wm. Dreher, \$410.
- 97, Segis Fayne Clara, March, 1912, Gotshall & Magruder, \$460.
- 98, Meadow Lea Ona De Kol, December, 1916, Gotshall & Magruder, \$350.
- 99, Moxee Lucy, March, 1918, Gotshall & Magruder, \$1,000.
- 100, Toyon Lucy De Kol, December, 1919, P. M. Shearer, \$210.
- 102, Bessie Fayne Duchess, December, 1917, E. Alberti, \$250.
- 103, Pinerow De Kol Netherland, March, 1915, M. M. Clapper, Modesto, \$250.
- 104, Miss Nudine Fobes, February, 1916, R. E. Kilgore, \$400.
- 105, Lil Black Nudine Fobes, January, 1919, E. Alberti, \$160.
- 106, Toyon Nudine Forbes, December, 1919, P. M. Shearer, \$235.
- 108, Geertje De Kol Kaan, February, 1916, H. J. Long, \$310.
- 110, Korndyke Ormsby Goudgeld De Kol, May, 1915, M. L. Dow, \$335.
- 112, Bracelet Aaggie De Kol, November, 1916, H. J. Long, \$260.
- 113, Northfield Rag Apple 2nd, January, 1912, H. J. Long, \$310.
- 116, Albino De Kol Hartzog 3rd, January, 1912, Gotshall & Magruder, \$225.
- 117, Clarodina Kakenstein De Kol, March, 1911, M. M. Clapper, \$200.
- 119, Pietertje Segis America, December, 1911, Mrs. B. F. Fox, \$510.
- 120, Toyon America Segis, April, 1919, M. L. Dow, \$410.
- 121, Toyon Colessa, August, 1918, Frank Hatch, \$525.
- 122, Toyon Pontiac Colessa, November, 1918, R. E. Kilgore, \$400.
- 125, Moxee Tuka Colanthus Fayne, October, 1918, Holmes Stock Farm, \$225.
- 126, Unnamed, September, 1919, Bank of Calt, \$260.
- 127, Toyon Lady Jess, September, 1919, Frank Hatch, \$240.
- 128, Toyon Valdesa Ononis, February, 1919, Gotshall & Magruder, \$350.
- 158, Extra, Mrs. B. F. Fox, \$435.
- 159, Extra, Snowstorm Ormsby De Kol, J. W. Scudder, \$1,000.

BULLS

- 132, Toyon Mona Segis King, November, 1919, H. J. Long, \$200.
- 135, Toyon King Lulu, February, 1919, Nava State Hospital, \$260.
- 139, Meadow Lea Canary Champion, January, 1919, Hutchinson Co., \$250.
- 140, Sir Maldeta Fobes, Tritomia, February, 1919, G. K. Swingle, Davis, \$300.
- 149, Sir Meadow Lea Bonheur, October, 1919, Hutchinson Co., \$125.
- 150, Toyon Snowflake King, February, 1920, G. K. Swingle, \$150.
- 151, Toyon Abbecker King, February, 1920, C. C. Pease, \$100.
- 152, King Kirby Van Beers, February, 1920, M. H. Whitacre, Dixon, \$120.
- 153, Toyon Korndyke Valdesa, February, 1920, P. N. Schmitt, \$85.
- 154, Toyon Duke Bessie Fobes, February, 1920, Ernest N. Meyer, Oriand, \$110.

Bargains in Caledonia Shorthorn Sale

The second public sale of Shorthorns from the Caledonia Farms herd that was held at the farms near Sacramento, Friday, November 12, proved a veritable bargain day for the crowd of buyers who attended. Forty-eight head of cows, heifers and bulls made a general average of \$307, which was regarded as at least \$100 below their true value. The failure of the buyers to show greater appreciation was largely due to the money situation that has made credit tight and the fact that there still looms in the minds of the cattlemen the fear of another dry year. The offering as a whole was highly creditable and presented in splendid condition. While the seller did not receive as much as he had a right to expect it is doubtful if any one sale could have done more to start new breeders in the business, and it is certain that those who did buy secured a very valuable lot of breeding material at prices that cannot fail to return them a handsome profit.

Another disappointing feature of the sale was the lack of demand for the bulls. Ten head of extra good young bulls had been catalogued but after the first two had been appraised at values entirely out of line with their worth, and no further interest was manifested in bulls, the balance were withdrawn from sale.

A feature of the sale was the number of new buyers. Almost the entire list of 17 buyers were men who are just entering the Shorthorn ranks—a fact that presages much for the future of the industry.

The top of the sale was reached with the splendid roan Luster cow that sold with a cracking good white bull calf at foot to F. F. Gordon of Suisun for \$950. The second high price, \$575, was paid by Edinger-Johnson Company of Hood for another of the Luster tribe, heavy to the service of Imp. Caledonia.

The heaviest individual buyer of the sale was H. C. Muddox & Son, Sacramento, who selected nine head of cows and heifers. Howard Vaughn, who has recently moved to this state from Iowa, bought five head of females for his herd, which will be maintained on his newly acquired ranch near Dixon. Geo. H. Sawyer of Waterford made his first purchase of five head.

The sale was managed by C. L. Hughes of the California Breeders Sales Company, Sacramento. Col. Ber A. Rhoades of Los Angeles was the auctioneer and he was assisted by Col. John A. Davis of Manteca.

A complete list of the sales follows:

1. Archeress 27th, September, 1914, Howard Vaughn, Dixon, \$425.
2. Lustrous, March, 1912, R. T. McGurk, Stockton, \$375.
3. Archeress 28th, May, 1915, Edinger-Johnston Co., Hood, \$575.
4. Lustrous 2nd and b. c., September, 1915, F. F. Gordon, Suisun, \$950.
5. Pansyanna, January, 1917, R. P. Cornell, Galt, \$400.
7. Souvenir Countess and b. c., March, 1916, H. C. Muddox & Son, Sacramento, \$425.
8. Wondruos Souvenir, December, 1918, Edinger-Johnston Co., \$350.
9. Lady Winsome, November, 1918, R. P. Cornell, \$250.
10. Winsome Pauline, November, 1918; Geo. H. Sawyer, Waterford, \$250.
11. Glenbrook's Memory 36th, February, 1915, Howard Vaughn, \$285.
12. Glenbrook's Memory 8th, March, 1913, Howard Vaughn, \$325.
13. King's Memory 11th and b. c., January, 1914, Geo. H. Sawyer, \$450.
14. Glenbrook's Memory 29th and b. c., December, 1914, Geo. H. Sawyer, \$325.
15. Fond Maid, April, 1915, R. P. Cornell, \$300.
16. Glenbrook's Memory 11th and c. c., March, 1913, Paul R. Sims, Elk Grove, \$500.
17. Countess Goldenia, September, 1914, Howard Vaughn, \$275.
18. Little Countess, September, 1914, Butte City Ranch, Butte City, \$200.
19. King's Memory and b. c., January, 1913, Edinger-Johnston Co., \$475.
20. Glenbrook's Memory 9th and c. c., March, 1913; J. Boucher, Danville, \$450.
21. King's Memory 6th, December, 1913, Geo. J. Meister, Sacramento, \$350.
22. Glenbrook's Memory 19th, September, 1913, Geo. H. Sawyer, \$250.
23. Whitehall Memory 4th and c. c., February, 1915, H. C. Muddox & Son, \$425.
24. Lady Champion 5th and c. c., November, 1917, F. L. Gordon, \$450.
25. Mystery Duchess 6th and b. c., February, 1909, H. C. Muddox & Son, \$225.
26. Ameliana 2nd, January, 1917, R. P. Cornell, \$250.
27. Orange Coquette and c. c., February, 1916, H. C. Muddox & Son, \$525.
28. Orange Memory 2nd and b. c. December, 1916, E. L. Franks, Chico, \$325.
30. Glenbrook's Memory 3rd, January, 1913, Oeste Bros., Davis, \$250.
31. Paicine's Memory 4th, February, 1914, Weber Bros., Davis, \$250.
33. Whitehall Poppy, December, 1915, Fred H. Bixby, Long Beach, \$200.
35. Lavender Co-Ed, December, 1915, Geo. H. Sawyer, \$225.
36. Lavender Missus, January, 1919, Howard Vaughn, \$250.
37. Charming Memory, March, 1919, R. P. Cornell, \$225.
38. Pine Grove Sarah, January, 1919, H. C. Muddox & Son, \$310.
39. College Heiress, March, 1919, H. C. Muddox & Son, \$200.
40. King's Memory, March, 1919, Oeste Bros., \$225.
41. Graceful Missus, December, 1918, R. P. Cornell, \$200.
42. Glenbrook Peach, December, 1918, R. T. McGurk, \$235.
43. Glen Marquise, December, 1918, H. C. Muddox & Son, \$250.
44. Scotland's Memory, December, 1918, H. C. Muddox & Son, \$240.
45. Marvel's Bessie, January, 1919, Geo. F. Meister, \$210.
46. Marquise, November, 1918, H. C. Muddox & Son, \$285.
47. Best Memory, February, 1919, Geo. F. Meister, \$185.
48. Lovely Mistress, September, 1918, Geo. H. Sawyer, \$225.
49. Miss Ringleader, November, 1918, F. L. Gordon, \$210.
50. Unnamed, July, 1919, Geo. F. Meister, \$180.

BULLS

53. Unnamed, October, 1919, Fulwider Co., Willits, \$225.
56. Pine Grove King 19th, April, 1919, G. W. Hinckley, Mariposa, \$250.

CATTLEMEN MEET

Following the gathering at Salt Lake of cattlemen of the Western states, December 6, 7 and 8, the California Cattlemen's Association will meet at the Palace Hotel, San Francisco, December 18.

The Southern California Poland China Breeders Association is planning a consignment sale for the San Fernando Valley to be held some time this winter. With such men as Earl Sturgis, H. L. Graham, Tom Edmondson and E. B. Peers in charge, we look for a lively sale. The date will be announced later.



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70¢ and \$1.40 Sizes

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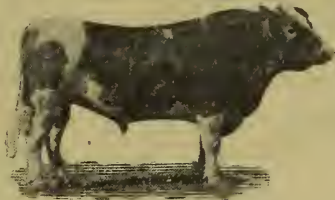
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| 100 stanchions with drinking cups. | Cow pens. |
| Calf stalls. | Fertilizer carrier. |
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Sir Ormsby Skylark
Sire of the World's Champion Cow

The fountain head of the Ormsbys with over 50 daughters of Sir Ormsby Skylark in the herd which has two sons of Sir Pietertje Ormsby Mercedes at its head. Write for our sales catalog of service bulls.

D. G. Maxwell, Owner

Garden Court, Hollywood, Cal.

King Korndyke Pontiac Mead

Average of his Dam and Sire's Dam (Both Former World Record Holders)

At Average Age of 4 yrs. 2 mo. 10 dys.	1062.64 lb. Butter
Semi-Official, 365 Days	21173.75 lb. Milk
Official Test, 7 Days	31.91 lb. Butter
	615.60 lb. Milk

His Sire—King Korndyke Pontiac 20th
His Dam—De Kol of Valley Mead 2d

Four of his seven nearest Dams have held World's Records

LOS ANGELES COUNTY FARM

Hondo, Cal.

3 miles south of Downey on Downey-Long Beach Boulevard

"Woody" Says:



When Henry reduced Lizzie's selling price, everybody knew the next day. But do you know we are selling lumber at big reductions from the February high levels? For instance: We have good flooring as low as \$50.00 per thousand feet. Good roof sheathing for \$45.00. Our justly famous "WOODROW" sanded roofing for \$2.25 and our "Woody" for \$2.50 per roll. If you do not know how low we are selling good lumber, write, call or wire at once. Our lumber is selling for 20 to 35 per cent less. Now is the time to build.

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Nevada Herefords

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Always at the Top

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BEAU BLANCHARD 76TH
Grand Champion at Sacramento and Los Angeles

HARRIS STANDARD 2D
a most impressive sire

ABE MISCHIEF
a son of Beau Mischief

BOCALDO 21ST
a son of Bocaldo 6th

Our large herd permits us to offer a wide selection of bulls, cows and heifers of correct type and modern bloodlines at prices based on sound values. Visit our ranch or write us for particulars.

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Wells, Nevada

Otis Cordell, Herdsman

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My Herefords have size, bone, constitution and are notably thick fleshed. Visit my ranch and get my prices. Send for free literature.

Mission Hereford Farm

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A few choice young bulls, big, heavy-boned husky fellows sired by DON PERFECT 2nd, one of the best sires in the West. Priced right and guaranteed.

H. H. Gable

Esparto, Cal.

the life of the
party



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"Gear-ar-delly"

Whether it's a "little party" or a "big affair" Ghirardelli's is a great comfort to any hostess [big or little]. Cups of creamy, hot chocolate, chocolate layer cake, "fascinating" squares of chocolate fudge [not to mention a host of other goodies]—you can rely on Ghirardelli's to be the life of the party.

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Ground Chocolate



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Order by name—PEARL OIL.

STANDARD OIL COMPANY
(California)

Household Department

THANKSGIVING

Let us give thanks at Thanksgiving
That we're singing and laughing and liv-
ing;
Thankful, we say, just to live by the way
In sunlight and starlight that scatter
their ray;
Thankful, indeed, for the rose and the
gleam,
The smile and the song and the beautiful
dream.
Let us give thanks for the glory,
The daily life's wonderful story,
The fields that we know and the hills
where the glow
Of sunlight falls soft and the water brooks
flow;
Thankful, sweetheart, for the joy and the
bliss,
The arms 'round the neck and the love-
laden kiss!

THE GLORIOUS GOBBLER

All hail the glorious gobbler!
When autumn skies are gray
He mounts his china platter throne
And rules Thanksgiving day;
It is a noble oval
With gilded garlands fair,
Or it may be an heirloom prized
Of old blue willow ware.

Salute the glorious gobbler;
(Though sometimes it's a hen
That dawns in appetizing brown
Upon our famished ken).

He wears his festal dressing
Contrariwise, within,
Receiving all his subjects true
In nothing but his skin.

Here's to the glorious gobbler!
Though far afield they roam,
Yet in his honor every year
The children gather home.
His drumsticks bent assembly
From mountain top to sea,
He wears a golden celery crown,
The king of birds is he.

Long live the glorious gobbler.
With his attendant pies,
Mince, pumpkin, apple, cranberry,
And each of generous size.
Of all famous monarchs
From Ecuador to Spain,
He is the only one who boasts
An undisputed reign.
—Minna Irving, in New York Sun.

ALL ABOARD FOR THE FURNI- TURE ISLAND

(Concluded.)

"Of course I could be and I am—
only I'm not contrary. That's put in
to make it rhyme. Did that silly
dandelion tell you why we couldn't go
in?"

"It's because we have such homely

ished floor a group of clover maidens
in old rose fringed suits were doing a
dance.

Around the great room, close to the
walls which were hung with tinted
satins, were small three-legged golden
tables with chairs to match, and in
the chairs the lovely flower ladies
were sitting, munching bits of frosted
cake or sipping daintily from goblets
of nectar. The Daffodils were on a
stage at one end of the room. They
were still playing gayly, the notes of
the violins blending softly with the
strains which arose from a great many
gilded music boxes which were scat-
tered about the hall.

One of the pink and white poppy
girls who had drawn back the cur-
tains—there were two of them just
alike—showed the twins and Mary to
the nearest table. She seemed quite
afraid that the other flowers would
spy Mary, and perhaps it was just as
well that they didn't.

After the clovers had finished sev-
eral beautiful goldenrod ladies with
very fuzzy hair did a minuet but
Mary and Janie and Jennie were al-
most too busy to watch, for one of
Dandy Lion's sisters—there were
dozens of them fitting about in white
caps and aprons—had brought a tray
of salad and cakes and ices in thin
flowered dishes.

The music had grown louder and
everyone had arisen to dance, when
the curtains flew back with a jerk and
in stalked Cammie with Paintetta on
his back. She nodded to the twins
who were still at their table, and then
yawned and slid down. Cammie was
chewing something very grouchy and
he frowned at everyone so that the
flower ladies scattered back to their
tables.

"Hurry up with your posing," called
Paintetta, setting up her easel in the
middle of the floor, which was now
empty. "I stopped to do the sunset
and Cammie's mad."

The three Forget-me-not sisters,
who were all at one table, put their
arms around each other and leaned
back against the satin wall to set off
their sky blue gowns. Iris Arlene—
Mary pointed her out—stepped away
from her cousin Lily and posed alone

MY THANKSGIVING

For all the garnered harvest of the year;
For golden grain of love, and hope, and thought;
For health and strength of those I hold most dear;
For goals attained through weary journeys sought;
For anxious fears removed, for faith grown bright;
For friends whose love and kindness cheer my way;
For stars above me in the darkest night,
I give Thee thanks on this Thanksgiving Day.
Yet, not for these alone, since, most of all,
I thank Thee, Lord, for what Thou hast not given—
The poison cup of fame, the bitter gall
Of fickle friendship, and the fair, false heaven
For which in ignorance I vainly yearned,
But which Thy love withheld. Now, for Thy "Nay,"
When toward these harmful things I would have turned,
I give Thee thanks on this Thanksgiving Day.—
—Gussie Packard DuBois.

names," said Janie, who didn't feel so
badly now that Mary Quite Contrary
was with them. "They are only Jen-
nie and Janie, and yours is Mary."

"M'ne is Maryan Angelica, you
mean," said the girl with a smart lit-
tle toss of her head.

"Why—why, mine is Genevieve Pa-
tricia!" exclaimed Jennie, remember-
ing. "And Janie's is Janice Laurinda!"

They all ran over to the ticket stall.
"My stars!" cried Dandy when he
heard their names. "I thought I could
depend on you. Head's swimming."

He tied the green handkerchief
around his forehead and searched
through a packet of tickets, finding
three, which he handed to the girls.

"Got every fancy name in the world
here," he said sulkily. "Got to quit the
job. Head gets too dizzy."

The tickets read simply:

Admit Maryan Angelica
Admit Janice Laurinda
Admit Genevieve Patricia.

The girls hurried over to the velvet
curtains, which were drawn aside at
once.

Inside, in the center of a great pol-

Several pale pink Arbutus flowers
sank to the floor and leaned their
heads on their slim arms. Rosebud
Natalie spread out her shining velvet
and smiled sweetly at nothing.

Paintetta began to make strokes
with her brush. It was a very large
canvas and the twins couldn't help but
think that even the flowers would be
tired before the picture was finished,
to say nothing of Cammie, when Pain-
tetta turned to pull a new set of hairs
from Cammie's hide and said:

"Come here, Rosemary Ardis, and
you Jonquil Lorrayne. Make your-
selves some brushes from Cammie.
Here are the sticks. I didn't give you
painting lessons for nothing. Come
now—paint in this border or we'll
never finish."

Cammie, who had been lying down
with his eyes closed, looking extreme-
ly sulky, got to his feet with such a
jerk that Paintetta and the canvas
went over backward and Rosemary
and Jonquil flew back to their places.

"No!" he shouted, stamping his
feet. "No more brushes—no more
nothin'—I'm going home!"

He walked over to the twins and

knelt down so that they could climb up on his back. Paintetta folded her stool and all the flowers sank back with a sighing sound like the sweet breath of the meadows in summer.

"Goodbye children!" called Mary Quite Contrary. "It doesn't matter for there are portraits enough of us."

Yawning widely, Paintetta walked over and climbed up behind the twins. "One, two, three. I wish we could be home in the twins' new nurseries," she chanted softly.

The velvet curtains drew aside and the twins caught a glimpse of Dandy Lion fast asleep with his head bowed among the tickets.

It was so very dark outside that they didn't see another thing until they were home in bed with Cammie and Paintetta on the footboard beside them.

THE THANKSGIVING DINNER

Clear tomato soup. Cracker crisps
Roast turkey, potato stuffing, brown
gravy

Cranberry jelly
Boiled rice. Creamed onions
Cole slaw

Home made pickles. Olives
Pumpkin pie. Fig pudding
Coffee

Grapes, oranges, ripe persimmons,
walnuts

Clear Tomato Soup

Cook 1 quart tomatoes with 1 pint water, 1 sliced onion, bit of bay leaf, 4 cloves, 2 teaspoons sugar, 1 teaspoon salt, for 20 minutes. Strain and add $\frac{1}{4}$ teaspoon soda. Thicken with 2 tablespoons butter and 3 tablespoons flour rubbed together. This can be made the day before and reheated when time to serve.

Cracker Crisps

Split thick milk crackers, butter inside and toast just before serving.

Roast Turkey

Put dressed turkey into pan of water to which has been added 1 teaspoon soda to 2 quarts water. With small cloth wash carefully inside and out, rubbing skin well. Then rinse thoroughly, letting plenty of water run through carcass. Dry well. Lay turkey on back, season inside with salt and pepper and stuff breast till it is smooth and plump. Fold skin of neck down on back and pin with skewer. Stuff body, press legs close to body, hold firmly with one hand and with the other push thigh up into side. Fasten with skewer run through from one leg to other. Lay wings close to body and fasten with skewer. Insert skewer under tail. Wrap cord around tail, bringing one end up on right side, wrapping twice around leg skewer, then up around wing skewer, across under back, repeating process on left side, bringing down and fastening at tail. Season all well and rub over with melted butter.

This should all be done the day before Thanksgiving, and if turkey is large it is well to bake for an hour the night before, leaving in oven as it cools off. Then start baking again about 8 o'clock in morning, keeping slow oven and basting frequently. While baking it should be laid first on one side, then on other, and as soon as browned turned on breast and left there until a few minutes before taking from oven, when it should be turned on back, allowing breast to brown.

Potato Stuffing

Two cups hot mashed potato, $\frac{1}{4}$ cup salt pork cubes, 2 tablespoons onion, 1 teaspoon poultry seasoning, salt and pepper, 1 cup cooked sausages cut in pieces. Cook the onion and the pork until yellow; add remaining ingredients.

Cranberry Jelly

Cook 4 cups cranberries with 1 cup water until tender. Press through strainer. To juice and pulp add 2 cups sugar and cook until ready to jelly (this requires but a few minutes brisk boiling). Pour hot into molds and let set over night.

Boiled Rice

Place in a double boiler $2\frac{1}{2}$ cups of boiling water and then add 1 teaspoon salt. Now add $\frac{1}{2}$ cup well washed, unpolished rice. Cover and cook until rice is tender and the water absorbed. Remove the lid and then

cover the rice closely with a clean napkin and cook for five minutes. This will fluff each grain of rice. Add butter when serving.

Creamed Onions

Remove the outer skins from 6 good sized onions and boil until tender, about 1 hour. Cover with $1\frac{1}{2}$ cups medium white sauce made by melting 3 tablespoons butter, rubbing in 3 tablespoons flour, adding salt and pepper and $1\frac{1}{2}$ cups milk or mixed milk and water, cooking few minutes.

Perfect Pumpkin Pie

(This recipe was first published in the Cultivator in 1910 and has since been printed many times on request. We think it might almost be claimed now as the Cultivator pumpkin pie.)

One of the poorest of all dishes is a pumpkin pie which is not what it ought to be, and one of the best is a perfect pie. The trouble is that in making it the ingredients are not rich enough; thick cream and plenty of eggs are really essential to its composition. This recipe is very nice: Get a small pumpkin and cut it up without peeling it; put it into a covered colander and steam till soft, and then remove the peel; put it into a dish in the oven and leave the door open till it is dry, but be careful not to let it grow brown or bake. Press it through the colander and measure; to $2\frac{1}{2}$ cups of pulp add 2 cups of cream, or very rich milk, 1 teaspoon each of salt, butter, cinnamon and ginger, 1 tablespoon of molasses, sugar to taste, and, after cooling and beating well, 2 well beaten eggs, or the yolks of four. Make a rich pie crust, line an extra large and deep tin, and leave an edge on top; pour in the pumpkin, bake slowly 40 minutes, or a little more, till there is a good brown crust on top; serve very cold, and all around the edge put large spoonfuls of thick whipped cream—a modern idea, but a great improvement on the old fashioned plan.

Fig Pudding

Delicious fig puddings may be purchased canned, but here is a good recipe: To $2\frac{1}{2}$ cups flour, sifted with 1 teaspoon soda, 1 teaspoon each ginger, cinnamon and nutmeg, add 1 cup molasses, 1 cup sweet milk, 1 cup chopped suet, 1 cup chopped figs and 1 cup stoned raisins. Steam in molds the size of pound baking powder cans, 2 hours.

Foamy Sauce. Beat whites 2 eggs until foamy, add 1 cup sugar, beat well, then add 1 cup scalded milk and juice 1 lemon. Water may be used instead of milk. To make yellow use the whole egg.

Hard Sauce. Cream $\frac{1}{4}$ cup butter, 1 cup powdered sugar, $\frac{1}{2}$ teaspoon vanilla, add $\frac{1}{4}$ cup heavy cream beaten till stiff.

CARVING THE TURKEY

Carving the turkey is a bugbear in many families. Here are simple directions that are worth studying and will "make carving a real pleasure."

Place the turkey or chicken so that the breast will be at the left hand of the carver. Insert the carving fork at the peak of the breastbone, plunging it down so as to gain good command. First cut off the leg with the second joint; then the wings on the side farthest from you. Tip the turkey from you and take off the leg and wing from the side toward you. Next carve thin slices from each side of the breast. Then remove the wish-bone from the carcass. Cut through the ribs first on one side, then on the other. With a quick turn of the knife, divide the front or breast from the back of the carcass. Now remove the fork, which has not been withdrawn from first to last. Divide the second joint from the drumsticks and make two pieces of each. Then divide the back, lower and upper half, at the second rib joint. The turkey is now ready for serving. At each helping give a portion of the dark and white meat unless a preference is expressed.

THANKSGIVING THE YEAR ROUND

A woman who has an almost old fashioned faith in Providence keeps who she calls her "thank offering box." Into this goes, through the year, from one Thanksgiving to the middle of the following November, a sum of money for every special joy.

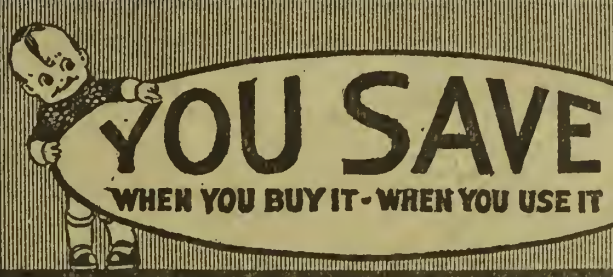

These offerings are not confined to

First: It is sold at a moderate price. You save when you buy it.

Second: It has more than the ordinary leavening strength, therefore, you use less.

Third: There are no failures—it always makes the sweetest, most palatable of foods.

Fourth: It is used by millions of housewives—leading domestic science teachers and cooking experts.

CALUMET BAKING POWDER

Fifth: It is the best Baking Powder that can be produced. Was given highest awards at World's Pure Food Exposition, Chicago; Paris Exposition, Paris, France.

Sixth: It contains only such ingredients as have been officially approved by the United States Food Authorities.

The finest quality Baking Powder—at the most economical cost. "The Biggest Bargain That Goes into the Kitchen Today."

Pound can of Calumet contains full 16 oz. Some baking powders come in 12 oz. instead of 16 oz. cans. Be sure you get a pound when you want it.

Calumet Nut Cookie Recipe

$\frac{1}{4}$ cup butter,
 $\frac{1}{2}$ cup sugar, 2
eggs, $\frac{1}{2}$ cup
flour, 1 level tea-
spoon Calumet
Baking Powder,
 $\frac{3}{4}$ cup chopped
nuts, 1 teaspoon
lemon juice.
Then mix in the
regular way.

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"Rivals the Light of Day."

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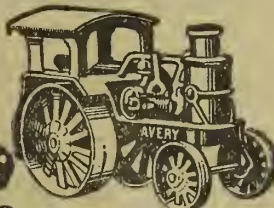
The Radiolite Mfg. Co.
Dept. 19-A, Milwaukee, Wis.

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POULTRY

POULTRYMEN—POULTRYMEN

Both the novice and the experienced poultrymen should have a copy of "Poultry for Profit" in order to prevent mistakes commonly made in the poultry business. This cloth bound book of 225 pages and 18 illustrations is written by Joan Koethen, a practical authority on all branches of the poultry business in California. Price \$1.00, postpaid. Cultivator Publishing Co., 115½ N. Broadway, Los Angeles.

For Sale—One million S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock for spring 1921 delivery. January prices \$5.00 per 25, \$10.00 per 50, \$18.00 per 100. Special prices 500 and 1,000 lots. Safe delivery live vigorous chicks guaranteed. No money in advance; pay on delivery. Order early chicks now and realize big broiler profits. Finest hatchery in the world. Established 1898. **MUST HATCH INCUBATOR CO.**, 438 Seventh Street, Petaluma, Calif.

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S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write **Henry Miller**, Supt.

S. C. White Leghorn Baby Chicks from my carefully selected, pure-bred stock of S. C. White Leghorns. Orders for spring delivery booked now at \$15.00 per 100, \$140.00 per 1000. Write for particulars. **J. R. Heinrich Poultry Yards**, Arroyo Grande, California.

White Leghorn Baby Chix from heavy laying **HOGANIZED STOCK**. Safe arrival of full count, live, strong chicks guaranteed. Price list and interesting literature on application. **The Pioneer Hatchery**, 409 Sixth Street, Petaluma, California.

In order to prevent mistakes and disaster in the poultry business every poultry raiser should familiarize themselves with the rules and teachings of "Poultry for Profit." It contains 225 pages and 18 illustrations bound in cloth and sent postpaid for \$1.00. Cultivator Publishing Co., 115½ N. Broadway, Los Angeles.

Chicks hatched in Petaluma Electric Incubators are a superior class, strong, vigorous, sturdy, grow rapidly, lay early. Our free catalogue tells the reason. **Petaluma Electric Incubator Company**, Petaluma, California.

Watch Us Grow—"Quality Chicks." We are now booking orders for the season of 1921. White and Brown Leghorns, R. I. Reds and Barred Rocks. Order early. **E. W. Ohlen**, Campbell, California.

Barred Plymouth Rocks—"Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. **Charles H. Vadden**, Los Gatos, California.

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Pure Bred White Plymouth Rock cockerels, U. R. Fishel strain, splendid birds. Prices \$5 to \$15. **Mrs. B. M. Jesch**, Fallon, Nevada.

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Place Your Order Now for chicks for 1921. Standard varieties. Prices right. Send for circular. **Madera Hatchery**, Madera, California.

Thoroughbred Barred Plymouth Rocks. **Mrs. M. A. Warren**, 36 Little Delmas Ave., San Jose, California.

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Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. **T. T. Miller**, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1000 pound dams and by World Record sires. **A. W. Morris & Sons**, Woodland, California.

Registered Guernseys—Well bred young bull calves and a few females for sale. **Russell S. Coe**, Sycamore Ranch, San Marcos, San Diego County, California.

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Registered Holstein Bulls, various ages at **Nuevo Stock Farm**, Wineville, California. **E. R. Stalder**, owner.

Registered Holstein Bulls of various ages for sale. **Millbrae Dairy**, Millbrae, California.

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Nursery Stock—We are offering commercial lots in Bartlett pear trees, at prices which will save you planters big money. Have apple, pears, prunes, cherry, strawberry, berries, etc. **NO AGENTS**. Try our Mail Order System. Send for Planters List. 30 years in business. **CARLTON NURSERY COMPANY**, CARLTON, OREGON.

For Sale—Oregon Plum and Dollar Strawberry plants now ready for delivery. \$2.00 per hundred, postpaid. **Burbank Thornless Blackberry** \$15.00 per hundred. **Seedling Black Walnut**, 2 to 3 feet, \$15.00 per hundred. **Ben Putnam Nursery**, Winters, California.

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For Sale—Budded English Walnut Trees grafted on Northern Black Walnut Stock. Address: **Italian Vineyard Company**, Guasti, California.

TREES—TREES—ALFALFA SEED Etc. Full stock—best varieties, now. Write **J. L. LAWSON**, San Jose, California.

Citrus Nurseries, **Murphy Oil Company**, East Whittier, California. Selected stock for sale; inspection invited.

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Men with Spare Time—Ranchers especially, can find excellent remunerative proposition, salary guarantee, working for an old reliable California company. Turn your spare time into cash. Write **J. H. Yetter**, 115½ North Broadway, Los Angeles.

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Real Good Berkshires, cholera immune. **Frank B. Anderson**, Box 724, Sacramento, California.

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Lamb's Durocs—Seven good sows with litters, twenty open gilts ready to breed, weaned pigs, two good boars. All of best blood lines. Priced right to close out the herd. Satisfaction guaranteed. **Elmer Lamb**, Ceres, California.

Big Type Durocs; herd headed **California Orion King**. Am offering excellent young boars at right prices. Inquiries solicited. **Harvey M. Berglund**, Dixon, California.

Big Type Durocs at **Keystone Ranch** by Top Sensation 1st, May Rose King. Winsor's Giant Orion. Choice March boars and gilts for sale. **E. F. Myers**, Lankershim.

Bred Sows and Gilts and young stock. Pathfinder and Great Wonder I Am breeding. Monthly payments if you wish. **Derryfield Farm**, Capital National Bank Building, Sacramento.

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Boyanna Big Type Durocs—Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. **J. Boyd Harrold**, Dixon, California.

Durocs—Spring gilts and boars. Sire **Great Model 233139**, dam **Orion Model Rose 663114**. **J. L. Stevenson**, Van Nuys, California.

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. **Hollow Hill Farm**. **B. W. Shaper**, Manager, Colton.

Winsor Ranch Durocs—Boars and bred gilts of our own and eastern breeding. Write us your needs. **Morris C. Allen**, Manager, Bonita, California.

High Class Durocs—Two fine early litters, 10 each. Dam 2nd in strong class. **Owensmouth**. See **A. V. Austin**, Van Nuys, California.

For Sale—To Close Out Splendid Stock grade Duroc sow and second litter pigs. **Rio Hondo Rancho**, Compton, California. Phone Compton 234.

For the Best in Durocs write **June Acres Stock Farm**, Davis, California.

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Big Type Poland Chinas, boars and sows, of April, May and June farrow, sired by Tourist Master the boar I got from Iowa last winter. I would also sell Presidents Model. He was first aged boar at Los Angeles and Riverside this year. **H. Christiansen**, Arlington.

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. **J. A. Crawshaw**, Hanford, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. **Ferguson & McKaig**, Orland, California.

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Farm Manager With Energy, Push and proven ability desires position on large ranch where results will be appreciated. Reference given if desired. Give general outline of your proposition when answering. **Box G**, Cultivator, Los Angeles.

Wanted to Purchase—Quantity of Myrobolan plum seed for nursery use. **L. E. Ineoldshv**, Lindsay, California.

Wanted to Purchase—One thousand seedling avocado seeds. **T. J. WALKER**, San Fernando, California.

Wanted—Small Avocados and Avocado seeds. Avocado trees for sale. **M. Witt**, 210 S. Hill, Los Angeles.

Wanted—Walnut Meats. **Fred L. Mitchell & Son**, 214 French Street, Santa Ana, Phone 551-M.

Wanted—Guernsey bull large enough for service; full details and moderate price. **G. W. Pickering**, Escondido, California.

Wanted to Hear from owner of good ranch for sale. State cash price, full description. **D. F. Bush**, Minneapolis, Minnesota.

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BUTTE CITY RANCH

Shorthorn Cattle, **Shropshire Sheep**, **Berkshire Hogs**, **Shetland Ponies**, **Bronze Turkeys**, **White Plymouth Rocks**. Stock for sale at all times. **W. P. Dwyer** and **W. S. Guilford**, Box C, Butte City, Glenn County, California.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. **J. J. Prendergast**, Redlands.

FOR LEASE

For Rent—Sugar Beet, Barley and Alfalfa Land for rent. Have also for sale one 75 H. P. and two 60 H. P. Tractors. **Montana Land Company**, Hynes, California.

FARM LANDS FOR SALE

California Fruit Farm

160 Acres \$8,000.

15 acres heavy bearing orchard, 400 apple, 300 cherry, 150 apricot, 100 orange, also mulberry, walnut, pecan, plums, 30 grapevines, no irrigation necessary, convenient to Rkt town; attractive bungalow, running water, abundant shade, attractive view; good sized barn; aged owner unable care for it longer, makes low price \$8,000, part cash, balance easy terms. Details this and other farms, groves California, many other states, page 92 Strout's Big New Illustrated Catalog Farm Bargains 33 States. Call or write for free copy. **STROUT FARM AGENCY**, 503EJ Wright-Candler Bldg., Los Angeles, California.

Agriculture—the Mother of Civilization, but who is going to do the work when the hired man quits or the boys go to the city. Don't try to farm so much land that you make life a burden. We have an ideal one man proposition to offer you. Soil and climate where you can grow anything that grows in California. Water piped under high pressure to your door for irrigation and domestic purposes. Good schools and churches in a 100% AMERICAN colony. A limited amount of cleared land for \$200 per acre. **PARADISE RANCHITA**, Paradise, California.

For Sale—30 Acres, all under cultivation, all in orchard and bearing except 3 acres orchard in one-third each of peaches, prunes and apricots. Four room bungalow, all hard finished. Barn, chicken house and garage. Electric pumping plant. Plenty of water. All farming implements go with the place. Can be bought for \$3500 cash, balance on easy terms at 6 per cent. Address Owner, **W. D. Stephenson**, Box 200, R. R. A. Corning, California.

Improved Stanislaus County—Farm sacrifice, \$130 per acre, long time to pay for it; 160 acres ten miles east of Modesto. Excellent neighborhood; abundance cheap water, both ditch and well; no alkali; new house, large barn, fenced; 100 acres leveled. Los Angeles owner must sacrifice. Somebody's opportunity. Write me, I will meet you on the property. **James Brown**, 423 Hollingsworth Building, Los Angeles.

For Sale—39½ Acres under government project, all level; 13 acres in good standing alfalfa, family orchard, good barn and other little buildings. Fig trees for 6 acres included. Balance in barley. Can be bought for \$12,000. Half cash, balance on easy terms at 6 per cent. Address Owner, **Andrew Peter**, Orland, California.

For Sale—20, 40 and 80 acres improved ranches located in Wasco and Shafter districts. Best raising grape land in the world. Produces fine long staple cotton; abundance of water; \$650, \$500 and \$350 per acre. Address: **Geo. W. Wright**, Wasco, California.

For Sale—55 acres of A-1 land near school and good town, near high school. Water goes with land. 30 acres of this land good for fruit or vines. Nine year mules two good saddle horses. **Chas. Hubbard**, Riverdale, California.

For Sale—80 Acres of Land suitable for Beets, Alfalfa or Grain, on paved road, ¼ mile from school. Artesian water at 200 ft. No buildings, land is all plowed. Will sell at the attractive price of \$10,000. **Herman Naumann**, Owner, Oxnard, California.

For Sale—10 acres, 640 Valencias, 300 Fuerte Avocados, 11 room house, garages, water, gas, electricity. West of Charter Oak. Address Owner, Box 56, Charter Oak, California.

For Sale—Ranches, Homes, Acres, free list. **Wilson Bros.**, Santa Cruz, California.

Bishop Land Co. can furnish from 5 to 1200 acres of the best land in the Valley. Address **Bishop**, California.

For Sale—¾ acres, irrigated, young orchard, small house, well-box. Address **I. H. Behymer**, Yucalpa, California.

Alfalfa, Orchard and Delta Lands. **Alex. Murdock**, Brentwood, California.

MACHINERY

For Sale—Used ranch material, windmills, pumps, tanks, irrigating pipe, pipe fittings, cylinders, rods. Write for our "Special Bargain" price list. **Demmitt Co.**, Upstairs, 120 N. Main, Los Angeles.

For Sale—Merry Garden Tractors. Circulars and demonstration free. **Dwight E. Smith**, L. A. County Agent, 1645 North Normandie Avenue, Los Angeles.

For Sale, or Exchange for auto or cows. 1913 2-ton Moreland Truck, stake body, cab, good tires, good running shape. **H. Beatty**, RD 3, Santa Ana.

For Sale—Case tractor in good condition, 9-18 model. **L. F. Raftery**, Owensmouth, California.

For Sale—Saunders 50-inch tractor disc plow in good shape; \$250 cash. **Fleming Bros.**, Friant, California.

TURKEYS

Earl E. Sanders, Modesto, breeder of Mammoth Bronze turkeys and Single Comb White Minorcas, is looking orders for eggs, chicks and breeding stock. Route D, Box 1880.

Choice Breeding Stock—All ages. Order early. **A. W. Ganger**, Dos Palos, California. Breeder of Mammoth Bronze Turkeys.

Thoroughbred White Holland Turkey Toms, fully matured for breeding purposes, \$10. Praise Pheasantry, Fair Oaks, California.

Large Number of Choice Bronze Toms and hens, also geese and herding Collie Dogs. Shipped from St. Helena and San Miguel. **John G. Mee**, San Miguel.

Bourbon Red Turkeys, Buff Orpingtons. **The Ferris Ranch**, S. Reservoir, Pomona, California.

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One ply \$1.50, 2 ply \$2.00, 3 ply \$2.50 complete with fixtures. Rubber roof paint 50c per gallon in 5 gal. lots. **ANGELUS ROOFING & PAPER CO.**, 766-768 So. San Pedro St., Los Angeles. Broadway 5401

SEEDS AND PLANTS

Strawberries—1,000,000 plants leading varieties; 200,000 Cuthbert raspberry; 100,000 Black Cap Tips; 100,000 Loganberry tips. Order now low prices. Also 100,000 choice peach seedlings — will graft in plums or prunes on contract for fall delivery 1921. Lafayette Nursery Company, Lafayette, Oregon.

For Sale — Best rooted grape vines of Thompson, Malaga, Emperor, Sultan, Muscat and Flg Trees of Callmyrna, Black Mission, Adriatic and red wonderful Pomegranate Trees at cheap price. This stock is growing at Madera, Delano and Cutler. P. O. Box 605, Dinuba, California—S. K. Hahn and Company.

For Sale—Post Paid—
Los Angeles Lettuce Seed \$3.00 lb.
Winningsstadt Cabbage Seed \$3.00 lb.
Stratagem Seed Peas 13c lb. f.o.b.
Admiral Seed Peas 15c lb. f.o.b.
M. H. Stein, R. 1, Box 100, Gardena, Calif.

Cory Thornless Mammoth Blackberry—Strong plants; dozen \$3.00 postpaid. Also have phenomenal Loganberry, gooseberry, currant, and Giant Crimson rhubarb. MOUNTAIN PASS NURSERY, Jamestown, California.

Postpaid, Brandywine \$1.75; Oregon and Ettersburg \$0. \$2.00. Booking orders for Corys and Burbank Thornless, 35,000 sold. Order quick. Bishop's Nursery, Highland.

Brandywine Strawberry Plants from stock which produced \$3,000 worth of berries from acre this season. Price reasonable. Lon King, 1158 West Fourth, Riverside, California.

Rhubarb Plants—Wagner's Giant 1 year, per dozen 50c; per hundred \$4.00. Wagner's Giant, 2 year, per dozen \$1.00; per hundred \$8.00. Seed per pound \$5.00. Currier Bulb Co., Santa Cruz, California.

Cory Thornless Mammoth—Largest and best blackberry; ripens early; few seeds. Write for descriptive price list. Get plants from William Mortenson, Route A, Box 209, Lodi, California.

For Sale — Strong Mountain Grown Brandywine and Klondyke strawberry plants at two dollars per hundred, postpaid. B. BRYAN, Camp Baldy, Calif.

Pumpkin Seed — Mixed Pumpkin Seed, good germination, 25c per lb. Aurora Seed Mill, Stockton, California.

Sweet Peas—Our special California mixed lb. 75c postpaid. Bancroft Seed Co., Coyote, California.

Strawberries — Plant 'em now. Cash Nurseries, Sebastopol.

MISCELLANEOUS

NEW PINE LUMBER FOR SALE
Will sell delivered or at yard:
250M 1x6 S1S1E common
100M 2x5 S4S common
50M 2x6 S4S common
50M 2x10 S4S common
50M 2x12 S4S common
Also 400,000 ft. 1-in and 2-in. once used denailed form lumber.
B. R. Lakin, 926 Orange St., Los Angeles. At rear of new Arnold Garage Building. Phone 15637. Ask for Mr. Lakin or Mr. Busby.

WANTED. DAIRY HERDS
to consume our alfalfa hay. Dairy opportunities unexcelled on the Newland Project. Never failing water supply, great variety of crops. 1920 alfalfa crop 100,000 tons. Ideal climate. Good dairy market. Leasing opportunities or feeding contracts available. Address: NEWLANDS PROJECT ALFALFA ASSOCIATION Fallon, Nevada.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

Business Opportunity—For Sale: Dairy route of 550 customers and all equipment including Ford truck, 3 wagons, 2 horses, cans, bottles, etc. Route located in interior city, 6,000 population, no competition. Address Box No. 20, Cultivator, Los Angeles.

Good Agents can make \$150 a month selling sponge rubber insole and arch supports. Combined relief for tired, aching feet and callouses. A. B. Dyer, 834 N. Madison Street, Pasadena, California.

Hay For Sale—One to five cars of choicest dairy Alfalfa (Wasco weights). Baled, ready to deliver at any time on A. T. Santa Fe. Joe Altringer, Box 542, Wasco, California.

I Have Cash Buyers for salable farms. Will deal with owners only. Give description and cash price. Morris M. Perkins, Columbia, Mo.

For Sale — Choice Nevada alfalfa hay. Eliminate the middleman, deal with producer. For prices address C. W. Stock, Fernley, Nevada.

Spanish Peanuts—Only \$4.40 for a 40 lb. sack. James McKee, Riverside, California.

If You Want to Sell or exchange your property write me, John J. Black, Iowa Street, Chippewa Falls, Wisconsin.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

FERTILIZER

Gypsum and Lime—Price Right Order early for prompt delivery
H. B. Matthews, 1010 N. Madison Ave., Pasadena.

RABBITS

Pedigreed Flemish Giants—Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

her own joys, but each time some member of her family bobs up from some threatened woe, into the box goes the money offering of thanks.

Not the same amount is given each time, and rarely large sums, for the woman is not rich, but a nice little sum is realized.

This is devoted to giving someone a happy Thanksgiving day. It does not always go into the regular channels. As the woman says, the poor and hospitals are usually well cared for in holiday seasons.

Sometimes a homestick girl in a strange city is given car fare home for the Thanksgiving gathering she would otherwise miss. Once a music lover was given a season ticket to the symphony concerts. Again a doctor's bill that had worried a young stenographer who had her mother to support was quietly paid.

In speaking of her pretty custom the owner of the thank offering box said: "Never have I known what thankfulness really meant until I started my box and saw the joy my thankfulness brings to others."

Such a box, besides cultivating one's bump of gratitude and making others equally grateful, cannot but afford great pleasure and interest in the spending. It is a gracious thought one more woman could profitably put into practice.

HINTS FROM HOUSEKEEPERS

Condensed Milk Mayonnaise

Thought perhaps the following recipe, which is a favorite of mine (not original with me), might be of interest to Cultivator readers, especially since eggs are bringing high prices: Beat ¾ cup condensed milk well, then add slowly, a little at a time, ¾ cup oil, beating all the time. Mix 1 teaspoon dry mustard, 1 teaspoon salt, 1/3 teaspoon paprika and a dash of pepper dissolved in 1½ teaspoons vinegar. And add this to above the last thing. The milk and oil will not thicken with beating as when egg is used but will do so when spices and vinegar are added. One advantage in making the above is that it never curdles.—Mrs. B. J. Wandrey, San Diego.

BEING THANKFUL

Being thankful is the gentle art of sowing well in thought as well as in the tilling of the soil. Kindness, laughter, freedom from unnecessary worry and all that goes to make the world a good place to live in forecast a harvest of goodness in the Thanksgiving time of life. We should be thankful for what we have as well as for what we hope to gain. Being thankful, however, should not be a matter of set time nor place. Make every day of the year one of thanksgiving and see how much better and bigger the day officially designated as such will seem. There is a big bond uniting all of us, for we are at best but workers in a common cause, pulling a common load and walking the same highway to the end of time.

GET READY FOR CHRISTMAS

The Cultivator offers this week opportunity to get patterns of some fascinating toys and dolly clothes. Every youngster gives its best love to the soft cuddlesome home-made rag doll or pussy cat. Don't you remember the grimy, disreputable old doll that always went to bed with you because it was so soft and comforting? These patterns give a chance to make for your own or somebody else's little one a toy or a set of doll clothes that will be loved and treasured.

NO AFFILIATION WHATEVER

"Don't you think that young man is afflicted with a swelled head?" "No," answered Miss Cayenne, "he's not afflicted with it; he enjoys it."—Edinburgh Scotsman.

HIDDEN BEAUTY

Sid Down—Why are silk shirts a luxury?

Stann Dup—Because you pay \$10 for them and your coat and vest cover all but a nickel's worth.—California Pelican.

A DELICIOUS ROAST

The main point is to have whatever is chosen cooked properly. The rump or a three-corner cut of beef can be roasted to give as great satisfaction as an expensive piece if prepared as follows:

Rub the entire flesh surface with half a cut lemon, letting it absorb as much of the juice as possible. Set away in cool place for several hours, repeating the process at intervals. When ready to roast, dredge with flour and bake without adding any water till over half done, when a little, in which salt and pepper have been dissolved, may be poured into the pan. It is not wise to select a roast of less than five pounds, but if a smaller cut is bought, remember that the fire must be just that much hotter when it is first put in. Reduce the oven heat after the meat is thoroughly browned on all sides and allow 15 minutes to the pound.

SWEET POTATO WAFFLES FOR THANKSGIVING BREAKFAST

One cup of mashed sweet potato, worked through a sieve; 2 tablespoons of flour, ¾ cup of milk, yolk of 1 egg (well beaten), ¼ teaspoon salt, 2 tablespoons sugar, 2 tablespoons fat, melted; well beaten white of egg. Cook in well greased hot waffle iron.

WHY HE WASN'T PROMOTED

He grumbled.
He was always behindhand.
He had no iron in his blood.
He was willing, but unfitted.
He didn't believe in himself.
His stock excuse was "I forgot."
He wasn't ready for the next step.
He did not put his heart into his work.
He learned nothing from his mistakes.
He ruined his ability by half doing things.
He chose his friends from among his inferiors.
He never dared to act on his own judgment.
He did not think it worth while to learn how.
Familiarity with slipshod methods paralyzed his ideal.
He tried to make "bluff" take the place of hard work.
He thought it was clever to use coarse and profane language.
He thought more of amusements than of getting on in the world.
He didn't learn that the best of his salary was not in his pay.
Still he wondered why he didn't get on.—Chesapeake & Ohio Employees Magazine.

To be thankful for what we have is well, but to be thankful for what we hope to gain is better. The quality of the seed forecasts the value of the harvest, all things equal. We sow well and we reap as we sow. We sow poorly and of an inferior quality and our returns become burdens for us to bear.

In the matter of prosperity it is safe to say that the majority who till the soil have fared well during the past year. This is not due to any luck or chance, but is a simple tribute to their energy and intelligent application of principles in which they have faith.

The man who has faith may move mountains. He who lacks faith in himself lacks faith in mankind, for most of us at our best are but reflections of what is good in others.

No work is done at its best until it is done in an atmosphere of thanksgiving. We can all of us surround our work with the cheery atmosphere which our Father has breathed into all His works.


NOT INFORMED

Jones—"Do you ever play golf, Miss Sportleigh?"
Miss Sportleigh—"Mercy, no, Mr. Jones. I don't know a thing about the game. I don't even know which end of the caddy you take hold of when you start to hit the ball."

Foreman—"Ere, do you know 'Opkins carries twice as much as you at a time?"
Workman—"Yus. I've told 'im abaht it, but 'e will do it.—Windsor.

The Cultivator Patterns









BE SURE TO SEND SIZE CHRISTMAS GIFTS

2967—A Set of Toy Animals. — Cut in one size. The cow requires ½ yard of 27-inch material and the horse, ¾ yard of 36-inch material. Price 10 cents.

3061—Doll's Set.—Cut in five sizes for dolls: 16, 18, 20, 22 and 24 inches in height. Size 18 will require ¾ yard of 36 inch material for the dress, ¾ yard of 40 inch material for the cape, and ½ yard of 20 inch material for the bonnet. Price 10 cents.

2970. A Set of Pleasing Toys for the Nursery. —Cut in one size. Either style requires ¾ yard of 27-inch material. Price 10 cents.

2275—A New Dress and Hat for Miss Dolly. — Cut in six sizes: For dolls 16, 18, 20, 22, 24 and 26 inches in length. Size 24 will require 1¼ yard of 27-inch material for the dress, and ¾ yard for the hat. Price 10 cents.

2937. Set of Toys.—Cut in one size. It will require ¾ yard of 24 inch material for either toy. Price 10 cents.

2273—A Dainty Set for Dolly.—The pattern includes all styles illustrated, is cut in six sizes for dolls: 16, 18, 20, 22, 24 and 26 inches in length. The dress requires 1¼ yard of 27-inch material, the petticoat ¾ yard, and the combination ¾ yard for an 18-inch doll. Price 10 cents.

2300—An Attractive Set of Toy Animals.—The patterns are cut in one size only. It will require ¾ yard of flannel for the sheep, ¾ yard for the dog and ¾ yard for the pig. Price 10 cents.

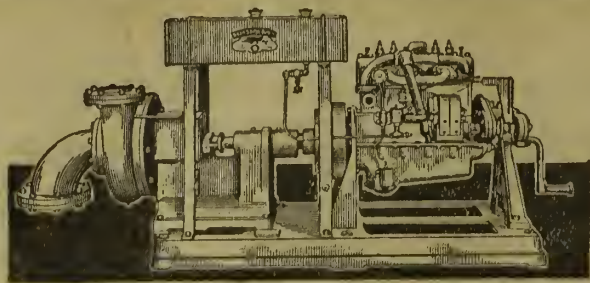
1902—Doll's Long Clothes Set. — Cut in three sizes: For dolls: 16, 18 and 20 inches in length. It will require 2¼ yards of 27 inch material for the dress, 1¾ yard of 24 inch material for the wrapper and 2¾ yards of 24 inch material for the coat, for an 18 inch doll. Price 10 cents.

PRICE OF ANY OF THE ABOVE PATTERNS 10 CENTS EACH

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Write your name and address plainly in full, give correct number and size of each pattern you want, and send 10 cents in coin or (1 or 2 cent) stamps for each number. In order to furnish our readers with the very best NEW YORK styles, all patterns ordered are filled in NEW YORK. Therefore, we promise to deliver all patterns ordered within TWO WEEKS; we guarantee safe delivery of all patterns. Address

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Los Angeles



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Distance to water below
surface of ground.....

Probable distance to water
when pumping.....

If water is to be raised a-
bove surface of ground, how
high? (Length and size of
pipeline).....

Volume of water desired
(Gals. per min.).....

(Inches).....

If you have pit, give
width..... length.....

depth.....

H. P. of motor or engine if
you have that equipment.....

Give total depth of well.....

Inside Diameter of well.....

Is well straight and true?.....

Is electric power available?.....

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Rural Route No.

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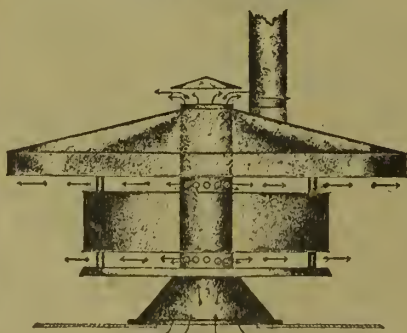
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Our Thanksgiving Turkey

By Jean A. Koethen



THE turkey is America's most notable contribution to the world's store of breeds. When the first Spanish explorers landed on the Atlantic and Mexican coasts they found these large, handsome birds, not so large nor so handsome as the ordinary farm turkey of the present, but still striking enough to command immediate attention, roaming the hills and valleys and forests of the new world. Their food consisted of maize, berries, fruits, grains, acorns, and especially, where it was to be found, the pecan nut, of which they were extremely fond. When the food was exhausted in one locality they moved on to pastures new.

Such a great discovery could not fail of immediate publicity, even in that day. As early as 1541, nearly 80 years before the Pilgrims landed on Plymouth Rock, the turkey was known in England, we are told, and in 1570 it was introduced into France and eaten at the wedding feast of Charles IX and Elizabeth of Austria. A book written by a Spaniard named Oviedo about this time describes the bird as having been brought from New Spain (Mexico) to the Islands of Castilla del Oro and there bred in domesticated state. However the thing happened there seems to be no question that by the beginning of the seventeenth century the turkey was well known all over Europe, was in great demand for high festivals, and was already an inhabitant of many a farmstead.

Governor Bradford and the remnant of that courageous little band which braved the dangers of a stormy sea for the sake of their religious convictions found the same birds, doubtless well known to them, in New England, roosting in trees, living on nuts and bugs and grass seeds, far harder than the turkeys of our day. They were the chief dish at that first Thanksgiving celebration in the fall of 1621, when the Pilgrim Fathers and their families met to celebrate the ingathering of a bountiful harvest, and at that second celebration in May of 1922 when the few survivors of that awful winter met to express their gratitude for succor in the shape of the good ship Lion loaded with supplies, and from that day to this the turkey, our very best as well as our most typically American, has been the Thanksgiving bird.

The Mexican turkey differs somewhat from the wild turkey of the United States, being a little smaller and duller in color, and the wild turkeys of both the United States and Mexico differ from the Bronze, which is their descendant, in that the feathers of neck and body are of a more markedly coppery bronze than in the domesticated bird, changing in some lights to green or purple margined with an opaque line of velvet black.

Breeds

Seven breeds of turkeys are recognized by the Standard: Mammoth Bronze, White Holland, Bourbon Red, Narragansett, Slate, Buff and Black. Of these the Bronze and Narragansett are the largest, the Slate and Bourbon Red next, then the Buff, White Holland, and last of all the Black. A few California breeders have tried the experiment of breeding all and have succeeded sufficiently to make an interesting display at several shows, but the Bronze, White Holland and Bourbon Red are the only ones that appeal to the public, and the Bronze, or Mammoth Bronze, as it is more correctly known, is far in the lead in popularity. The White Holland and Bourbon Red, being considerably smaller than the Bronze, are especially suitable for a trade which demands medium sized birds, and should be largely bred on farms where fancy points are not desired, but for some reason the Bronze holds its own against all comers and is the favorite in farmyard as well as showroom.

Possibly one reason for the popularity of the Mammoth Bronze turkey is that, while it often reaches a very large size, mature males not infrequently reaching a weight of 40 pounds or more, without careful breeding it degenerates in size quickly, so that the

average size of the young male at Thanksgiving is only around 16 pounds, and many birds go to market that have not attained this weight even. Since size appears to be largely a matter of breeding, breeders no doubt argue, why try another breed when you can get any size you want in the Bronze?

Mating and Breeding

Lack of vigor in the young stock has been the one hindrance to the spread of turkey culture. In many sections of the Atlantic coast where turkeys were formerly bred by thousands hardly one is to be seen, and here in the West turkey culture is sporadic and uncertain. This year a farmer's wife has a fine flock. Next year you go back for your Thanksgiving dinner, and there isn't one on the place. Why? "Couldn't raise them. Lost too many poults."

We call it blackhead, and experts are constantly experimenting, hoping to find some method of feeding which will keep the blackhead microbe from developing, but there are those who say we must look farther back than that, that the disease blackhead is only a symptom and must be treated at its root. Edward Brown, the English authority, says: "I have no doubt whatever that the most potent reason for weakness in poults is due to the use of immature stock, a fact which is becoming recognized by breeders, though not nearly to the extent necessary. It is generally accepted that a turkey does not attain maturity till it is nearly three years old. That being the case, from that age onward should be the period when the birds will transmit to their progeny the greatest amount of constitutional vigor. On the other hand, if mated before maturity is attained, or rather before it is approaching, and such mating is continued in successive generations, gradually lessened powers are the result."

"A safe rule," Mr. Brown says, "will be not to use yearlings of either sex as breeders, but to regard that as the period of growth. Matings should be made when the birds are two years old and can be continued for three years. If either bird is younger it should be the male. An active two year old male can be used with a score of hens, reducing the number in succeeding years till ten is his final year's harem."

In selecting turkeys for breeding look for a large frame, a deep keel, long sternum and stout legs, abundantly covered with strong thick muscles. If only the skeleton is large, heavy weight is not desirable. Hens weighing 16 to 17 pounds and toms weighing 20 to 22 will produce quicker growing poults than fat specimens weighing several pounds more.

In mating it is extremely important that the tom be not related to the hens. Many experts believe that in breeding is one secret of the weakness of young stock. They argue that even if the breeder send a long distance for his tom he cannot be sure that he is not distantly related to the females, and that where breeding is carried on, as it is in some communities, year after year, the different breeders or farmers buying eggs or males from each other with the idea of improving their stock, it is only a question of time till all the stock in that neighborhood is related. Some of these experts see in the importation of wild stock the only relief for the situation, but unless some of this wild stock is kept free from intermixture ever this is only a temporary relief. Breeders who have tried the wild stock find that the poults are far less susceptible to disease than poults from domestic stock and that when domestic and wild stock are crossed the vigor of the poults is in proportion to the amount of wild blood in the mixture.

The attaining of vigor in poults of domesticated stock is a problem of which a good many experts are working, and so far without marked success. Adult birds are more vigorous and healthy than chickens, but the young must be fed and cared for with solicitude and exactitude, and even then, between the experts who advise opposite methods we are in great confusion of mind. One says: "It is

overfeeding that kills." Another, "Underfeeding is worse than overfeeding." Another, "Feed nothing but boiled egg," and still another, "No egg at all, but cottage cheese," while a third condemns both egg and cottage cheese and feeds Johnny cake. Doesn't it look as if Mr. Brown might be right, and errors in breeding are more fundamental than errors in feeding? Where is the Moses who will lead turkey culture out of the darkness and confusion in which it is bogged into the light of rigid adherence to scientific principles in both breeding and feeding?

Poultry Queries

Conducted by J. A. Koethen

Why Not More Eggs?

I have 60 White Leghorn hens which I feed Egyptian corn and wheat morning and evening, dried bread at noon, dry mash before them all the time, ten acres of alfalfa to run on, fresh water daily, roosts and house swept and sprayed daily, new straw in nests every morning, skim milk all the time, but production has fallen off from 55 eggs a day in May to 14 in October. It seems to me that with this care I should have more eggs. Is it because they are winter layers or because there is something wrong with my feeding?—Subscriber, Chowchilla.

Neither one. Your hens are very fortunate indeed to have such perfect care, and they are repaying your care handsomely. There are very few flocks that can show an average of nearly 25 per cent among mature hens, as I take yours to be, in October. You say "they are about through molting, but most of them have very thin feathers," and in that sentence you answer your own question. Very few hens can make eggs and feathers at the same time. They have to stop laying in order to put the protein in the feathers. I think your hens have laid rather too well and that is why their feathers are thin. Now they just have to let up on the laying and get ready for winter. If I were you I would give them a moist mash once a day to tone them up a little. Mix the dry mash with sour milk and feed about two o'clock, just what they will clean up in 15 or 20 minutes. You might also add a little oil cake meal to the dry mash, and a handful of sunflower seed as often as you can to the scratch feed. Sunflower seed is expensive, but even a little helps. This additional protein will hasten the growth of the feathers.

Winter Pasture

What may I plant that will make the best winter pasture for chickens?—Subscriber, Kingsburg.

Most poultrymen in this section plant barley in their chick runs in the fall, so that it is several inches high when the chicks begin to come on. If it is too high they will not get so much good of it, but even then they like to run in it and hunt for bugs. If you can plan your planting so that it will be so tall that they can not kill it off immediately and not too tall for them to eat, there is nothing better. Rape is also very good, grows quickly anywhere, but is not quite so succulent.

Pure Bred Leghorns

What constitutes a pure bred White Leghorn hen?—C. J., Petaluma.

A pure bred White Leghorn is one whose ancestry is free from any taint or mixture with other breeds for a good many generations back—I do not know how many, but so far that no foreign color shows in plumage or legs. The plumage should be absolutely pure white; shanks, beak and ear lobes yellow. If there is any color in the plumage or if the shanks are not yellow, as sometimes happens in birds with an admixture of Minorca blood, the bird cannot be called pure bred. White Leghorn chicks that are

pure sometimes show black spots in the first feathers but they whiten out in the adult fowls.

Ticks and Lice

Two years ago I moved from the city to a farm and of course knew nothing about poultry. I now have a flock of 300 chickens and 40 turkeys and so far have found a solution to every problem in your paper. My chickens have both ticks and lice. If zenoleum is good for ticks and sodium fluoride for lice, could I mix them together for a dip? I have 200 fine pullets that are developing dark reddish wart-like growths on their combs, beaks and earlobes. Do you know the cause and cure of this?—Subscriber, Tulare.

Not being a chemist, I cannot say what kind of a mixture zenoleum and sodium fluoride would make, but as this is not the season for dipping fowls it will be much safer and better to use them separately. The zenoleum should be used for painting walls, roosts and nests after you have cleaned them thoroughly with water. For ticks on the bodies of the birds, touching each tick with a feather or brush dipped in corrosive sublimate is considered the surest method of getting rid of them, but, as corrosive sublimate is a rather dangerous thing to handle, I would rather try greasing the birds well first with vaseline or lard. You will have to do this on a fairly warm day and keep them in a protected place till the grease has soaked in. The ticks that are not killed by the grease can be touched with corrosive sublimate. Those dark red warts on the combs of the pullets are chickenpox nodules. The only remedy that is advisable after the disease has developed is sulphur mixed in the mash. Get the dry powder, "flowers" or "flour" of sulphur, and mix in the dry mash, making it about five per cent of the mash. This is said to relieve the attack considerably.

CALIFORNIA EGG LAYING CONTEST

By Max Kortum

Santa Cruz, report for week ending November 7.

The hens are coming down the home stretch on the last lap. Bellows Brothers of Lakeside are sure winners with a lead of nearly 100 eggs. The moment of excitement is now centered on the pens of S. L. Gibson of Santa Cruz, D. B. Walls of Petaluma and the Enterprise Ranch of Chino, who are running neck to neck for second and third place. For second place the odds are in favor of S. L. Gibson, but it is about a stand-off between Walls and Enterprise who will come in third. Although Walls has a lead of two eggs, the Enterprise birds are laying heavier. D. B. Walls' "Pride of Petaluma," who has been the "leading lady" all through the year, laid her 291st egg on Friday, and according to her schedule she should lay five, if not six, eggs more before the contest closes. Up to date she has the wonderful record of having laid 5.7 eggs—almost six eggs—on the average for each of the 51 weeks that the contest has run.

The standing of high pens and hens up to the end of the 51st week is as follows:

High Hens: Walls, 291 eggs; Webb, Gibson, 2,021; Walls, 2,018; Enterprise, 2,014; Neef, 1,984; Gibson, 1,962; Rose, 1,927; Barker, 1,926; Wood, 1,894.

High Pens: Walls, 291 eggs; Webb, 257; Gibson, 254; Bellows, 251; Enterprise, 251; Peck, 251; Peck, 251; Neef, 250; Neef, 249; Pasquale, 249.

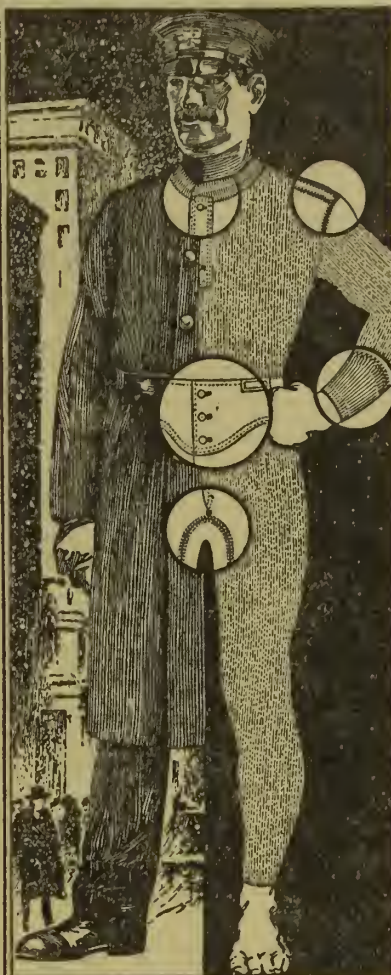
SONOMA COUNTY EGG LAYING CONTEST

The poultry department of the Sonoma County farm bureau started an egg laying contest at Petaluma on November 1. There are now 36 entries in the contest, which is the present capacity of the building.

At the end of the first week the standing of the five highest pens composed of ten hens each was as follows: S. G. King, Petaluma, 38 eggs; J. J. King, Petaluma, 37; V. H. Guthrie, Petaluma, 35; E. O. Hussey, Petaluma, 35; Ray Cole, Petaluma, 33; W. L. McAllister, Sonoma, 33.

There are three pens or entries of 12 hens each, two of which are alternates, placed together in each pen of the contest building.

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This extra-value underwear duplicates the men's Union Suits in all important features with added fleeciness.

Made in sizes 20 to 34, covering ages 2 to 16 years. Two to four year old sizes have drop seat. Four desirable colors.

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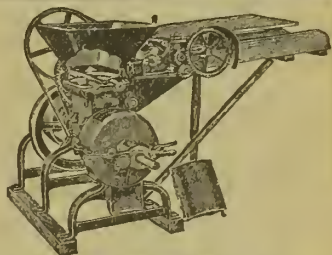
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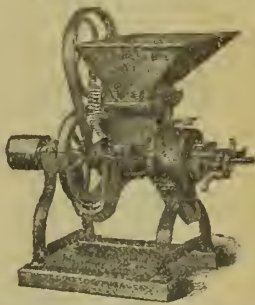


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FULL PARTICULARS IN OUR FREE BOOK
CHICKENS FROM SHELL TO MARKET
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PETALUMA, CAL.

Los Angeles Markets

Los Angeles, November 17, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 60 cents.

Dairy exchange price last week on extras:					
Nov.	10	11	12	13	15
'20	60	60	60	60	60

CHEESE

Brokers' prices
California flats, 28@30.

EGGS

Fresh extras cases included: Produce Exchange closing price, 88 per dozen; case count. Produce Exchange closing price 86 per dozen; pullets, Produce Exchange closing price 76 per dozen; pewee pullets, 59.

Dairy exchange prices last week on extras:					
Nov.	10	11	12	13	15
'20	87	87	88	88	88

POULTRY

Price to producers: Hens, lt., 34; heavy, 34@36; colored, 37; broilers, 40@45; roasters, 39; old roosters, 14; fryers, 40; ducks, old, 23; ducklings, Pekin, 3½ up, 25; others, 23; geese, 25; turkeys, live, young tom, 44; dr., 50; old, live, 40; dr., 41; hens, live, 40; dr., 41; squabs, 45@47.

Belgian hares, live, 16@21; old, 9.

LIVESTOCK

Los Angeles, Nov. 16 — Weighed and delivered on cars without foot or water: Hogs (hard-grain): 125 to 175 lbs. 14.00; 175 to 225 lbs., 15.00.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, November 16, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market firm; Stockton: Burbanks, best, 2.25@2.50 sacked; poorer low as 2.75. Idaho Russets 2.25@2.50 mostly. Sweet mostly 80@1.10 per lug.

Onions: Supplies heavy, market dull. Stockton: Whites 1.75@2.00; Browns mostly 1.35@1.50 per 100 lbs. sacked; Yellows: 1.25@1.35 cwt.

Garlic, lb., 12@14.

VEGETABLES

These are the actual prices obtained November 16 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky Wonder, 8@10; Limas, 5@7.

Beets: Doz., 40@50; sk., 1.75@2.00.

Cabbage: Supplies liberal, market steady, movement slow, wide range in quality. Best mostly 2@2½ per lb.; per field crate, best 1.50@2.00.

Carrots: Doz., 30@40; sack, 90@1.20.

Cauliflower: Supply liberal, field cr., 1.25@1.50 according to quality.

Celery: Doz. bunches, 90@1.10; cr., 2.50@3.00; Northern cr., 4.25@4.75.

Cucumber: Market firm; local, best, lug, 1.25@1.75, few high as 2.00.

Egg Plant: Lb., 4@6.

Lettuce: Field crs., 1.00@1.25.

Peas: Local, 13@15.

Peppers: Bells and Chills, lb., 3@5.

Rhubarb: Crimson Winter, best bx., 80@1.10.

Squash: Local summer, lug, 75@1.10; Hubbard, lb., 1½@2.

Tomatoes: Local lugs, best, mostly 40@60 lug.

Turnips: Per doz. 35@45; sk., 1.85@2.00.

DECIDUOUS FRUITS

These are the actual prices obtained November 16 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal; market firm. California bushel boxes Bellefleurs, 4 tiers, 1.75@1.85; 4½ tier, 1.50@1.60; Jonathans, fancy, 3.00@3.25; Delicious fancy, 3.25@3.75. Idahos and Utahs, loose Jonathans large, 6@7, small low as 5 per lb.

Bananas: Lb., 10½@11.

Cranberries: Black, bbl., 16.00@17.00; Late Howe, 18.00@18.50.

Grapes: Supplies liberal, market strong. Muscats, 10@12; Tokays, 6@8; Cornichons, 6@8; Malagas, 10@12.

Pears: Bartlett's, best, lb., local mostly 7@9; Northern mostly, 10@12.

Persimmons: Lb., 10@17.

Pomegranates: Price to grower f. o. b. Los Angeles, 5@8 according to size and color. Retail price 8@12.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.75@3.00; special packed brands, 3.50@4.00.

Lemons: Market dull, wide range in prices: Local stock: Packed, box, 2.75@3.25; loose, 1.00@1.50; lug, mostly 50@60.

Oranges: Supplies light, market firm. Valencias, packed, special brands 126s, 150s and 176s, 7.00@7.50, local packed, second grade mostly 4.25@5.00. Navels new crop, local packed, small sizes 5.00@6.00, special brands mostly 6.50.

HONEY

Demand light, movement limited, market unsettled, little change in prices. Carloads f. o. b. usual terms: regular 5-gallon cans white orange and white sage 17@18; light amber alfalfa 13@15. Light amber sage 13@14. Beeswax, 40@42. In smaller packages white orange 20; white sage 19@20; light amber alfalfa, 16@17½; light amber sage, 17½@18½.

NUTS

California Walnut Growers' Association announces prices on 1920 walnuts: No. 1, soft shells, 2½; No. 2, 1½; Budder, 25½; standard budder, 22½ per lb.

GRAIN AND FEEDS

Grain Exch. prices bid November 15:

Barley: 2.13½@2.15.

Milo: Carlots, 2.52½@2.25; Eastern, blk., 2.20.

Bran: Kansas, 44.50.

Wheat: Mixed, Utah-Idaho, 47.00.

Corn bulk, 2.28½.

HAY

Alfalfa Growers of California, report under date of November 17:

Market continues firm under good demand and moderate offerings. The general depression would affect us too in time, but even then there is no danger of the market for our product going to pieces, as we are in a relatively stronger position, that is, provided our association is strong enough to meet the situation. What we have to be prepared for in this connection is a rapidly increasing alfalfa acreage in the state. Alfalfa being about the only principal farm product which has kept its own in price, as a result of fairly intelligent distribution, has now become the center of attraction for the growers of cotton, beets, beans, barley, etc., many of whom are planning to go into alfalfa some on a large scale, up to 2,500 acres in some instances, according to the newspapers. Fortunately there is room for expansion of the alfalfa and dairy industries of the state, provided both industries keep step with each other, and provided that the distribution is well regulated. As we see it, with a strong association there is not much danger from that class of new growers who know what they are doing when they go into alfalfa and have the necessary means for going into it right; this class of men also knows that their success depends on a strong association and they will do their part to make it so. There is however another class of men who do not realize what they are doing when changing to alfalfa. They are usually hard up for money to start with, do not appreciate that it takes several times more money per acre than formerly to establish an alfalfa ranch, and that the returns during the first year, even at good prices, are quite small. The result will be that they are deeply in debt by the time their first returns come in, and if prices then are not exceptionally high, they are bound to go to the wall. I believe we can hardly be accused of being pessimists about the present or the future of the alfalfa market, but as far as we can see ahead at present, it certainly does not look to us as if we could expect exceptionally high prices for alfalfa during the next few years.

There were 1,000 tons received on the tracks in Los Angeles the week ending November 13, with 150 tons left over as against 750 tons the week before.

Rabbit Alfalfa41.00

No. 1 Dairy Alfalfa32.00

Standard Dairy29.00

Stock Hay25.00

Quotations by Nichols-Loomis Company.

Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats22.00@26.00

Barley16.00@22.00

Alfalfa22.00@28.00

Barley straw6.00@10.00

San Francisco Markets

San Francisco, November 16, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations:

Extras58½

Dairy Exchange prices extras this week and year ago:

Nov.	9	10	11	12	13	15
'20	57	58½	58	58	58	58½
'19	68½	68½	68½	68½	67	

Rets. wk. ending Nov. 15, 3,530 cents.

CHEESE

Dairy Exchange quotations:

Jack, full cream22@26

Jack, half skimmed17@20

Ore. Y. A.35

Cal. Flats32½

Oregon Trips30

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras94

Extra Pullets81

Undersized72

Dairy Exchange prices, extras this week and year ago:

Nov.	9	10	11	12	13	15
'20	89	89½	89½	89½	89½	94
'19	85½	85½	85½	85½	82	

Rets. wk. ending Nov. 15, 236,426 dozen.

POULTRY

The turkey market is showing weakness due to arrival of turkeys from Australia and promise of more to come.

Wholesale prices are:

Broilers, 15 pounds per dozen, 60@65.

Colored fryers—2 to 3 lbs., 37@38.

Colored young roosters (smooth), 2 to 4 lbs., 33, stargy, 25@27.

Old roosters (colored), 20@28; market firm.

Leghorns, young, 15 lbs. to 24 lbs. per dozen, 45@48.

Leghorn hens, 3 lbs., 35@37; under, 25; Eastern, 31@35.

Large colored hens, 38@40.

Young Pekin ducks, 30; old ducks, 23@25; young geese, 27@30; market easy.

Live Belgian hare, 23@25; dressed, 28@30.

Dressed Turkeys—Young, large, 50@55; other grades, 47@50.

Squabs—Large, 75-80 per lb., market

Pigeons—3.00@4.00 per dozen; market firm.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1000 to 1200 lbs., 9@9½; do. 1200 to 1400 lbs., 7½@8½; do, second quality, 6@6½; thin, 5½@6.

Cows and heifers: No. 1, 7½@8; second quality, 6@7; common to thin, 3@4.

Calves: Light weight, 9½@10; medium, 8@9; heavy, 8@8½.

Lambs: Milk, 9½@10½; yearlings, 7½@8.

Sheep: Wethers, 7½@8; ewes, 4½@5.

Hogs: Weighing 100 to 150 lbs., 13, 150 to 225 lbs., 14; 225 to 300 lbs., 13½; 300 to 400 lbs., 12½.

POTATOES AND ONIONS

Wholesale prices:

Silver, 1.70@2.50 for No. 1, 1.25@1.50 for No. 2; do, Oregon Burbanks, 2.25@2.65; Salinas, 3.00; Idaho Gems, 2.65; sweet potatoes, 2½@3 per lb.

Onions: Yellow, 70@90 per cental; Australian brown, 75@1.10; do, white 1.00@1.50.

Garlic: New, 6@8.

VEGETABLES

Wholesale selling price:

Beans: Lb., garden, 10@12; Italian, 8@10; Lima, 12@13.

Beets: Sk., 1.00@1.25.

Brussel Sprouts: 50@7 lb.

Carrots: 1.00@1.25 sk.

Cauliflower: 50¢.

Cucumbers: Cr. 2.50.

Cabbage: Lb., 1.

Celery: Cr., 2.00@4.00; doz., 60@75.

Corn: Sk., 2.00@5.00.

Egg Plant: Stockton, lug, 50@75; Livingston, 1.00@1.25.

Lettuce: Cr., 2.75.

Onions: Green, per bx., 1.50@2.00.

Peas: Lb., 13@15.

Penners: Lug bx., Stockton Bells, 75¢.

Spinach: 6.

Squash: Hubbard, 1.00@1.55 sk.; Marrowfat, sk., 1.00@1.25.

Tomatoes: Bx. fy., 1.50@1.75.

Turnips: Sk., 1.00@1.25.

FRESH FRUITS

Apples: King David, 1.75@2.50, Bellflowers, 1.40@1.60; choice, 1.25@1.40; grade C, 1.15@1.25; Rhode Island Green, 1.50@1.65; Jonathans, lug, 1.50@2.25; Newtown 3½ tier, 2.25@2.40; 4 tier 2.15@2.25; Spitzenburg, 2.00@2.75.

Avocado: Doz., 4.50@5.00; Blacks, doz., small, 1.00.

Bananas: Lb., 10½@11; red, 12.

Berries: Strawberries, 1.25@1.65 per drawer; raspberries, 75¢@1.00 per drawer; blackberries, chest, 12.00@17.00; Huckleberries, lb., 22@25 in boxes; 17@20 in bulk.

Cranberries: Per bbl., 20.00. Oregon, 4.50@5.00 box.

Figs: Double, 1.50@2.00; single, 75¢@1.00; White, 1.50@2.00.

Grapes: Malaga, 2.00@2.50; Tokay, 1.75@2.25; Muscat, 2.25@2.50; Cornichon, 2.50@3.00 per lug.

Olives: Lb., 10@12½.

Peaches: Per small box, 1.50@2.00; L. A. lugs, 2.00@2.25; Alameda, 2.50@3.25.

Pears: Winter Nellis, 1.75@2.00; Keiffer, 3.00@3.25.

Persimmons: Bx., 1.50@2.00.

Pineapples: Dozen, 4.00@5.00.

Plums and Prunes: 2.00@2.25 per crate or box; do, fancy varieties, 2.25@2.50; small lugs, 2.75@3.00.

Pomegranates: 1.50@1.75 per peach box; 2.00@2.50 per half orange box.

Quinces: Bx., 1.50@2.00.

CITRUS

Valencia Oranges: 7.00@9.00; Lemons, 3.25@3.75; Grapefruit, 3.75@4.00; Arizona, 4.25@4.75.

DRIED FRUITS

California Associated Raisin Co. prices:

Muscats: Package seeded, Sun Maid, 25 pound boxes, 20½ cents a pound.

Loose, 25 pound boxes, one crown, re-cleaned and floated, 20½ cents a pound; two crown, re-cleaned and floated, 23½ cents a pound; three crown, re-cleaned and floated, 24 cents a pound.

Layers, three crown flat pack, 20 pound boxes, \$4.40 box; ten pound boxes, \$2.40; five pound boxes, \$1.30 box.

Cluster, four crown pack, 20 pound boxes, \$4.70; ten pound boxes, \$2.55 box; five pound boxes, \$1.40 box.

Six crown flat pack, 20 pound boxes, \$5.50 box; ten pound boxes, \$2.95 box; five pound boxes, \$1.60.

Sun Maid, 20 15-ounce net cartons to box, \$5.20 box.

Sun Maid, 12 two-pound cartons to box, \$6 box.

Sun Maid, Imperial, four five-pound cartons to box, \$6 box.

Vineyard run, Sun Maid, 100 pound boxes, \$21 box (strapping extra, 19 cents per box).

Thompson Seedless, Sun Maid, re-cleaned, 25 pound boxes, 21 cents pound; 48 16-ounce packages, 21½ cents package.

Sultanas, Sun Maid, re-cleaned, 25 pound boxes, 20½ cents pound.

Figs: Fancy black, 25-lb. boxes, 12 lb.; extra choice black, 25-lb. boxes, 10 lb.; choice black, 25-lb. boxes, 9 lb.; fancy white, 25-lb. boxes, 18 lb.; extra choice white, 25-lb. boxes, 1 lb.

Prunes: 30-40s, 25-lb. boxes, 19 lb.; 40-50s, do, 17 lb.; 50-60s, do, 15 lb.; 60-70s, do, 13½ lb.; 70-80s, do, 11½ lb.; 80-90s, do, 10 lb.; 90-100s, do, 9½ lb.

Apples: Fancy, 50-lb. boxes, 14 lb.; extra choice, do, 10½ lb.; choice, do, 10 lb.

Peaches: Blue ribbon brand, 48 11-oz. to case, 10.00 per case; do, 24 2-lb. boxes to case, 11.00 case; extra fancy peaches, 25-lb. boxes, 22 lb.; fancy, do, 20 lb.; extra choice, do, 18 lb.; choice, do, 17 lb.

Apricots: Fancy, 25-lb. boxes, 30 lb.; extra choice, do, 26 lb.; choice, do, 25 lb.; standard, do, 22 lb.

Pears: Fancy, 25-lb. boxes, 20 lb.; extra choice, do, 17 lb.; choice, do, 14 lb.

BEANS

Jobbers prices:

Small white, 5 per lb.; large white, 5; pinks, 6; Limas, 8; cranberry, 6½;

Mexican Gravanzas, 8; Lentils, 12½; Blackeye, 7; Mexican Reds, 6½; Popcorn, 8; California Bayo, 9; split peas, 7; green peas, 4.

NUTS

Peanuts: Japanese, 10.

Pecans, 25.

Almonds: California Almond Growers' Exchange quote:

Nonpareil26

I. X. L.26

Neplus25

Drake18

GRAIN

Sales grain exchange November 15:

Wheat: 3.00@3.10; feed 2.90@3.05.

Oats: Red feed, new crop, 2.30@2.50.

Barley: New feed, 2.10@2.15; shipping, 2.25@2.35.

Shorts, 56.

Cincinnati: 2 lem. 1.50-2.65.
Baltimore: 1 lem. 2.40-3.20.
November 16
New York: 9 or., 3 lem. Val. 4.80-11.40, lem. 2.30-3.10.
Boston: 3 or., 4 lem. Val. 5.30-8.35, lem. 1.80-2.70.
Philadelphia: 3 lem. 2.25-2.90.
Pittsburg: 1 Val. 6.95.
St. Louis: 1 or., 2 lem. Val. 5.35, lem. 1.20-2.40.

GREAT CONVENTION WEEK

(Continued from Page 675.)

During the war when the government took over a large percentage of some of our dried fruits and canned foods there was such an obvious shortage of stock that canners and dried fruit packers in their effort to keep their goods out of the hands of speculators allocated the stock remaining among their former customers, giving them the opportunity of taking the goods at the opening price if they wanted them. It was impossible to guess at the cost of the goods in advance because of the ever advancing wages and constantly rising cost of materials; so such orders were entered "firm at opening prices," that is, if the buyer decided to take the goods he had to agree to take them at the price to be fixed later. Under ordinary conditions this would be an arbitrary proceeding, but when there was a shortage and practically every

order was reduced below the normal quantity, and when everyone knew that the trade conditions were such that the buyer could sell at a profit, there was little hesitation or complaint.

Fortunately, the raisin growers, peach growers and the walnut and almond growers have anticipated these conditions and have done consistent advertising. The prune growers, too, have done something and should do more. Various canners have been helping in their national advertising, all of which is helpful to the fruit industry and to the state of which the fruit industry is its principal asset. There is need of cooperation along these lines and with consistent effort we shall remove the present problem of underconsumption, as well as the impending problem of overproduction, which will involve the welfare of the whole state unless the conditions are frankly discussed, thoroughly understood and wisely handled.

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Yield of Walnuts

What would be considered a fair average yield in pounds per acre of a 15 year old English walnut grove planted 50 feet apart each way? Also what would be the yield of a fully mature English walnut tree? Up to what age are English walnut trees supposed to bear profitable crops?—Subscriber, Riverside.

The California Walnut Growers Association reports: "There are commercial walnut groves in the state of California which produce over a ton of marketable walnuts to the acre annually. There are many that produce over 1,000 pounds. The actual 1918 yield of the 922 growers reporting figures gave 949 pounds per acre for trees over 12 years of age, and an average of 500 pounds per acre for trees from seven to 12 years old. A safe estimate for business purposes is 900 to 1,200 pounds per year, per acre, for mature trees." Ralph E. Smith says in "Walnut Culture in California" that he knows of many seedling walnuts in the northern part of the state that are close to 60 years of age, but in the southern part of the state many trees and groves planted less than 40 years ago have almost entirely died out, largely on account of an uncertain or irregular supply of soil moisture. J. B. Neff says that where these old trees have been given care they are still bearing profitable crops. In fact, in France there are heavily bearing walnut trees 300 years old. These are roadside trees that have plenty of room for root growth.

Apricots Not Bearing

Will you please tell me what to do with my six year old apricot trees? They bore fruit three years ago but since then have not had any fruit. I water them about once a month and they seem to grow very rank.—Subscriber, San Dimas.

The subscriber does not give the variety of apricots so we are unable to give very definite information. They may have been severely winter pruned and gone largely to wood production or they may be of a variety which is not a good bearer in that section. For instance, the Early Moorpark is one of our very finest apricots but in some sections is a very shy bearer. It might be best to determine what variety they are and if the variety is a good bearer then perhaps by allowing plenty of growth to remain on the tree to make fruit sprouts it may be induced to set a crop.

WEATHER REPORT

San Francisco, Cal., November 13, 1920.

Stations	Rainfall		Temp.	
	Wk.	Season Norm.	Max.	Min.
Eureka	.99	8.28	5.70	62 36
Red Bluff	1.86	4.01	3.49	62 34
Sacramento	1.00	2.30	2.02	64 38
San Francisco	1.00	2.93	2.26	62 47
San Jose	1.02	2.77	1.71	66 38
Fresno	.24	1.23	1.26	68 41
San Luis Obispo	.81	2.09	2.23	68 42
Los Angeles	.80	1.70	1.23	72 46
San Diego	.10	.43	.81	66 49

Snow on ground at Summit 18.00 inches.

80 Highly Bred Registered 80
HOLSTEINS

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Thursday, December 16, 1920

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DAUGHTERS OF PRINCE GELSCHER WALKER KORN-DYKE, INCLUDING A 27 POUND 3 YEAR OLD

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Write for prices, stating quantity desired.

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It takes more than *honeyed* language to put your dairy-farm on a *moneyed* basis. It takes know-how! Breeding, cow-testing, feeding—that is the trinity of success in the dairy business. And—mind this: *Feeding* should not come last in your reckoning, either!

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Nature has provided alfalfa hay or pasturage for your cows—that's good! But it doesn't go far enough. Because alfalfa, although a cheap source of protein, contains *only half* the carbohydrates required. Hence the need of a concentrated grain feed.

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CALIFORNIA CULTIVATOR

and **LIVESTOCK** and **DAIRY JOURNAL**

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

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November 27, 1920

No. 22

Picking Oranges in Butte County



Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

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Saturday, Nov. 27, 1920

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EDITORIALETTES

There are times when we all feel we could materially improve the civil and even the criminal code of our state. Heretofore the farmers of the state have engaged in this pastime, or at least endeavored to influence legislators, and at every session of the state legislature various and diversified repeals, enactments and amendments have resulted. Beginning a year ago, the farmers in convention at Chico took first steps to bring together definite suggestions which should lead to more constructive agricultural legislation. The Agricultural Legislative Committee has now been in existence for over a year. This committee is bringing together and working out harmoniously suggestions which have come from all sections of the state and all, or at least many branches of California's diverse agriculture. This gives opportunity to those of us who have an idea as to how things should be run. We have no invitation from the committee to pass on suggestions, but we doubt not any constructive, workable suggestion which may be made by any farmer will be readily received. Of course any such suggestion should be something more than an expression of disgust with present conditions; there should be concrete suggestion which will result to the advantage of agriculture. The office of the committee is in the Ochsner Building, Sacramento.

The drouth is broken. The heaviest storm in a couple of years has visited the northern end of the state. The Sacramento and Feather Rivers broke their banks and thousands of acres of rice fields, ready for the harvesting, are flooded, and one report has it there will be a loss of at least 45 per cent in some of the rice producing counties. As we write, a second section of the storm seems to be moving down the state, which it is predicted will reach to the southern end.

* * *

It is now proposed to use the Panama Canal for shipping of citrus fruits. A bureau of the Exchange has been formed which will have to do with these canal shipments, and it is expected that a test shipment will be made within the next few weeks. With overland rates advancing and perfect refrigeration possible on shipboard there is no reason why a vast quantity of fruit should not go by way of the canal.

* * *

Imperial Valley cotton growers have already figured that their return from the season's crop will not be sufficient to cover the cost of the crop as it stands in the field. It is taking some nerve on their part to borrow more good money to hire more help to harvest and market this crop.

* * *

The National Rivers and Harbors Congress has issued its official call for its sixteenth convention to be held in Washington, December 8, 9 and 10. The time was when many of us felt that this organization was in existence to a large extent to hold jobs for a bunch of civil engineers whose work it was to direct the expenditure of vast sums on the waterways of the country. This may possibly still be true. However, with the fearful advance in freight rates and with highways making possible trucking of crops to river bank in many sections, it may be that relief may be secured, or at least partial relief, by encouraging congress to continue waterways improvement.

* * *

Nearly a dozen carloads of Californians are this week visiting in Mexico. The party is largely made up of Los Angeles tradespeople who are looking for extension of trade or an outlet for California productions. With the new president inaugurated and Villa subdued, as he seems to be, there is no reason why California and Mexico should not be the best of neighbors.

NEARLY DOUBLED

Notwithstanding the gentleman's agreement which has prevailed as to immigration of Japanese to the United States, California's Japanese population increased in the last decade, according to figures just given out by the census bureau, 28,840, or 69.7 per cent. The total Japanese population, as shown by the census, is now 70,196. The next state of the Union which has seemed attractive to the Japanese is Washington, which now has 17,110. Oregon's Japanese population is only 4,022. The number of Japanese women entering the state during the last decade is 25,832 as compared with 553, total number of Japanese women of the state in 1910.

Now come rumors from Washington that the new treaty being negotiated, or, as one rumor has it, already negotiated, provides that Japanese residents of this country shall be entitled to citizenship. Senator Phelan and others are sounding the warning and urging appeal to Washington.

ORANGES AND OLIVES

The fifth annual Oroville Orange and Olive Exposition has closed, and all agree it was one complete success and made a showing of semi-tropical fruits which was most interesting, especially to many Eastern tourists who attended. About the same distance from the north pole as is Philadelphia, Washington, Columbus, Indianapolis, Springfield and Denver, it was somewhat surprising to these visitors to witness the exhibits in the big pavilion and then to take a five minutes drive from that great structure across the Feather River and see the orchards from which the fruit came.

While the exposition was called the Orange and Olive Exposition, there were extensive exhibits of dried fruits especially of prunes and canned and processed fruits of nearly all kinds. The farm bureau made it an occasion for the gathering of centers from all portions of the country.

FARM BUREAU GATHERING

Secretary Mote of the County Agricultural Agents of the United States, writes of the annual convention of that organization in Chicago, November 29. Hoover and Secretary Meredith are both expected on the program. This is intended as something of a tuning up of the agents for the greater meeting to be held in Indianapolis, December 6-8, the convention of the American Farm Bureau Federation. This latter meeting has been declared to have promise of the greatest gathering of farmers yet brought together. The keynote of this great event will be cooperation. It is hoped that from it will come suggestions that may lead to closer organization on the part of all producers, and California will be cited many times as giving examples of successful cooperation. Farm bureau delegates from California are Messrs. Walker, Peters and Sawyer. The Cultivator is promised an early report of this great convention.

RICE GROWERS ORGANIZING

The Southern Rice Growers Association is one of the later cooperative organizations to get into successful operation. Rice growers of the South, as well as of California, have been finding rough sledding. They could neither borrow, nor sell, nor even gather sufficient money to bear harvesting expense. Now they are organized and able to borrow \$3 per bag on No. 1 and No. 2 "Blue Rose." Further, the organization is leading to something unheard of in good old Louisiana. The governor, staunch, life-long democrat, has developed into a thoroughgoing protectionist, and it appears the democrats generally are insisting that a protective tariff is no longer a partisan issue, and it is very probable that a tariff commission will settle the entire matter for us, so producers of California fruits and nuts, California beans and raisins, will have hearty support from Louisiana, Tennessee and a number of other representatives of the former "Solid South."

We are asking as to whether prices really are coming down. Mr. Spellmeyer suggests that "A Little Ford shall lead them" and that everything will soon be tumbling. The financial letter of one of the state's largest banks has suggested that "The government set the example of waste" and we have engaged in a "financial debauch." Meantime the farmers' prices are definitely taking a tumble. Likewise the shoe dealer is remarking, "It will be many moons before the present low priced hides are made into lower priced shoes."

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Millions of these permanent steel fence posts have been installed on Government property, along the right-of-ways of leading railroads and on thousands of America's best farms.

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Los Angeles Cal.

A New Log Saw

Cuts Faster, Costs Less, Makes
More Money for Users and
Works While You Rest

A new improved power log saw, now being offered, outdoes all other log saws in cutting wood quickly and at little cost. A new 4-cycle, high power motor equipped with Oscillating Magneto—no batteries to fail you—makes the saw bite through logs faster than other log saws. It finishes its cut and is ready for another before the ordinary saw is well started. This log saw—the Ottawa—has a specially designed friction clutch, controlled by a lever, which starts and stops the saw without stopping the engine. Others have imitated, but no other power log saw has this improvement just like the Ottawa. The Ottawa Log Saw sells for less money than any power saw of anything like its size.



Patent Applied For
The Improved Model, 4-H.P. Ottawa Log Saw

One man wheels this outfit from cut to cut and log to log like a barrow. Separate attachments cut down trees and cut up branches. Extra power lets the engine do heavy work of all kinds. Owners of the Ottawa Log Saw laugh at coal shortages and are making big money with ease, the machine doing the work. 35 to 50 cords cut any day, rainy or dry, by one man, are normal figures. And wood is approaching \$20 a cord! The Ottawa is compact, simple and durable. It sells for cash or easy payments and is guaranteed. If you have wood to cut the Ottawa Log Saw will be the most satisfactory machine you've ever owned. We suggest that you write the Ottawa Mfg. Co., 2744 Wood St., Ottawa, Kas., for their complete new illustrated book and prices, sent free to all readers of this paper.

BULBS

For fall and winter planting; also flower seeds for fall sowing. New catalog now ready, mailed free upon application.

Now is the time to sow
California Wild Flower Seeds
New descriptive price list mailed with above. Ask for catalog.

THEODORE PAYNE
345 S. Main St., Los Angeles, Cal.

California Cultivator

Vol. LV, No. 22

Los Angeles, November 27, 1920

One Dollar Yearly

ARIZONA'S sixteenth annual fair has passed into history. The total attendance was somewhat less than last year. The first two days, for some unknown reason, the visitors that filed through the gates were fewer in number than for many years, but for the four last days, ending with a tremendous crowd on Saturday, the 13th, the attendance was very good.

Exhibits were in most cases up to the usual standard. Some exhibits were surprisingly good and others noticeably light. With the decline in the dairying industry it was expected that the exhibit of dairy livestock would be slim. However, there was a splendid exhibit of fine dairy cattle, and from some of the most popular breeds, Holstein, Friesian, Jersey and Guernsey. This exhibit was especially encouraging as it showed that there is still a great deal of good stuff in the Salt River Valley. One herd of Guernseys was shown from California. Practically all the others were Arizona bred. There were some very good beef cattle, particularly Herefords. These were shown by a number of breeders, one large exhibit coming from Texas.

The exhibit of swine outnumbered any other exhibits in this class ever shown at the Arizona state fair. New hog barns were built several years ago, but these were inadequate to accommodate the number of hogs and the overflow was taken care of in the sheep barns, there being only a few sheep this year. The largest exhibits of swine were the Duroc-Jerseys shown from the Southwest Cotton Company. Large exhibits of Berkshires were shown from the Italian Vineyard Company of California. Quite a few hogs were shown from the boys and girls club contests, which added to the numbers on the exhibit. Speaking of the boys and girls exhibits there naturally follows mention of the high school boys state judging contest, in which more than 75 boys from the various high schools of the state were competing for honors in judging swine, horses, cattle and sheep. The Southwest Cotton Company offered a prize boar pig to the boy making the highest score in judging hogs. Phoenix high school received second with Omer McCullough, third.

A special premium offered by the Arizona Packing Company for the best pen of three fat hogs went to the Southwest Cotton Company on their nine months old pigs. These three animals were ideal for the making of juicy hams, bacon and pork chops. The judging was well done by Prof. E. B. Stanley, head of the animal husbandry department of the University of Arizona, and was handled in a creditable manner. Some good Poland Chinas were exhibited, and there were also a few Muir Foot hogs.

The agricultural and horticultural building was well filled and attracted a good deal of attention. Most counties were well represented, but it is becoming more and more apparent each year that there are two things which must be done. One is to build a new agricultural building and the other is to appoint a paid superintendent to keep in touch with the several

Arizona's Sixteenth Fair

By M. E. Bemis

counties and see to it that exhibits of produce are saved when matured and kept over and preserved for the fair.

Most of the counties made creditable showings. As usual, Yavapai County was awarded first prize, Coconino second, Maricopa third, Graham fourth, Greenlee fifth and Navajo sixth. The exhibit from Yavapai was particularly fine, with many varieties of fine apples. A considerable variety was also shown in corn. Santa Cruz made a unique exhibit of a portfolio made of ears of corn fashioned after the style of the entrance of the Santa Cruz

Healy, Mr. Doty of the Florence high school and Pinal County Farm Agent Turville. This year Pinal County won a profusion of first and second prizes, the most important of which were blues for alfalfa, sweet potatoes, milo, broom corn, pumpkins and seeds.

The supervisors of Maricopa County, through Fair Commissioner C. E. Fauley, offered nearly \$4,000 in special prizes. This offer was announced too late to call out as large a number of exhibits as if it had been announced earlier, but the Maricopa County exhibit was very good, particularly good

the best exhibit and the special county prize of \$100 offered by the county board of supervisors. G. R. Finch of Tempe took second premium in this class. In the short staple contest Albert Morris of Safford took first premium with his plant entry and Mrs. William Strawn of Safford captured first honors on short staple seed. Mrs. Strawn also had the best exhibit of short staple seed cotton in the lot.

Phil Ensign of Maricopa County was awarded several prizes for one of the finest individual cotton displays ever entered in a state fair. He took first prize on his exhibit of lint cotton, which the judges pronounced the best sample of this kind in existence. Ensign also went home with the sweepstakes in the Pima variety class, the \$100 special offered by the board of supervisors, the \$50 fair premium and two cups offered by the Southwest Cotton Company here. Another cup offered for the best lint display went to Ensign. The donor was the McCail Cotton and Oil Company.

Prize for the best exhibit of seed cotton was taken by Mrs. Anna Carnapas. The premium was offered by the Arizona-Egyptian Cotton Growers. A sweepstakes cup offered by the Chandler farm bureau for the best combined Pima exhibit was taken by J. W. Skousen of Chandler. Displays of Pima seed and lint cotton were particularly strong this year. There were 65 line entries and 35 competitors for the prizes offered for the seed class.

The poultry exhibit was the largest ever shown in Arizona. There was a good variety and the quality of the birds was most excellent in most cases. The three largest varieties shown were the Barred Rocks, Rhode Island Reds and Rhode Island Whites. Curiously enough, the display of White Leghorns was very small. With the popularity of this well known breed it would appear that there would be some breeders anxious to show the stock at an exhibit of this kind. The poultry was ably superintended by W. F. Fetterly. The judges, were N. E. Luce of the United States government poultry experiment station at Glendale and F. E. Emerson of California.

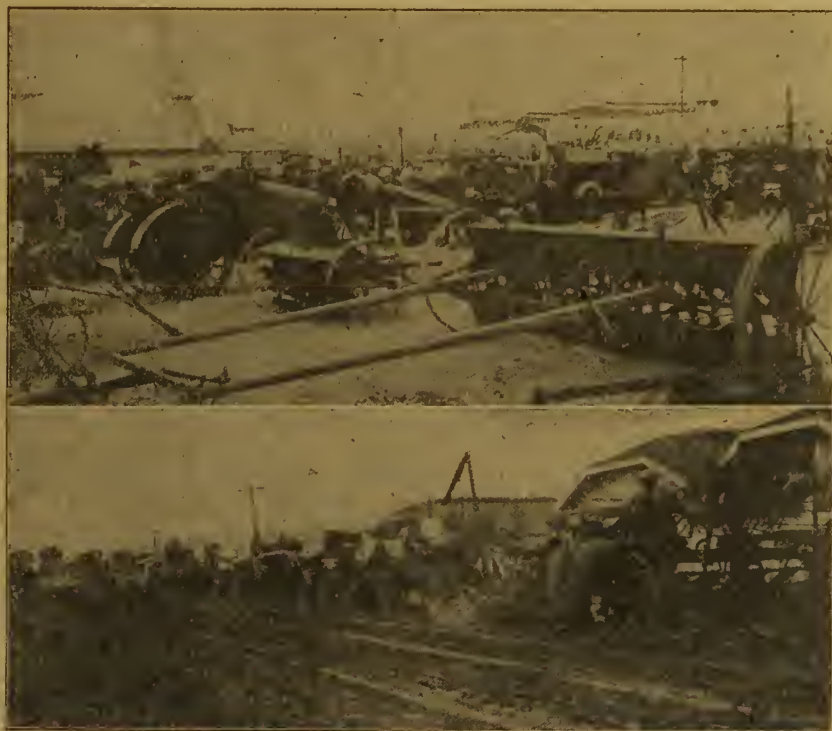
Farm implement dealers were given liberal space and this was one of the liveliest parts of the fair grounds. Many different kinds of tractors and other farm implements were shown and prospective buyers were given opportunity to study the advantages of competent machinery.

A week of real Arizona weather was most favorable for the fair management and left nothing to be desired in this respect.

STATE MARKETING OFFICIALS

The annual meeting of the national association of state marketing officials will be held in Chicago at the Auditorium Hotel, Monday and Tuesday, November 29 and 30.

The national association of state marketing officials was organized in February, 1920, when state marketing officials throughout the country gathered at the Murray Hill Hotel, New York City, for the purpose of forming an organization in order that their closer association might enable these men to better meet their problems of marketing.



On Arizona State Fair Grounds

Upper photo shows implement and power field on fair grounds while the lower shows procession of tractors just beginning to form. Photo by Bemis.

County court house. The quality of the rather small display of fruits, grains and vegetables bears witness to the fact that Santa Cruz, besides her special qualities as a grazing state, has important possibilities as an agricultural one. Pima County made a good display and showed that they are raising forage as well as other products. An unusual interest has been taken in dairy cattle in Pima the last year, therefore feed crops, as well as other crops, are of more interest than ever before. Pinal County, the region of the San Carlos, attracted attention by the design of her front piece, which announced in letters of cotton that she is the cradle of Pima cotton. Her display also included some 30 samples of this product, one of which received third premium for lint, and another fourth for plant. The balance of the exhibit consisted of almost everything grown. A special feature was some extra fine lettuce nearly ready for shipment, bearing a card announcing that it was planted September 9. Some 25 ribbons added color to the exhibit and bore witness to the excellence of the products. Credit for the display was given to the county fair commissioner, Ted

In some lines. When it is considered that cotton is grown on about two out of every three acres in the Salt River Valley this year, the exhibits shown were very creditable. One of the unique exhibits of the Maricopa County booth was that of Miss Grace Peck of Phoenix, who showed 59 varieties of fruits and vegetables grown in one home garden. Miss Peck was awarded a special prize for unique display and also a number of blue ribbons.

The cotton exhibit was made a separate department from the agricultural exhibit and this, under the supervision of H. C. Heard, Maricopa agricultural agent, was one of the special attractions of the fair. In addition to a display of cotton plants, seed cotton and cotton lint, there were shown some special cotton growing tools which were of interest to the farmer. Judges of the cotton exhibit were S. H. Hastings, W. G. Weiss and Warren H. Parker for the plants and Frank Devine, F. R. Behrends, B. B. McCail Jr. and Mike Moore for the lint. The following awards were made:

Prize plants entered by C. W. McCally took the regular fair premium of \$50 for the best, the Chandler cup offered by the farm bureau there for

Agricultural News Notes of the Pacific Coast

Northern California

Sacramento County pear growers have had serious trouble with blister mite.

R. L. Stanley has been appointed assistant county agent of Butte County.

Northern California citrus sections expect to ship out about 300 carloads of oranges.

The Santa Rosa County farm bureau started an egg laying contest at Petaluma November 1.

Fifteen per cent of the barley acreage of Yolo County this season will be planted to Mariout.

The Bangor district of Butte County reports some high class avocados ripening the past month.

Shipments of refrigerated turkeys from Australia have lowered the market on home grown fowls.

A large wool buyer estimates that at least 90 per cent of Pacific Coast wool is still in producers hands.

Oroville sent out its first shipment of Navels the first week of November. It went to Winnipeg, Canada.

The Placer County farm bureau marketing exchange has supplied several carloads of feed and seed to members.

Solano County recently made its first carload shipment of persimmons. They were marketed in New York City.

Placer County farm bureau centers will give special attention to formation of pig clubs among the youngsters.

Rice harvesting has been discontinued because of heavy rains last week. Serious loss was suffered by many of the growers.

Hop growers are generally reported to be holding for a 70 cent market. Some of the more optimistic insist, however, that they will secure a dollar.

The beekeepers of Butte County recently met at Chico and discussed marketing problems. The idea is to secure more favorable return from 1921 crop.

Formal opening of the Ehmann olive plant at Oroville took place on November 15, which was also the opening day of the Oroville Orange and Olive Exposition.

Farm bureaus of the Sacramento Valley have organized for cooperative marketing of fat hogs. Sales have been held at Woodland, Willows, Red Bluff and Durham.

Rice growers at Willows have made complaint against the warehouse service and representatives of the Pacific Rice Growers Association have been sent to investigate.

Rains are preventing shipments of hay. Plowing and seeding for next season's crop are proceeding as rapidly as possible excepting in sections where too much water prevents.

Rice producers and millers are conferring and endeavoring to secure for the growers more just price. Sales have been made as low as \$2.40 for No. 3 paddy. No. 1 is supposed to command \$3.08.

It has been advocated that an association of Western and Southern states be formed to discuss and devise means of restraining Asiatic immigration, and to preserve America to the white race.

Central California

175 bales of cotton was grown this season at Kearney Park.

Orange growers near Exeter, Tulare County, have begun picking.

The California Associated Raisin Company reports 1920 crop entirely sold.

The raisin and peach associations will join in erecting an office building at Fresno.

Rains through the valley have brought reassurance as to next year's water supply.

Beekeepers of Santa Cruz County have decided to organize a department in the farm bureau.

Oranges in the foothills near Springville, Tulare County, are said to be coloring up rapidly.

The second year of the farm bureau egg laying contest at Santa Cruz started November 1.

A local meeting of the farm bureau will be held at Happy Valley, Santa Cruz County, November 27.

At the farm bureau auction held at Tegner, November 2, 168 hogs were sold at from ten to 12 cents.

Farm bureau meetings will be held in Kern County at Weed Patch, December 6; Kern Delta, 8; McFarland, 10.

Farm bureau meetings will be held in San Cruz County at Soquel, November 24; Santa Cruz, 25; Happy Valley, 27.

M. E. Farthing of Turlock will take charge of the Merced headquarters of the state farm bureau grain marketing division.

Hog auction under auspices of the California Farm Bureau Marketing Exchange will be held at Modesto, November 30.

The fruit and vegetable inspection service of the state department of agriculture has opened offices at Lindsay, Tulare County.

It is reported that Herbert Hoover has invested in a large tract of land in Kern County, which will be managed by Ralph Merritt.

Chester H. Rowell of Fresno has accepted appointment by President Wilson as member of the United States Shipping Board.

Beekeepers of Santa Cruz County, after meeting at Watsonville, have decided to organize a bee department of the county farm bureau.

Commissioner Rouillard of Fresno County reports necessity of condemning one car of early oranges which were below required sugar test.

The Peach Growers Inc. has increased its capitalization from \$1,000,000 to \$3,000,000. The official name will be changed to California Peach and Fig Growers.

Tulare County farm bureau has increased yearly dues from \$2 to \$7.50 and has set aside \$5,000 to meet expenses of consolidation of the farm bureau with the Public Utilities Association.

Six electric stamping machines for use in placing Christmas greetings, brands and other advertising directly on the orange itself, have been installed in Lindsay the past few days by the American Fruit Growers, Inc., and between now and the holidays all citrus fruit shipped will bear the message, "Merry Xmas, Lindsay."

Southern California

The Santa Ana Walnut Association has wound up its seasons' shipping.

The Riverside County farm bureau will hold all day meeting at Elsinore, December 9.

Vegetable and melon men of Imperial Valley have incorporated as a marketing association.

Ventura County is disappointed over another delay in opening the highway over the Conejo grade.

Superintendent of Rodent Control Wardwell is planning to use ferrets in the work in Orange County.

Growers of Blackeye beans in Orange County are reported making sales at between six and seven cents.

The Hemet Orange Growers Association expects to close its first pool on Navels the first of December.

An order has been issued to weights and measures officials of the state, fixing weight of berries in containers.

The Orange County Fruit Exchange has purchased building lot at corner of Glassell and Almond Streets, Santa Ana.

The Santa Ana Walnut Growers Association has closed its first pool. Gleanings will go to make up the second pool.

Manager Oliver of the Imperial Valley Growers Association is calling for cooperation of banking and farming interests in the valley.

The annual report of the San Dimas Fruit Exchange shows total fruit shipments for the year ending August 31 of 856,739 packed boxes.

Horticultural Commissioner Coy of San Bernardino County reports finding fully matured cotton boll weevil in box thrown by the roadside.

The California Fruit Growers Exchange has appointed a special committee to investigate practicality of making citrus shipments via Panama Canal.

The Charter Oak Citrus Association has paid to grower members an average f. o. b. price on Washington Navels of \$4.27; average on all fruit for 1919-20 season, \$4.05.

The San Dimas Lemon Exchange at its recent annual meeting reelected former board of directors. The year just closed is reported the poorest since the 1913 freeze.

Proposal has been brought before the Pasadena city council to erect a huge dam in the West Fork of the San Gabriel and connect it with Pasadena by an aqueduct.

The plant of the California Packing Corporation at Santa Ana has already put up 40,000 cases of pimentos. It is hoped to continue canning operations till after January 1.

There was a large attendance of sugar beet growers from Orange and Los Angeles Counties last week at a meeting called at Santa Ana to consider formation of association.

Director Davis of the U. S. reclamation service met irrigators at El Centro, November 22, to discuss report on Colorado River project which will be made in Washington the first of December.

Horticultural Commissioner Call of Ventura County has named December 8 as field day to be devoted to study of natural control of black scale. This field day was originally planned for Thanksgiving week.

The Coast and General

Oregon reports early sown wheat showing up well.

Salem, Oregon, is planning for a big poultry show this winter.

Total enrollment of students at the University of Oregon is 1,669.

Branding and steer gathering are over in the Pinedale section of Arizona.

The new gin at Summerton in the Yuma Valley of Arizona is ready for operation.

Rains over most of the grazing sections of Arizona have greatly improved pasture conditions.

An irrigation project in Sonora, Mexico, proposes to put water on more than 500,000 acres.

One of the features of the Arizona state fair last week was a big tractor and implement show.

Fair weather and mild temperatures on the ranges of Arizona have been favorable to livestock.

Reports from the Middle West are that farmers find it cheaper to burn corn than to buy coal.

Large shipments of both sheep and cattle have been made from the Holbrook and Pinto sections of Arizona.

Arizona orange growing sections have about cleaned up fruit. About half the grapefruit is yet on the trees.

Eighteen counties of Oregon have formed units of the state federation of farm bureaus. The membership is now 5,000.

Arizona's cotton crop is said to be much better than last year and, owing to the absence of storms, remarkably clean.

Salt River Valley in Arizona has just about finished its olive harvest. Growers report crop light but of excellent quality.

Practically all of the oranges have been gathered in the Salt River Valley of Arizona. They are bringing good prices in Eastern markets.

The Oregon Growers Cooperative Growers Association has been sending carload shipments of fancy apples to Sweden, England, Scotland and Canada.

Sugar beet growing districts of France are planning a large increase in acreage during the coming season, the present estimate being over 200,000 acres.

An international dairy exhibition will be held at Buenos Aires, Argentina, during the month of May, 1921. It will feature dairy breeds, dairy machinery and dairy products.

The Columbia Basin Alfalfa Growers Association has completed permanent organization. A. L. Larsen of Boardman has been chosen president and Don Campbell of Hermiston secretary-treasurer.

By a vote of two to one Oregon turned down the marketing commission scheme of regulating marketing associations in that state. It was generally opposed by the Cooperative Marketing Association.

The value of the work of the Rogue River Cow Testing Association, Oregon, has been recognized by the Ashland chamber of commerce by a substantial cash subscription to aid in carrying on the work another year.

A California Peanut Story

By Ernest Braunton

THERE are many parts of California where peanuts may be grown equal to any, for the writer has pulled and eaten them green, in a thousand acre field, taken them home, roasted them and eaten them whole, in home-made candies and cookies, and all of them were good. The plant itself is attractive and interesting, particularly interesting, inasmuch as it belongs to the great pea and bean family, yet its pods grow within the soil and do not split open as do other pods. Its native home is in Brazil where seven or eight other species also grow in the wilds.

But we must get back from the wilds and into California fields. Peanuts crop best in a free sandy loam where the soil is warm and well drained and the season is long, for if Jack Frost nips the plant development ceases. Soils containing much lime bring best results and if low lying and inclined to dampness should be given 500 or 1,000 pounds of lime per acre before planting. Wood ashes, being about one-fifth lime, are also excellent, for peanuts on poor soils need food, and 500 pounds per acre of complete fertilizer will assist much. Fresh manure should not be used on peanut land unless applied one year previous to cropping with nuts.

Where They Grow

The heaviest grower of peanuts in California is A. B. Miller, of Fontana, San Bernardino County, where, in many miles square of diversified orchard and field crops there were grown during the past summer 3,000 acres of "goobers" or peanuts. The soil is light and sandy but is plowed as deeply as possible and made smooth, for peanuts are planted on the level, not on ridges. Fertilizing has not been practiced yet for, like all legumes, the peanut draws heavy supplies of nitrogen from the air and thus figuratively feeds itself. The variety planted is the Spanish and the time of planting usually is from April 15 to May 15.

The nuts are planted in the shells, in rows 30 inches apart and from four to eight inches apart in the row. They are covered about two inches deep, not more. The machine used is an ordinary bean planter but with parts especially cast, of larger pockets, to

carry peanuts instead of the much smaller bean. The amount of seed necessary is 60 to 70 pounds to the acre and the machines plant four rows at a time. Eight inches apart is an ideal spacing for plants, but where one does not sprout the loss of ground is too great so the aim is to plant closer, or four to eight inches.

Culture and Care

As soon as nuts are planted the soil

corn and beans. Weed control is of course not a serious problem in real sandy soils. The later cultivations should throw the soil toward the rows so the nuts have a deep loose soil mass in which to develop.

When harvest comes, which on the Fontana ranch lasts six weeks, it may range from September 10 through October to November 15. The bean machinery is again used, the cutters har-

over the field, which throws five of the winrows or double rows into one, two from each side. This method also shakes much of the soil from plants and nuts, quite a necessary cleaning. The vines are allowed to lie for 24 hours before stacking or staking so they may somewhat dry.

Curing and Threshing

Peanuts are quickly and easily injured by rains so staking is resorted to. Stakes two by two inches and eight feet long are driven into the soil nearly or quite two feet where every 20th row had grown, or 50 feet apart. Down the rows they are placed 60 feet apart for the average crop. On the base of these stakes and eight inches above the soil laths 30 inches long are nailed on all four sides. A man with fork throws plants from big rows toward stakes and another stacks them. He begins by placing the "nutty" end on the cross bars and builds thus round and round the stake to the top. If rains come these stacks quickly dry out for the nuts do not touch the soil and their looseness next the stake leaves an air shaft through the stack so rains do not discolor and mildew cannot find harbor.

The threshing is done on the Miller ranch by three remodeled bean threshers which are fairly satisfactory. The yield for 1920 averaged 1,500 tons of nuts and the same weight of straw to the acre, the latter being of equal food value with alfalfa, to which it is a near relative. From the thresher the nuts go in sacks to the shelling plant, just installed under the supervision of an expert from Fort Worth, Texas. Here the sticks, stones, empty shells, pieces of vines, etc., are easily eliminated. Then the peanuts are made to dance on a vibrating deck which separates them, largely by specific gravity, (air being forced up through the perforated dancing floor) into three grades. Grade one is the whole nut, which retails as "salted peanuts"; grade two is the cracked and half nuts, which go to the confectioners and peanut butter plants. The shriveled and low grade goes to the oil mill.

California nuts are all marketed on the Pacific Coast and the demand is greatly in excess of the supply for large shipments arrive weekly from Texas and Georgia.



Harvesting Peanuts at Fontana

1. Cutting and winrowing. 2. Staking and stacking. 3. Hauling and threshing.

is irrigated, and at Fontana the second watering is given 30 days later. Then, in normal seasons, one or two more irrigations are given 15 days apart, depending on soil and season. Soil moisture is a very important matter and a deficiency will result in failure of an early crop though the plants are very responsive and will set a later crop if soil is wet enough. The general culture is similar to that for

vesting two rows at once, and by an arrangement of light iron bars in the rear the plants are thrown into one winrow. The crop is within two inches of the surface so knives do not run deep in the soil. Harvest time may vary with maturity for 90 per cent of the pods should be hard on the tip and the skin and meat of pinkish hue before ready for digging. After plants are dug an end delivery rake is run

"Driver Trouble"

By James De Camp

a reasonable period with a minimum of time and expense for repairs. The owner who bleats of knocks, burned out bearings, chipped gears and kindred ailments is usually forced to admit that his own or another's negligence has caused the trouble. If his complaint discloses a defect in the tractor the agency will gladly adjust the matter.

Tractioning, as some choose to call it, is an occupation requiring a certain amount of practical mechanical knowledge and a first-hand understanding of the capabilities and peculiarities of the gasoline engine. The matter with many tractor operators is that they are still living in the age of horseflesh and believe that all they need to do is hitch on the imple-

ment, throw in the clutch and go to it. The horse knew enough to stop when he became "all in," but the tractor is without volition and subject to the mercy of its driver.

Owners who operate their own tractors usually have taken the trouble to study the proposition thoroughly and have mastered the principles of lubrication, carburetion and ignition. Perhaps they have neglected the tractor schools and instruction books and learned their lessons through the painful medium of the repair bill, but nevertheless they understand that their "steel horses" require a certain amount of constant attention and consideration.

But the case is quite the reverse with the newly hired hand who doesn't

understand the difference between drawbar pull and horsepower. In these days of scarce labor the new man is usually greeted with acclaim and shown great consideration. In placing him on a tractor the owner too often seems content to ascertain merely that the employe knows how to start and stop the machine. He seems to take it for granted that some mystic force is imprisoned beneath the hood that will keep the tractor on the job whether it be handled intelligently or is mercilessly beaten and flogged. If trouble develops the owner usually bewails his misfortune in having selected this particular make of tractor and threatens to trade the machine for such and such a make which Jones or Smith is using.

When one stops to consider the vast amount of advisory literature and (Continued on Page 701.)

THE other day I was chatting with one of the largest growers of deciduous fruits in the state. More than a dozen tractors of various types and capacities are operated on his acreage. Our preliminary conversation concerned several specific makes of machines. Eventually we veered round to the subject of securing competent help and my friend made the following statement:

"We find that nine-tenths of our tractor trouble is driver trouble."

I believe that anyone who operates a brace or two of tractors will agree with me that he hit the situation in the solar plexus.

The manufacture of most automotive products has progressed to a point where almost any piece of equipment that is not grossly overtaxed or abused by neglect will deliver the goods for

WE WISH to announce the removal of our factory and General Offices to Downey road just north of Slauson Ave., where larger quarters and added facilities will enable us to render more efficient and quicker service in handling your orders.

We also wish to announce the appointment of the following distributors for our products:



**KILLEFER
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For Los Angeles County:
THE L. M. RAILSBACK CO.
115 So. Los Angeles St.
Los Angeles, Cal.

For Tulare, Kings & Kern Counties:
MITCHELL-PLATE CO.
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For Sacramento, Yolo & Solano Counties:
HARVIE HDWRE. & IMPL. CO.
920 Twelfth St.,
Sacramento, Cal.

For Sonoma, Napa, Mendocino, Marin & Lake Counties:
THE PROCTOR COMPANY
Santa Rosa, Cal.

For Santa Clara & San Benito Counties:
THE SAN JOSE TRACTOR & TRUCK CO.
445 West Santa Clara St.,
San Jose, Cal.

For Sacramento Valley & Northern California:
W. J. SHEPARD
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These Distributing Agencies have been appointed for your convenience. Get in touch with your nearest distributor or write the factory direct.

We cordially invite inspection of our new plant.

Visit us and see Killefer Deep Tillage Implements in the making and see the why of Killefer Quality and Killefer Efficiency.

The Killefer Manufacturing Co.

Address all Mail, P.O. Box 156, Arcade P.O., Los Angeles, Cal.

TEAGUE TREES

Are the product of Thirty Years' experience in growing Quality Nursery stock.

CITRUS TREES

Grown from Selected Buds. We are now booking orders for 1921 delivery. Place your order early and be sure of getting the best.

AVOCADOS

We handle all of the recommended varieties budded on hardy Mexican seedlings.

FEIJOAS

Excellent for jellies and preserves. Perfectly hardy and quite prolific. We can supply grafted plants from the large fruiting varieties. Send for our new descriptive Price List.



The R. M. Teague Nurseries

Box A San Dimas, California

Founded in 1889 by R. M. Teague

CITRUS TREES

Can supply A-1 budded citrus stock one and two years old, wholesale or retail, in any quantity.

Selected Buds From Fruit Growers Supply Co.

Honda Sour Seed Bed Stock for sale. Trees planted and guaranteed on contract.

YAMAMOTO CITRUS NURSERY

Ranch—Huntington Drive, San Marino, Calif. Phone Alhambra 781-W
Mail Address: R. F. D. 1, Box 666 San Gabriel, Calif.

TREE SURGERY DESERVES WIDER RECOGNITION

At present tree repair work has not received the recognition and approval from tree owners that it deserves. This may be due at times to unfavorable experiences with dishonest or ignorant tree surgeons, at other times to the reluctance of the owners to spend much money in preserving their trees, or from their ignorance of the benefits that may result when tree repair work is properly done.

Reliable tree surgeons are doing much in a practical way to educate the public as to the benefits of tree repair work. A few states have laws regulating tree repair work on a commercial basis.

The United States department of agriculture invites correspondence concerning methods of tree repair work and is prepared to advise for or against any particular method so far as experience and the results of experiments permit. Farmers Bulletin 1178 on tree surgery will be sent free on application.

Tree owners are urged to remember that the necessity for tree repair work 15 or 20 years hence may be reduced materially by promptly attending to the fresh injuries of today.

Most persons can, at least with a very little preliminary practice on the simpler types of work, undertake ordinary tree surgery provided they are familiar with the use of a gouge and mallet, a saw and a paint brush. A steady head and ability to climb will be necessary for work in the top of the tree.

A badly diseased or injured tree should be removed and replaced by a healthy one unless there is some very special reason for trying to preserve the tree.

Two axioms of tree repair work that should be borne in mind constantly are: that prompt treatment of freshly made wounds is the surest and most economical method of preventing disease and decay in the future, and that all wounds made in tree surgery should be cleaned, sterilized and protected from infection just as thoroughly as in animal surgery, and for the same reasons.

AMERICAN FARM BUREAU FEDERATION CONVENTION

The American Farm Bureau Federation will hold its annual meeting at Indianapolis December 6 to 8. This will be an outstanding meeting for agriculture and perhaps the meeting will eclipse any convention ever held by farmers in the United States. Some of the most prominent English and American agricultural leaders are on the program for the convention and nearly 200 of our best economic and farm leaders will be in attendance at the convention through special invitation.

California delegates who will attend are Dr. W. H. Walker, president of the California Farm Bureau Federation, Glenn County; R. B. Peters, San Bernardino County; George H. Sawyer, Stanislaus County.

SPRAYING DEMONSTRATIONS

The Los Angeles County farm bureau and extension staff of the agricultural college will conduct spraying demonstrations as follows: Monday, December 6, Gallatin schoolhouse, Downey, 2 p. m. (includes Clearwater and Hynes districts); Tuesday, December 7, 2 p. m., place of N. H. Denny, Lankershim; Wednesday, December 8, 2 p. m., Van Nuys, places of W. F. Clarke and C. W. Potter; Thursday, December 9, 10 a. m., place of Glen Allard, Zelzah; same date, 2 p. m., place of J. C. Craig, Owensmouth; Friday, December 10, 2 p. m., place of J. D. Radcliffe, Burbank.

In connection with the new packing house which has just begun operations near Phoenix, Arizona, yards for fattening cattle have been established which will accommodate 2,000 head of cattle at one time. All of the cotton seed from one of the mills has been contracted for to supply the feed yards.

More than 100 varieties of fruit are being experimented with at the Salt River Valley experiment farm near Mesa, Arizona.

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One Pump Will Do
Your Work

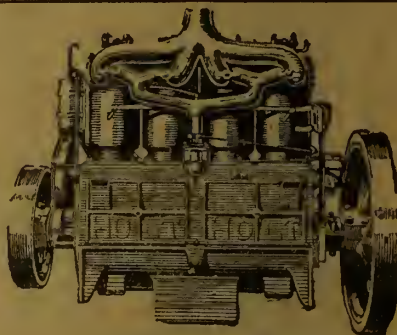
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POMONA MFG. CO.
POMONA, CAL.



For Heavy Duty

The "Caterpillar" Motor is entirely a Holt product, from the casting of the cylinders to the final testing and adjusting.

Designed especially for the extraordinarily severe service required of "Caterpillar" Tractors, the Motor is free from any weakness of design, construction or performance.

Neither adapted nor merely assembled, the "Caterpillar" Motor creditably shoulders the responsibility for the "Caterpillar" Tractor's power performance.

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CATERPILLAR
Reg. U.S. Pat. Off.

Bartlett Pear on Japan Roots

We still have some fine Bartlett as well as Bosc, Anjou, Comice, Flemish Beauty, Winter Nellis and other leading varieties of pears on Japan Pear roots.

These trees are grown on new soil never before in nursery stock, are well rooted, clean, healthy and hardy.

Hundreds of thousands of our trees in all parts of the West are now bearing profitable crops for their discerning owners.

We also carry a complete line of general nursery stock, all of which is guaranteed to please you.

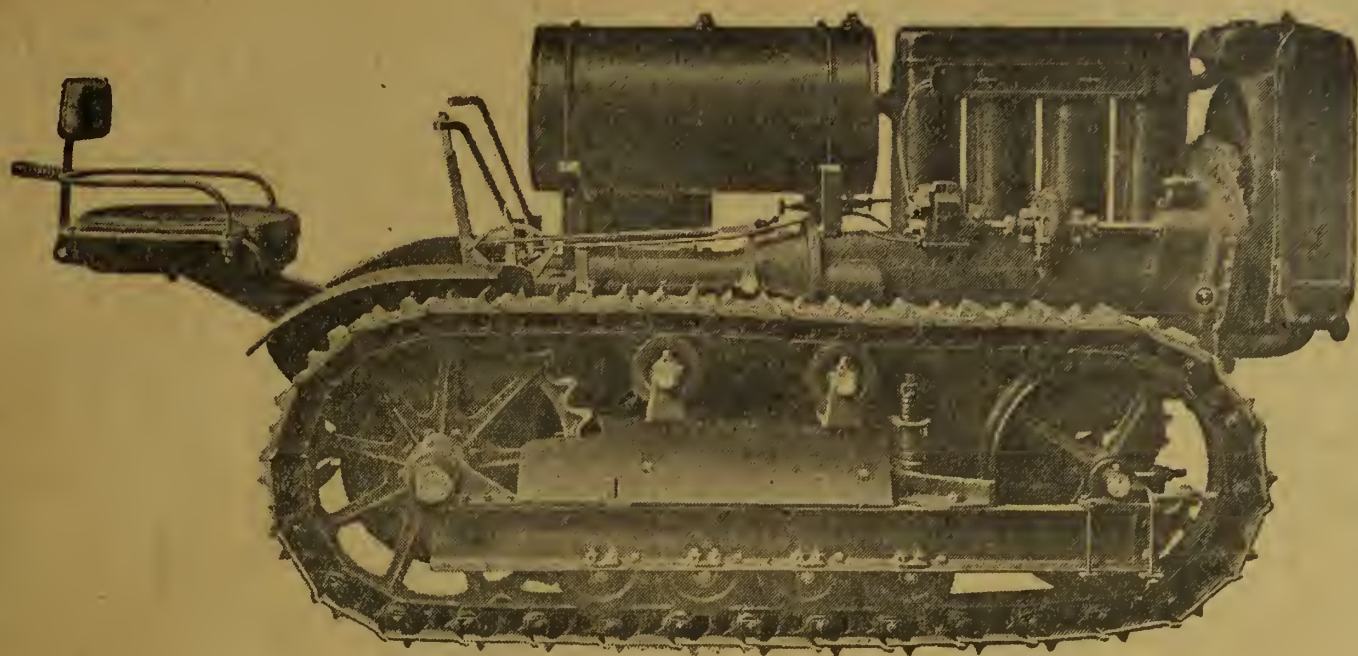
Remember our prices cover freight and packing charges.

Washington Nursery Co.

"Largest in the State"

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Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.



Advance Announcement

BEST **TRACKLAYER** "Thirty" TRACTOR

Due to the insistent demand of farmers and orchardists upon the C. L. Best Gas Traction Company for a high grade tractor that could be used where the power required did not justify the purchase of a Best Tracklayer Sixty, the Company has perfected a 20-30 Horse-power model of practically the same design as their famous "Sixty"

AFTER months of trials and tests, this model is declared an exceptionally high-grade tractor, and factory production has been started. The design and materials used in this new "Thirty" are the outcome of a decade of high-grade tractor-building experience, and the knowledge gained by the successful operation of the Company's various models in the field. With each model, improvements have been made until today the "Thirty" stands a mechanically perfect tractor.

This new model is especially adapted to orchard work. It is small, compact, turns in its own length and is very easily managed. It will also eat up practically any belt job to which you may put it.

Working parts of the "Thirty" are entirely enclosed, and all gears are run in a bath of oil. Anti-friction bearings are generously used at points where long manufacturing experience dictates. Manganese steel tracks insure long life to the truck units. All working parts, though enclosed, are easily reached. The power is generated from a Best motor

—a motor which has long been recognized as the leader in heavy-duty tractor motors—bore $4\frac{3}{4}$ ", stroke $6\frac{1}{2}$ ", valve-in-the-head. The following additional description of the new "Thirty" will prove interesting:

Power Rating: Twenty h. p. at the drawbar, 30 h. p. at the pulley.

Speed: High, $3\frac{1}{16}$ M. P. H.; low, 2 M. P. H.; reverse, $2\frac{1}{2}$ M. P. H.

Dimensions: Length (not including seat), 9' 4". Height, top radiator, 59". Width over all, $11\frac{1}{2}$ " shoes, $53\frac{1}{4}$ ". Width between tracks, $30\frac{1}{4}$ ". Ground clearance, $11\frac{1}{2}$ ". Drawbar, $16\frac{1}{2}$ " high. Track centers, $41\frac{3}{4}$ ". Standard equipment, $11\frac{1}{2}$ " shoes. Length of track on ground 60". Stationary Drive: Standard pulley, diameter 12", with a 7" face. Pulley speed, 800 R. P. M. Belt speed 2513' per minute.

Weight: 6700 pounds.

Write for full information, specifications, prices and name of nearest dealer.

Ready for Delivery about February, 1921



C. L. BEST GAS TRACTION COMPANY
San Leandro California

FAGEOL

WALKING TRACTOR

This tractor's unusual dependable performance and its low operating costs soon prove its value. The sole reason that there are no more in use is that the factory cannot supply the demand, notwithstanding frequent enlargements.

Wherever they become known, they are appreciated. In the 20 mile district around Pomona, Anaheim and Orange, there are more than 200 Fageols now working.

Exclusive Fageol Features
Increase their operating range
Reduce their operating cost

See your local dealer immediately. He has a new plan that will make delivery when you want it certain.

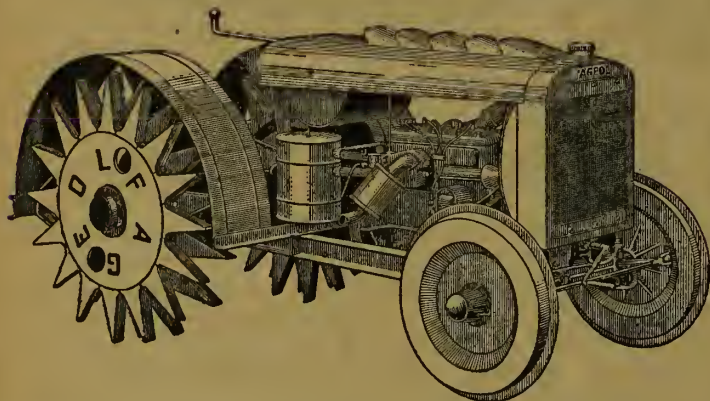
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Krogh Pumps are Absolutely Water Balanced

No End Thrust Possible

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The No Trouble Pump



Krogh Direct Motor Driven Pump

Fitted With Ring
Oiling Bearings
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We also build deep well
turbines, deep well plungers,
horizontal and vertical
pumps for mining, irrigation,
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"America's Largest Trade School"

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MAKE BIG MONEY
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Modern Auto & Tractor Schools, Inc.
Dept. 6. 711 Golden Gate Ave., San Francisco, Cal.

Storage of Perishable Fruits

California growers of small fruits are generally forced to sell at any price offered at the moment the fruit is ripe, but now it is found that even these small fruits which are so quickly perishable may, by refrigeration, be held for a long period. The plan has been tried of freezing the fruit, that is, instead of holding at 32-35 of putting it in a temperature of, say, ten degrees, and freezing solid. It is then held at this low temperature until time for canning or for disposing of it arrives. The fruit is not so attractive in appearance as the fresh fruit, hence may not be used exactly the same as fresh fruit on the table, but it may be used in cooking, for soda fountain syrups, etc.

The book is written by W. B. Cruess, E. L. Overholser and S. A. Bjarnason. In summarizing the bulletin, the authors say:

Soft fruits such as apricots, cherries and berries can be preserved at cold storage temperatures of 32 degrees Fahrenheit for not more than a week to three weeks. Present commercial methods of storing these fruits at temperatures lower than 32 degrees are not standardized and are in many cases unsatisfactory.

These fruits if held in water or

syrup at eight to 12 degrees retain their flavor and color very well for at least a year. Lots of certain of these same fruits held at eight to 12 degrees in open containers without liquid in time lose color and flavor. This is especially true of cherries, which become brown, and of apricots which in time develop a disagreeable "cold storage" flavor and a brown color. Berries in open baskets retain their color and flavor very well.

The crushed fruits with or without sugar retained their color and flavor almost perfectly at eight to 12 degrees for almost a year; the duration of these tests. This fruit was excellent for ice cream, for pies, for use as a jam on bread, for shortcakes and general soda fountain use.

Grape juice stored at eight to 12 degrees was very much superior to the juice preserved by pasteurization.

Former brewing plants are well equipped for undertaking the storage of soft fruits and fruit juices by the methods discussed and recommended in this report. The storage of these fruits should form a profitable method of utilizing such otherwise idle equipment.

The storage of these fruits will be studied further during the present fruit season.

Orange Standardization Law

The season is somewhat earlier than last year and it seems desirable at this time to point out the requirements of the fruit and vegetable standardization law for this commodity.

Oranges which are substantially at least 70 per cent colored at the time of picking shall be deemed properly matured for shipment or sale, irrespective of analysis of the juice. No oranges are permitted to be shipped to points in the United States or Canada which have not attained at least 25 per cent yellow or orange color before picking, and such stock shall be deemed properly matured for shipment or sale when the juice contains soluble solids equal to or in excess of eight parts to every part of acid contained in the juice, the acidity of the juice to be calculated as citric acid without water of crystallization.

Oranges when packed, shipped, de-

livered for shipment, offered for sale or sold, shall be virtually free from insect and fungus pests and from other serious defects. This means that the total defects shall not exceed ten per cent in any one package.

Shipments to foreign countries other than the Dominion of Canada do not have to meet the above requirements if made after the first day of November.

To summarize: As far as color is concerned, oranges that show 70 per cent color do not have to meet the 8:1 test. All other oranges must have attained at least 25 per cent yellow or orange color before picking and in addition must meet the 8:1 test. Early picking of green fruit and sweating for color should be discouraged. Such stock should be tested carefully by county commissioners in orange shipping sections.—F. W. R.

Legal Weight of Small Fruit

An order fixing a standard of weight for berries when sold in containers, and general instructions relating to their enforcement, have been issued to weights and measures officials of the state of California by C. G. Johnson, state superintendent of weights and measures. The order follows in full:

Therefore, in the exercise of the powers conferred in section 6 of the Weights and Measures Act, I hereby fix the following standards of weight for berries when sold, offered or exposed for sale in containers, and prescribe therefor the following tolerances, and any persons violating such standards or tolerances shall be guilty of a misdemeanor:

Strawberries (pint 33.6 cu. in.) 12 oz. minimum contents. Tolerance 3/4 oz. in deficiency, 2 oz. in excess.
Loganberries (pint 33.6 cu. in.) 12 oz. minimum contents. Tolerance 3/4 oz. in deficiency, 2 oz. in excess.
Blackberries (pint 33.6 cu. in.) 12 oz. minimum contents. Tolerance 3/4 oz. in deficiency, 2 oz. in excess.
Raspberries (1/2 pint 16.8 cu. in.) 8 oz. minimum contents. Tolerance 1/2 oz. in deficiency, 1 oz. in excess.

Berries when sold, offered or exposed for sale in baskets in accordance with the standards herein fixed and packed in crates, chests, drawers, or other carriers, shall, for the purpose of effecting the practical operation of these standards, be considered as subcontainers, and such crates, chests, drawers, or other carriers, wherein such standard baskets are packed, shall be considered containers within the meaning of the net container act, and shall declare thereon the number of baskets, together with

the standard of weight for berries when packed in containers as herein fixed.

Berries of a different variety than those for which standards are herein fixed, when sold in containers, shall declare on such container the true net weight of the contents thereof, as required by the net container act.

These standards of weight are now in force and effect.

For the purpose of inspection the following tare for berry baskets is recommended: Pint baskets, 1/2 oz.; half pint baskets, 1/3 oz.; half pint baskets, tin top, 1/2 oz.

HORTICULTURAL COMMISSIONERS ELECT OFFICERS

The State Association of County Horticultural Commissioners, which recently met in Fresno, elected the following officers for the coming year: William Gould of Yolo, president; H. J. Ryan of Los Angeles, vice-president; Fred Brosius of Sacramento, secretary.

A subscriber at San Luis Obispo, Henry A. Fritch, writes of having seen in Australia some of the fearful ravages of what we know in California as the Mediterranean fruit fly and urges all California producers to use greatest care to prevent this pest ever getting a foothold in the state. This pest has been intercepted at San Francisco and it is hoped it will never get a foothold. We know the quarantine service is exercising every possible precaution.



SULPHUR

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards 6 times they will not be affected by MILD-DEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand and Fleur de Soufre, packed in double sacks, are the fluffiest

and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100% pure, in double sacks, for Dry Dusting and making Paste Sulphurs.

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men \$5 per day for making the solution and applying same.

To create additional available plant food and prevent smut in grain, drill into the soil 110 pounds per acre of TORO BRAND SPECIALLY PREPARED AGRICULTURAL SULPHUR—or our DIAMOND "S" BRAND REFINED POWDERED SULPHUR. This soil treatment has increased various crops up to 500%. Send for Circulars No. 6, 7 and 8.

Also PREPARED DRY DUSTING MATERIALS, Tobacco Dust, Dusting Sulphur, Mixtures, etc.

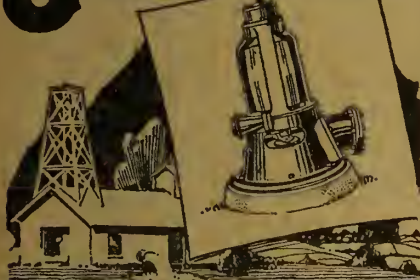
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We are equipped to make immediate shipments. Send for Price-list and Samples.

Ask us for prices for Carbon Bisulphide, the surest remedy for destroying ground squirrels.

JOHNSTON TURBINE CENTRIFUGAL PUMPS



Installations can be made in wells 10 inch or larger. Produce 500 to 4,000 gallons per minute. Ask for Folder No. 4. American Well & Prospecting Co., 407 E. 3rd, Los Angeles.

KEEP BEES

Let them gather honey for your table and make your fruit more fruitful. Free booklet and price cost of beekeepers' supplies for the asking.

The A. I. Root Company of California

1824 East 15th Street
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Everything for the Beekeeper.



ADAMS PIPE WORKS

New and second hand pipe and casings. Riveted steel pipe, valves and fittings. Mail orders given prompt attention. Write, phone or call.

2025 Bay St., Los Angeles, Cal.

LAKE COUNTY ORCHARDS

The principal orchard crop, and the one of which Lake County is most proud, is pears. One 15 year old orchard in Scott Valley yields from 700 to 800 pounds of choice fruit to the tree, which sold for eight cents a pound. Another orchardist sold his crop at Hopland for \$100 a ton. A friend of the writer at Kelseyville sold his crop in the orchard, but picked and in lug boxes for \$90 a ton, but some were small in size, some were "frost ringed," the situation being somewhat cold. The orchard of Mrs. N. Hurlbutt, near Kelseyville, is said to have yielded a crop worth \$1,000 an acre in 1919.

A small orchard of gigantic cherry



Lake County Pears

Four year old tree on Shirley ranch, Kelseyville. Not fertilized, but stubble of Sudan grass plowed under each year.

trees on the Sanford ranch was visited and a tree photographed which had borne more than a ton of cherries at one crop. Leonard Coates, a veteran nurseryman, now retired and living at Lakeport, was visited and asked wherein the local prunes differed from those which have made the Santa Clara Valley famous. He stated they were much bluer in color and smaller in size, yet the writer found orchards near Kelseyville that have paid well for a number of years. Mr. Coates believes varieties may be found that are better adapted to this section than those generally planted.

Apple trees 40 feet high were found that still were in good vigor and bearing large crops. It is evident to one visiting this section that it has grown a considerable variety of deciduous fruits for nearly, perhaps fully, a half century. On the slopes of the foothills vineyards are common to all sections, while in the lower floor of the valley, about Clear Lake, cereals are the principal crop.—E. B.

"DRIVER TROUBLE"

(Continued from Page 697.)

the number of tractor schools and institutes available to everyone, as well as the service departments conducted by most agencies, there is little excuse for the misuse of a tractor. The owner must inevitably come to know the capabilities and possibilities of his machines and he should spend a half day, if necessary, in the field with a new man making sure that his property is being used intelligently and not wrecked.

If several tractors are in use one particular man should be made responsible for the care of each piece of equipment and a record kept of upkeep expenses and fuel consumption. A farm or ranch large enough to boast a machine shop will of course keep track of such matters readily, but the man with two or three tractors must use some little effort and diligence in making sure that his operators are using the machines carefully and caring for them in a competent manner.

Those with a finger on the pulse of the tractor industry predict that the care and operation of tractors will soon be a recognized profession, with returns lucrative enough to attract a competent, well prepared class of labor.



Your Hired Man

A box of Hercules Farm Dynamite under your arm, some caps, a coil of fuse and a few tools make the best hired man you ever had—a man who will labor with the strength of Hercules, on every working day of the year—*and ask no wages.*

It's easy to put this helper to work, for leading Hardware and Implement dealers everywhere sell

HERCULES FARM DYNAMITE

And it is easy to learn how to use dynamite for the Hercules Powder Co. publish a 68-page illustrated book "Progressive Cultivation" that they will send free to any orchardist or rancher who sends in the attached coupon.

This book tells you how to plant trees, cultivate bearing orchards, clear your land, dig ditches and do scores of other things with the help of explosives.

Send for "Progressive Cultivation" today—you need this book.



Hercules Farm Dynamite is for sale by leading Hardware and Implement Dealers



HERCULES POWDER CO. 1033 Chronicle Building, San Francisco, Cal.



Gentlemen: Please send me a copy of "Progressive Cultivation".

I am interested in dynamite for.....

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There's Real Service Back of the OilPull

1. The tractor itself with inbuilt dependability, economy and long life.
2. The Rumely factories that have been building farm power machinery for over eighty years—127 buildings covering 195 acres—a perfect assurance of permanency.
3. Twenty-nine branch offices and warehouses—complete stocks of machines and parts—located at important railroad points to give quick service.
4. Three thousand dealers—most of them specially trained in the Rumely factories—and possessing the ability to give genuine service.

And your order for an OilPull gives you this four-fold service throughout the life of the tractor. Shall we send details.

ADVANCE-RUMELY THRESHER COMPANY, Inc.
17-19 Main St., San Francisco, Cal.



Arnott & Company —Distributors— Rumely OilPull Tractor Los Angeles

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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Federal Farm Loan

Please tell me where and how to make application to the federal farm loan bank for a loan. Can you give me some of the conditions regarding same? What is rate of interest, etc.?—Subscriber, Oxnard.

It is not possible at this time to secure loan through the federal farm loan bank. The operation of the bank has been practically suspended pending settlement of suit brought by mortgage companies of the West in an effort, it is alleged, to destroy the usefulness of the federal farm loan. In any case, it is now many months since the action was first brought and no decision has yet been rendered, but from conversation with members of the bank at Berkeley it is indicated that a decision will be rendered before the first of January. In case this is favorable to the continued selling of the bonds and operation of the bank then it will be necessary for one desiring a loan to become a member of the farm loan association. This association will have an appraising com-

mittee which, in conjunction with the appraiser of the bank, will determine the amount which may be loaned on any particular place. If this amount meets the needs of the applicant the loan is made. Unfortunately, the time required to secure action has been discouraging to some and we doubt not when more experience is had the bank will be able to conduct these operations with less of delay.

Spraying Apple Trees

What should I spray my apple trees with?—Subscriber, San Dimas.

With no information as to what the trees are infested with, this is very difficult to answer with any degree of satisfaction, but, assuming there is possible infestation of San Jose scale, we suggest that as soon as the leaves are entirely off and trees are pruned we would give a thorough spraying with strong lime-sulphur solution. If the commercial solution is used, use one gallon of the commercial solution to nine gallons of water. Then in the springtime a spraying with Bordeaux will lessen trouble with scab and other fungus. As soon as the trees come into bloom they should be sprayed with an arsenate solution, formula for which was given in special spray num-

ber of the California Cultivator, August 9, 1919. This formula will be repeated at blossoming time, when it will be of value to apple and pear growers.

Killing Stumps

Can you tell me something to put into stumps that have been cut—pepper, lemon or eucalyptus—to kill them and stop them from sprouting?—Subscriber, Riverside.

Perhaps the best control of this sprouting habit of some stumps is to break them off with mattock or old axe. This at least would be far cheaper than any chemical treatment. However, in order to make the stumps burn more readily a large auger hole, or several of them, bored well down into the stump and filled with saltpeter, is effective. If this is applied and the sprouts kept off it is reasonably sure that at the end of the first year, with a little excavation around the sides of the stump, with a brisk fire of sticks or brush to start it, the stump may be entirely consumed.

Eradicating Morning Glory

Please be kind enough through the columns of your paper to advise best way to eradicate wild morning glory, also how to get rid of tame morning glory. The former is getting started in sandy soil which has blown in on 'dobe. The latter has almost taken

possession of entire space around my house. Is there any successful method of getting rid of both without being deprived of the use of the land infested?—Subscriber, Redondo.

Of course any chemical used in destroying the morning glory is reasonably sure to destroy the soil for the time being for any other crop. The arsenicals and iron and copper sulphate, together with common salt, have all been used in the effort to destroy morning glory. It has been found that while salt placed a few inches deep over morning glory has prevented its growth, second applications have sometimes been required. The salt treatment and spraying with chemicals are destructive of the soil for the time being and the treatment is expensive. Really, the most satisfactory method is the growing of beans, garden crop or some crop which permits of clean culture, then thorough cultivation at least every five or six days with hoe to remove any of the morning glory which shows up between plants will eradicate the pest and give a method of culture which will perhaps prove profitable if the right kind of crop is grown. Two seasons of this clean culture will suffice.

College and Experiment Station

What is the address of the California state experiment farm and state

Green manures save time, expense, special equipment and inconvenience.

EARLY COVER CROPS ENRICH THE SOIL

IMMEDIATE PLANTING of the variety of legume best suited to your purpose insures a healthy stand and vigorous root-growth throughout the winter.

The soil becomes thoroughly permeated with a dense mass of fibrous roots bearing the precious nodules of nitrogen.

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Cow Peas, Whippoorwill or Speckled

Niles Peas
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Hairy Vetch
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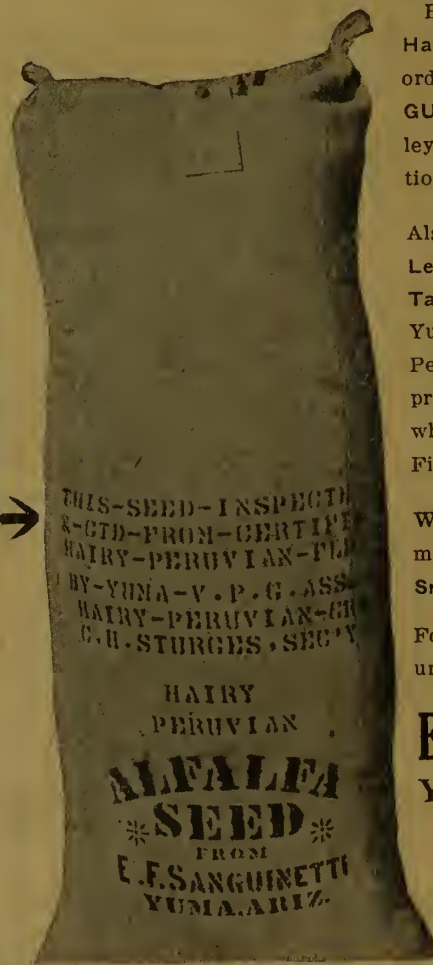
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California will eventually supply the Eastern markets with these onions. It has been proven that our soil is well adapted to grow a superior onion to those now shipped from Spain.

Sample packages 35 cents. Write for quotations on seed by the pound.

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Riverside, California

agricultural station or college?—Subscriber, Redondo.

There are several experimental plots on farms in all parts of California. The director of the state station, however, should be addressed at Berkeley, care College of Agriculture. Some of the work of the station is done on the college grounds at Berkeley, some at the university farm at Davis, some on the university farm at Kearney Park, Fresno County, some at the citrus experiment station at Riverside, and other parts of the state.

Arsenical Weed Killers

Please tell me as to the advisability of spraying ditch banks with the arsenic spray to keep clean of weeds. Am I apt to poison my stock? How long will the spray keep the ground clean? What is the exact formula for this spray? How much does it cost?—Subscriber, Durham.

A satisfactory method of weed control through spraying with chemicals has not yet been perfected. It has been thoroughly investigated, however. George P. Gray, formerly with the state university, now of the department of agriculture, has given more or less attention to this subject for a number of years. Circular 168, which may be had by writing Agricultural Experiment Station, College of Agriculture, Berkeley, will have interest for anyone who wishes to investigate. The department of agriculture at Washington, D. C., has also issued bulletins on this subject. It is touched upon slightly in Farmers Bulletin 660, "Weeds, How to Control Them." On ditch banks greatest care would have to be used in preventing stock from drinking water from the ditch.

Aphis

What remedy can you suggest for green aphis on young cabbage plants recently planted?—Subscriber, Arroyo Grande.

Perhaps the best treatment for these aphis is the ordinary spray of nicotine sulphate, proportions for use being given on the package, the material to be mixed with cold water and sprayed as soon as the aphis appears. There is also an excellent trade preparation of nicotine and kaolin which, dusted over the plants, aids in controlling the pest. If in the garden where water is under pressure, hosing the aphis off the plants is effective.

Restoring Soil

Have recently pulled a row of encalyptus trees which bordered a piece of ground on which I wish to raise alfalfa. Kindly advise best method of treating the impoverished soil before planting the alfalfa.—Subscriber, San Diego.

Heavy application of stable manure with deep plowing will perhaps restore this soil. If manure is not available the ground could be given up to green manure crops for the first year, the

crops being given ranker growth by use of commercial fertilizers.

Sawdust in Manure

Will sawdust mixed through manure damage the orchard or do it good?—Subscriber, Redlands.

Presumably there would be no injury. If the sawdust is from redwood and applied while green or still full of sap, in large quantity, the tannin or other material proves injurious, but in small quantity, as it would be used as bedding in a stable, even redwood sawdust would probably be harmless. Other than redwood there is no injury in sawdust or fine shavings. This material, however, is inert and of no particular value to the soil of the orchard excepting in case of very heavy soil there is some mechanical advantage in that soils are lightened up and ir admitted by their use.

Dewberries

Can you tell me how to set out early dewberries and what kind? Do I have to plant more than one kind for a small patch?—Subscriber, Buena Park.

Dewberries may be set out at any time during the next three months. In your section the Gardena dewberry, really a trailing blackberry, is no doubt the better variety. They are self fertile and need no other variety near them, though it should be borne in mind that no fruits are harmed and many benefited by cross-pollination. It is often necessary for almonds, chestnuts and Satsuma piums, advisable with Bartlett and other pears and beneficial to many fruits. The distances apart for planting have a wide range. Commercial planters, where horse cultivation is practiced, often plant six by six feet. In home gardens three by three is sufficient. Mr. Gray, originator of the Gardena dewberry, planted still closer and each year, after bearing, cut the vines entirely away, two or three inches below soil surface.

Potato Curly Leaf

I have some potatoes that were planted in August and are now four to eight inches high. The leaves are curling, turning yellow and have black spots on them. Can you advise as to cause and remedy?—Subscriber, Redondo.

Your plants have curly leaf, for which there is no remedy after it once appears. Dipping seed in corrosive sublimate may help, but the trouble is inherent with the seed. Under no circumstances use any of your potatoes for seed unless from hills of unusual vigor and productivity showing no signs of curly leaf or other trouble. The only permanent combative measure used by commercial growers is seed selection. Black spots and yellow color in such juvenile foliage are unusual but probably due to poor condition, unless a light frost has visited your section.—E. B.

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Redlands, Cal.

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At Public Auction State Fair Grounds, Sacramento, Cal. Thursday, December 16, 1920

This offering will contain some of the highest record, most richly bred females offered in California this year, many of them heavy with calf to some of California's outstanding sires, and includes the complete dispersal of two herds—R. F. Fisher and J. McKindley. Just consider these females and family groups:

A 1,028 POUND YEARLY RECORD granddaughter of King of the Pontiacs, out of a daughter of King Hengerveld that was junior champion at 1911 California State Fair. This record was recently completed and she will freshen again before sale as a 7 year old.

FOUR DAUGHTERS OF THE ABOVE COW, including a junior 4 year old sired by a son of De Kol of Valley Mead, on yearly test with 650.87 lbs. butter to her credit in 298 days.

TWO DAUGHTERS AND ONE SON of the above mentioned 4 year old. A GRANDDAUGHTER OF KING OF THE PONTIACS with 764.86 lbs. butter from 1,940.3 lbs. milk in 305 days. Due to freshen again in January.

THREE DAUGHTERS AND ONE SON OF THE ABOVE COW, one of them a 25.56 lb. junior 3 year old with 424.53 lbs. butter and 10,283.3 lbs. milk to her credit in 143 days.

A 32 POUND GRANDDAUGHTER OF COLANTHA JOHANNA LAD, heavy with calf to the three times grand champion bull King Segis Alcartra Prilly.

A 27.84 POUND 3 YEAR OLD daughter of Prince Gelsche Walker Korndyke, due in January to King Segis Alcartra Prilly.

A 23 POUND THREE YEAR OLD daughter of Sir Rag Apple Korndyke, out of a 26 lb. 4 year old granddaughter of De Kol 2nd's Butter Boy 3d, heavy with calf of King Segis Alcartra Prilly.

A 2 YEAR OLD DAUGHTER of King Segis Alcartra Abbekerk due with first calf in January to a 35 lb. yearly record son of King Segis Alcartra Prilly.

TWO 21 POUND DAUGHTERS AND ONE 21 POUND GRANDDAUGHTER of Tidy Abbekerk Prince, bred to Sir Aaggie De Kol Acme, son of the world's official record butter cow Aaggie Acme of Riverside 2nd.

A DAUGHTER OF THE TWICE 34 POUND COW GERBEN ABBEKERK MAID, with 25.77 lbs. butter in 7 days as a 3 year old. She will be fresh again before sale.

A 23 POUND DAUGHTER OF CHANGELING BUTTER BOY out of a 26 lb. daughter of a 26 lb. cow. Bred to a son of Sir Aaggie De Kol Acme.

A DAUGHTER OF SEGIS PONTIAC DE KOL BURKE, out of a 26 lb. 3 year old daughter of King Mead of Riverside that made 644 lbs. butter in one year as a 2 year old. Bred to a son of Sir Aaggie De Kol Acme.

A GRANDDAUGHTER OF ARLIA DE KOL out of a 768.29 lb. yearly record daughter of a 1,025 lb. cow whose dam in turn made 1,008 lbs. butter in one year. Bred to a son of Sir Aaggie De Kol Acme.

A DAUGHTER OF KING AAGGIE MEAD, full brother to the world's official yearly butter record cow Aaggie Acme of Riverside 2nd, out of a granddaughter of Tilly Alcartra.

A DAUGHTER OF KING AAGGIE MEAD out of a 16 lb. daughter of a 33 lb. sire, second dam out of a yearly record granddaughter of Sir Clyde.

A 25 POUND COW with 476.4 lbs. butter in 177 days, out of a 22 lb. full sister to the twice 34 lb. cow Gerben Abbekerk Maid, sells heavy with calf to Sir Aaggie Mead, son of the 1,215 official yearly record cow Aralia De Kol Mead.

A HALF SISTER TO THE 30,000 POUND 4 YEAR OLD, Cascade Fleeta Johanna, with 415 lbs. butter and 11,506 lbs. milk in 145 days, well along with calf to Sir Pietertje Ormsby Canary, one of the best yearly record sons of Sir Pietertje Ormsby Mercedes.

A DAUGHTER OF A 35 POUND SIRE out of a 20 lb. 2 year old whose dam is a 37 lb. 3 year old daughter of King Hengerveld Aaggie Fayne, third dam a 31 lb. daughter of Gordon Glen Pontiac.

A 17 POUND 2 YEAR OLD DAUGHTER OF PRINCE GELSCHER WALKER that will complete her yearly record before sale. Her dam a 27 lb. granddaughter of Colantha Johanna Lad with 714 lbs. butter from 16,930 lbs. milk in 247 days. Second dam an 811 lb. yearly record daughter of Ignaro De Kol. Sells well along with calf to a 34 lb. son of Sir Aaggie De Kol Acme.

MANY OTHER splendidly bred females with good records and bred to the outstanding bulls mentioned above.

Only a very few bulls will appear in this sale, and they are the sort that should especially interest dairymen.

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Big Type Poland Chinas at Auction

On account of changing my location, I am offering 60 head of Polands at public auction, at

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The offering includes 30 spring gilts, 10 fall gilts, 10 tried sows and 10 young boars sired by Long Jumbo, Glenn Chief, Yates Big Orphan, Young Hadley and bred to Yates Big Jones, Y. C. 4, Reformer, and Black Bob. Send for catalog.

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Orland, Cal.

To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Tuberculin Testing Under State Law

By Dr. J. P. Iverson



THE pure milk law enacted in 1916 declares that it is unlawful for any one to sell, expose for sale or cause to be sold any milk from cows that have not passed the tuberculin test, until it has been pasteurized by the holding process at a temperature of not less than 140 degrees Fahrenheit for 25 minutes. In other words, the dairyman may have his cows tuberculin tested (removing any reactors), or he must pasteurize the milk as defined by the holding method, but pasteurizing the milk costs him money. Of the two, testing generally is the most economical, provided he is careful about buying cows only from herds in which no reactors or very few have ever been found. Roughly speaking, it costs about 20 cents per 100 pounds of milk to pasteurize, which cost must either be added to the consumer's price or deducted from the dairyman's pay check.

The tuberculin test is made free of all cost to the dairyman, but he is required by law to make a written application to State Department of Agriculture, Division of Animal Industry, Sacramento, after which an inspector will call and do such testing. It may happen that an application is received after the inspector has finished his work in the particular district; thus, it may be six months before the herd is tested, during which time the law permits the milk to be sold. This may not appear to be fair to the public, but it can be remedied only through an effort on the part of the local com-

munity, namely, by passing an ordinance requiring that the test be made at once and arranging to have a local approved veterinarian do the work when the state inspector is not available or by increasing the number of field men.

It occasionally happens that a person who does not believe in the tuberculin test is opposed to having the work done, arguing that the test may be detrimental to the animal. This statement, of course, is absurd, since after testing and retesting hundreds of herds, no such case has ever been found. As a matter of fact, we know that the tuberculin used in absolutely sterile and could not cause an infection any more than so much water. Even if the tuberculin were contaminated the very small amount (about one drop) injected into the skin would not cause any visible effect.

Tests have been made on cows by injecting the same amount of suspension of B. coli and other manurial pollution organisms into the skin as is done with tuberculin, and there was not so much as the slightest swelling after the four day period. It is probably safe to say that tubercle bacilli might actually be injected into the skin and no infection would occur, since animals are not easily infected by such a route.

I am glad to say that there is today practically no opposition to the testing, but, on the contrary, it is being carried on harmoniously and with the fullest cooperation by dairymen; in fact, most cattle owners now look

forward to the test, realizing that it is to their interest to have their herds tested and any reactors removed before the disease has spread to the other animals in the herd.

The reaction to the tuberculin test is known as an anaphylactic one and is not peculiar to this test alone. The phenomenon of the protein shock is used in other ways and is considered highly dependable. If a guinea pig is given a small injection of egg white (diluted), he shows no indication of any illness or change of disposition, but goes on as happy as ever, but three weeks later, if he is given a second injection of the diluted egg white, he shows within a few minutes a peculiar nervousness, scratches his head and body, lies down and rolls, breathes rapidly, and may die within a few minutes. If the guinea pig does not die he is then immune to the egg white protein and other injections will have no further effect. The tuberculin test is the same phenomena, only on a much smaller scale; the body of the tubercular cow is being saturated with the protein of the tubercle bacilli. When a small amount of tuberculin (extracted bodies of tubercle bacilli grown artificially) is injected into the skin, a local anaphylactic reaction occurs—reddening the skin, and infiltration with serum, making a small swelling that varies in size from a pea to a walnut. If larger amounts of tuberculin are injected subcutaneously the cows show general symptoms such as rise in body temperature, lack of appetite, and general depression.

I am sure that no thinking person will underestimate the need of careful supervision of our milk supply. If milk from known tuberculous cows is to be permitted to go on the mar-

ket after pasteurization, then pasteurization must be done carefully or it gives a false sense of security. If milk is to be sold raw, the cattle must be tested regularly and the reactors removed.

The conclusion should not be drawn that every herd of cattle is tuberculous. On the contrary, the results of the past four years testing show that of more than 26,000 herds tested over 20,000 were clean; showing, therefore, that in the remaining approximately 6,000 herds were the tuberculous cattle which had made our general average for the state seven or eight per cent.

It is interesting to note also that by far the largest number of herds free from tuberculosis were those under ten; that is, small herds. This condition undoubtedly can be accounted for by the fact that small groups of animals are always less subject to disease than larger ones. In a dairy of 300 to 500 cattle, which would be considered a large dairy, one tuberculous cow might spread the disease to a hundred or more in a few months. The smaller herds, as a rule, are more stable; that is, not changing hands so often, the herd remaining practically stationary in its make up. Buying cows from unknown sources to add to a clean herd has proven the undoing of many a dairyman.

The following summary shows the results accomplished by this work since the tuberculin testing feature of the law became effective: Herds tested, 24,526; herds of ten animals and less, 20,211; herds of more than ten animals, 4,314; herds of ten animals and less free, 17,457; herds of more than ten animals free, 1,590; cattle tested, 220,323; cattle free, 197,009.

Statistics compiled by the state department of agriculture indicate that our dairy cattle population in California is about 750,000 head, which is many times larger than the population in any of our neighboring states. Our records show during the five years that the tuberculin testing provision of the law has been enforced our inspectors have tested about 250,000 cattle, an average of about 60,000 a year, a feat that is worthy of commendation. All raw milk dairies in the state are now regularly tested, and it is worthy of note that probably no other state in the Union can boast of a similar accomplishment.

CAMPAIGNS INCREASE USE OF MILK IN MANY CITIES

Milk consumption was increased 30 per cent in a recent milk campaign put on in Spokane, Washington, by the state agricultural college and the Spokane farm bureau. The work was supported by almost every civic organization, with the assistance of representatives from the dairy division of the United States department of agriculture.

During the week of the campaign 27,911 children heard talks on the value of milk in the diet of the child, and a large number of these children helped personally in various ways to make the campaign a success. The fifth, sixth, seventh and eighth grades in the city schools made clever milk posters. The primary grades put on a play, "The Milk Fairies," and all the children in the graded schools wrote essays on "Milk is a Perfect Food." A survey made before the campaign showed that milk did not enter into the regular diet of 4,770 children in the Spokane city schools, or 17 per cent of the whole, and that 8,846, or 31.7 per cent, drank tea and coffee regularly.

Milk campaigns by the state agricultural colleges, together with the farm bureaus and other local organizations, in which the United States department of agriculture has cooperated, have been held in many cities during the past 12 months. The increased consumption of milk following these campaigns has varied in the different cities. In Kansas City the increase was 14.7 per cent, in Topeka 25 per cent, in Seattle nine per cent, in Pittsburg 24 per cent, in Detroit ten per cent, in Tacoma, Washington, 30 per cent, in Davenport, Iowa, 15 per cent, and in Clinton, Iowa, 15 per cent. The basis for the computation of these percentage increases is a comparison of the month immediately following the campaign with the corresponding month in the previous year. The amount of butter used in the cities

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OLYMPIC Dairy Feed is guaranteed 20% protein and is actually higher. This protein is over 70% digestible. It will bring your herds to the highest practical point of productivity and keep them there with the least tax upon their vitality.

Therefore, when you buy OLYMPIC Dairy Feed, your dealer is selling you results—not merely "stuffing". At the great OLYMPIC Feed Mill and in the field, careful analysis and tests are made to insure those results.

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Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

after a campaign has increased from 15 to 79 per cent.

In every city a part of the work is to explain to the public how the milk supply is protected against contamination. Other features are the work with the schools and demonstrations in the use of milk by the children. That the work results in improved health on the part of the little ones is clearly brought out by the feeding demonstrations.

ESSENTIALS OF ANIMAL BREEDING

Written in simple language for the person who raises farm animals, a new farmers' bulletin, just issued by the United States department of agriculture, tells the basic facts about heredity and how livestock improvement may be brought about. Under the title "Essentials of Animal Breeding," this publication places before farmers and stockmen information which heretofore has been available chiefly in books, many of them being of technical character.

Topics explained and illustrated by the new bulletin include: Beginnings of life, evolution, Mendel's law, determination of sex, inbreeding, crossbreeding, outcrossing, pure breeding, pedigrees, grading up, and maternal impressions. Certain popular but incorrect ideas about heredity are discussed.

Several series of pictures show how good blood "breeds on" and likewise how inferior parents stamp undesirable characteristics on following generations. The discussions deal with all the principal classes of domestic animals, and a summary of basic principles concludes the bulletin which contains 40 pages. Copies may be obtained free of charge by application to the Division of Publications, United States Department of Agriculture, Washington, D. C.

For experienced breeders and for others who desire more detailed information than that contained in the Farmers' Bulletin, the department is preparing another bulletin entitled "Principles of Livestock Breeding," which goes more deeply into the subject. This literature, prepared in connection with the "Better Sires—Better Stock" campaign, adds to the completeness of the series of government publications pertaining to livestock raising.

COW NEEDS FEED

Grain feeding should always be in proportion to milk production. "The cow in milk, if a Holstein," says C. H. Eckles, chief of the dairy division of the Minnesota College of Agriculture, "should be given about one pound of grain to every four pounds of milk produced. A Guernsey or Jersey needs one pound of feed to three of milk. The dry cow in good condition needs little, if any, grain."

"The cow is a milk machine," says Dr. Eckles, "and feed is the raw material. Like any factory or machine, economical operation is possible only when plenty of raw material is available. Turning a dairy cow loose in a pasture does not insure that she will get sufficient feed to hold up in milk production as she should, especially from now until the time when regular housing and dry feed will be in order."

"Practically every real dairy farmer will have silage available. Don't wait too long before beginning to use it. Within 10 days after silo filling is completed, the silage is ready to use and unless pastures are unusually good it is well to begin feeding it."

"The experienced man knows that it is easy to let cows drop down in milk from poor feed, but very hard to bring them back to the high level again later even if good feed is given. Good management means keeping the conditions and feed right all the time so there will be no drop in milk at any time from lack of feed. The cow that has what silage she will eat will be well cared for so far as roughage is concerned so long as the pasture furnishes fair grass. When the grass begins to fail, bring out the alfalfa and clover."

The dispute as to ownership of the waters of the Sacramento, brought into the courts by suit of the city of Antioch, is practically ended by the rice irrigators maintaining that Antioch's supply comes from the San Joaquin instead of the Sacramento.



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World's Record Skimming
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Easy bowl to clean

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Milking done; the separator run finished—what then?

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The Perfected Disc Bowl of the United States takes the drudgery out of the clean-up. No chance to get the discs mixed; they're interchangeable. Just slip them on the handy disc transfer—at one stroke—wash in warm water, rinse in boiling water, and the job's done.

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Stock Profits Are Up To You

Did you ever stop to think that success in animal husbandry is a fifty-fifty proposition—half depends on the stock half on the man? Are you doing your full share in your partnership with your horses, cattle and swine? If not, the loss is all That can't be divided.

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America's original stock tonic and conditioner. For nearly 50 years this natural health improver has been the stand-by of the most successful live-stock breeders. It adds to the ration elements—lacking in the winter ration—which are so necessary to maintain health, vigor and energy.

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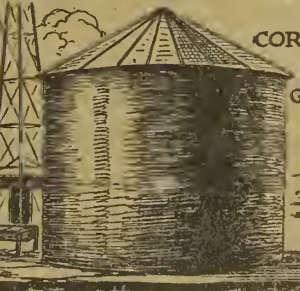
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Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
 December 1, H. E. Vogel, Fresno.
 December 2, Consignment Sale, Tulare.
 December 16-17, Consignment Sale, Sacramento.

Poland Chinas
 February 17, Bassett, Ross & Crawshaw, Hanford.

Berkshires
 February, Italian Vineyard Co., Guasti.

Durocs
 February, Falfadale Farm, Perris.

Percheron Horses
 February 17, M. Bassett, Hanford.

California was represented at the Jesse Engle Hereford sale in Missouri by John A. Bunting of Mission

San Jose and William Briggs, Dixon, and each secured one of the top lots. Bunting bought the June 1919 bull, Beau Blanchard 105th, to place at the head of his herd. This bull, which was declared to be one of the best young bulls offered in any sale this year, is a son of Beau Blanchard, the noted Engle bull, and is therefore a half brother to Beau Blanchard 76th that was grand champion at the last state fair and at Los Angeles. The dam of Bunting's bull was sired by a son of Disturber and out of a Repeater 9th dam. Mr. Briggs secured the junior yearling heifer, Belle Blanchard 83d, a granddaughter of Beau Blanchard and out of a Beau Blanchard dam. Belle Blanchard 83d was a member of the Engle show herd, and in the hottest competition never stood

below fourth rating, and usually stood second or third. Briggs also selected two heifers and a young bull from the O. G. Lee herd near Kansas City.

Professor Gordon H. True, head of the animal husbandry division at the university farm, who has been judging livestock shows in the Hawaiian Islands, has returned to the mainland and plans to spend the balance of his leave of absence at Madison, Wisconsin. It is expected that Professor True will take up his work at Davis about June 1.

Caledonia Farms, West Sacramento, reports the sale of a September 1919 Shorthorn bull calf to Geo. J. Campbell of Hawaii. The selection was made by Professor Gordon H. True. The calf was sired by Pine Grove King and is out of a dam by King of Palacines, a son of Whitehall King.

C. L. Hughes of the California Breeders Sales and Pedigree Company, reports that the Small and Davenport herd of Holsteins was dispersed at the farm near Fresno for satisfactory

prices. Cows sold from \$250 to \$400. Harry Hill of Riverdale paying top price for a daughter of It. H. E. Spires of Caruthers got a good granddaughter of Pontiac Korndyke for \$350. The sale attracted a number of new buyers, as the following list will disclose: Asa W. Allen, Fresno, who was the heaviest buyer, taking 14 head; J. R. Crawford, Burrell; J. M. Case and H. H. Dingley, Lemoore; G. W. Fink, Raisin City; Quentin Laneni, D. H. Foreney and M. P. Holland, Fresno; D. S. Roberts, Lester Roberts and Lewis J. Hammond, Caruthers; J. C. Rock, Riverside, and W. A. Pryor, Lemoore.

Edward Cebrian, manager of Caledonia Farms, West Sacramento, and W. S. Guilford of Butte City Ranch, Butte City, have left for Chicago to attend the International Livestock Show. Mr. Cebrian plans to attend the Anoka sale of Shorthorns and is particularly interested in that sale for the reason that three of the top young bulls catalogued are by Imp. Caledonia. Mr. Guilford will attend the annual meeting of the American Shropshire Association, of which he is a director.

William V. Mong of Your Duroc Farm at Whittier is developing into a national character through his methods of selling Durocs by mail. When he first wanted to get into the hog business Mr. Mong tried to buy some hogs in the East by mail and his failure to obtain any satisfaction from Eastern breeders as to the size, type or quality of their animals led him to dope out his selling method, which gives the inquirer as full information as though he visited the place and saw the animal. Back of this he gives a written guarantee that the hog is as represented. A late issue of the Duroc Digest had an extended article concerning his scheme and other papers with nation wide circulation have asked about it.

Falfadale Ranch at Perris has decided to disperse its entire herd of excellent Durocs in February and will send into the ring a lot of fine sows and gilts and its senior yearling herd boar, Great Orion Sensation Junior, who was grand champion at Tulare, Riverside and Los Angeles and reserve grand champion at Sacramento. This boar has sired a lot of fine pigs and his get won honors in all the shows.

Romie C. Jacks of Salinas, who bought the Stalder Ranch at Riverside a short time ago, is undecided as yet whether to make it into a breeding place for Herefords or to stock it with dairy cattle. The place would be ideal for either purpose and has been run as a dairy for many years.

H. W. Hanman, now in charge of the Hereford herd maintained by the Sierra Vista Vineyard Company, Minuturn, reports the sale of 40 head of females to A. H. Fredson Jr., Hollister. Included in the sale was a good young bull sired by Frederick Fairfax. Mr. Hanman states that there are now around 300 head of Herefords in the Sierra Vista herd and that it is planned to acquaint the public with the herd. In the past only a few breeders were aware that the herd consisted of so many high class animals.

Maiken Louise, owned by Santa Anita Rancho, has just finished a seven day record of 34.3 pounds of butter from 533 pounds of milk. She is a daughter of Tirania Lyons Butter Boy and out of Mechthilde Louise of Riverside 2d. She was bred by Kenneth Abbot, who is now connected with Burr Farm, Los Angeles. Anokla Gelsche Pontiac Walker, a daughter of Prince Gelsche Walker, has finished a record of 105 pounds of butter in 30 days as a junior three year old. Her best seven days netted 26.43 pounds of butter from 512.7 pounds of milk.

J. G. Throckmorton, Sebastopol, announces Saturday, December 4, as the day on which he will disperse his good herd of Berkshires. He will sell his fruit ranch and equipment at auction the same day. Mr. Throckmorton recently sold one of his show barrows that stood third at Sacramento to the Western Packing Co., San Francisco, for 20 cents per pound.

WINSOR RANCH GUERNSEYS

Herd Headed by

VEDA'S MAY KING OF EDGEMOOR

GRAND CHAMPION AT LOS ANGELES, 1920

Morris C. Allen, Mgr. BONITA, CAL. Francis Brown } Cattle Dept.
Karl Haffly }

FOURTH TULARE SALE

70 REGISTERED
HOLSTEINS

67 FEMALES---3 BULLS

Sales Pavilion
Tulare, Cal.Thursday
December 2^{AT}
10 A.M.

This offering includes a large number of young cows and heifers of more than ordinary merit, and made doubly attractive by the services of the great sires which they carry, these bulls including both short and long time record breeding. In the list will be found:

A SPLENDID COW that has just completed a yearly record of 745 lbs. butter from 17,087 lbs. milk. She sells heavy with calf to a 32 lb. son of King Mead of Riverside.

A 24 POUND daughter of Colantha Sir Pontiac Aaggie that has just finished a yearly record of 653.2 lbs. butter. Due to calve on December 7 to a 32 lb. son of King Mead of Riverside.

A DAUGHTER of a 646 lb. yearly record 2 year old. Dam now on test again and making nice record as a 3 year old.

A 3 YEAR OLD that has just completed a yearly record of 640.6 lbs. butter. She sells heavy with calf to a 32 lb. son of King Mead of Riverside.

A 21 POUND granddaughter of King of the Pontiacs, now fresh.

A 19 POUND 3 YEAR OLD, bred to a 32 lb. son of King Mead of Riverside.

A DAUGHTER OF KING KORNDYKE SADIE VALE, out of a 23 lb. 4 year old granddaughter of Pontiac Korndyke.

FOUR YOUNG COWS bred to a 31 lb. son of Sir Veeman Korndyke Pontiac, whose first daughters to freshen are making splendid records.

A 26 POUND daughter of a 28 pound cow, bred to Prince Gelsche Walker Alcartra, who is by Prince Gelsche Walker and out of a half sister to Tilly Alcartra that made 796.16 lbs. butter from 19,043.5 lbs. milk in one year.

TWO DAUGHTERS of Prince Gelsche Walker Alcartra out of well bred dams.

A DAUGHTER of Creamcup Colantha Pontiac Burke, heavy with calf to Sir Aaggie De Kol Acme 2nd, five of whose seven nearest dams average 1,153 lbs. butter in one year.

A DAUGHTER of the 35 lb. sire Segis Pontiac Abbekerk.

A DAUGHTER of Segis Pontiac Crane De Kol, heavy, with calf to Segis Pontiac Abbekerk.

A SHOW HEIFER, sired by a proven son of Segis Pontiac De Kol Burke.

A 2 YEAR OLD daughter of Sir Aaggie De Kol Acme, now on yearly test and bred to the 34 lb. bull Sir Aaggie Hiske Walker.

A GRANDDAUGHTER of an 811 lb. yearly record cow bred to Palo Humphrey Meka, son of the 1,326 lb. yearly record cow Laurameka.

AN 18 POUND 3 YEAR OLD bred to Palo Humphrey Meka. A 2 YEAR OLD with 519.3 lbs. butter in 305 days, her dam a 23 lb. 2 year old.

TWO GRANDDAUGHTERS of King Korndyke Sadie Vale, bred to a 31 lb. grandson of Pontiac Clothilde De Kol 2nd.

A DAUGHTER of a cow that made 1,093.04 lbs. butter from 27,179 lbs. milk in one year.

A GRANDDAUGHTER of King Segis Pontiac Count, out of a 21 lb. dam and heavy with calf to a 36 lb. son of the three times grand champion King Segis Alcartra Prilly.

A 21 POUND COW that has milked over 100 lbs. per day many different times.

A 2 YEAR OLD daughter of the above cow, with 18.49 lbs. butter in 7 days at 2 years 3 months. She is by a son of King Segis Pontiac Count and sells heavy with calf to a 36 lb. son of King Segis Alcartra Prilly.

ANOTHER DAUGHTER of the same cow, sired by a son of King Walker and due to freshen shortly after sale to a son of King Segis Pontiac Count.

A HEIFER sired by a 950 lb. yearly record grandson of Aralia De Kol. Will be fresh with first calf before sale.

MANY OTHER WELL BRED FEMALES, by great sires, out of good dams, and bred to some of California's best bulls.

Only Three Bulls in the Offering

A son of the 41 lb. \$5,000 bull King Abbekerk Johanna Segis, out of a 29.42 lb. daughter of Spring Farm King Pontiac 6th. The dam and sire's dam average 35.21 lbs. butter in 7 days. Here is a herd header.

A son of Creamcup Fidessa Cornucopia Lad whose dam made 897 lbs. butter from over 22,750 lbs. milk in one year. The dam of this youngster is now on yearly test and making a good record.

A son of the 35 lb. bull Segis Pontiac Abbekerk, out of an A. R. O. granddaughter of King Pontiac Ruby Burke.

CONTRIBUTORS TO SALE:

GOTSHALL & MAGRUDER, Ripon
 ALEX WHALEY, Tulare
 R. C. STURGEON, Tulare
 F. S. BORROR & SON, Tipton
 E. D. BARRY, JR., Daggett

HARRY HILL & SON, Riverdale
 H. E. SPIRES, Caruthers
 PETER LOWSON, Tulare
 SANTA MARIA STOCK FARM, Tulare
 DR. E. J. WELDON, Sacramento

Every animal positively guaranteed to be a breeder; every animal over six months old tuberculin tested and sold subject to retest by the buyer.

Auctioneers:
 Col. Ben A. Rhoades, Los Angeles
 Col. Geo. W. Bell, Tulare

Management
California Breeders Sales and Pedigree Company
 C. L. Hughes, Sales Manager, Sacramento, Calif.

This sale is only 40 miles from Fresno where 75 head will be sold at Westlawn Farms, owned by H. E. Vogel, on Wednesday, the day preceding this sale. Plan to attend both sales.



READY for Market

with firm, solid, healthy weight — and ready sooner, because of more lusty growth — when the growing pig is fed



Health for the Sow and for the Pigs—

Feed LACTEIN to the sow — and start the foundation of healthy, husky, free-from-disease pigs. LACTEIN so thoroughly cleanses the sow's system, and furnishes the means of perfect digestion of all food. In this way, the sow receives the full benefit from all food—LACTEIN also supplies the element that prevents pig eating. Free the sow from all disease and the pigs will be most healthy. LACTEIN also enables the sow to produce more milk for the pigs. Weanling pigs should be put on LACTEIN.

Your dealer can supply LACTEIN—and you'll find it a most profitable investment in your hog raising operations. Start today with the use of this processed condensed buttermilk.

LACTEIN CO.

Main Office and Factory
Modesto California



Pumping Equipment

WITH THE RED LINE GUARANTEE

We are always glad to submit estimates, and can furnish equipment, to cover almost any pumping conditions. Our stock of used machinery along these lines is the most complete on the coast.

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951 1/2 N. Main St.
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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

75 REGISTERED HOLSTEINS

WITH

—TYPE—PRODUCTION—BREEDING—HEALTH—

AT

Public Auction

Wednesday

December 1

at 10 A.M.



Betsy Lamb Prilly

WESTLAWN FARMS

Owned by H. E. Vogel

FRESNO

CALIFORNIA

Mr. H. E. Vogel is making an offering in this sale of which any breeder might well be proud, and the opportunity presented for purchase of high class individuals is one which should command widespread attention.

The entire milking herd at Westlawn Farms will be dispersed in this sale, and a number of high class bred helpers and a limited number of good bulls will complete the sale list.

THE OFFERING OF FEMALES INCLUDES:

BETSY LAMB PRILLY, 35.03 lbs. butter in 7 days from 743.3 lbs. milk. She also made over 31 lbs. butter in 7 days as a 4 year old and was Grand Champion cow at San Francisco in 1919. She is due to calve in January to King Aralia Mead, an 1,161 lb. son of King Mead of Riverside.

A DAUGHTER OF KING MEAD OF RIVERSIDE, out of a daughter of Ignaro De Kol that made 762.73 lbs. butter from 18,424.6 lbs. milk in one year.

A 22 POUND GRANDDAUGHTER OF ARLAIA DE KOL with 717 lbs. butter in one year as a 3 year old, her dam a 954 lb. daughter of the 1,085 lb. former world's record milk cow Riverside Sadie De Kol Burke. Her three nearest dams average 1,061 lbs. butter in one year.

A 21 POUND DAUGHTER OF PRINCE GELSCHER WALKER, out of De Kol of Valley Mead 3d, 845.11 lbs. butter in one year.

A YEARLING DAUGHTER OF THE ABOVE COW sired by Sir Aaggie De Kol Mead, son of Sir Aaggie De Kol Acme and Miss Valley Mead De Kol Walker. HERE IS A REAL STAR!

A DAUGHTER OF COLANTHA ALCARTRA FAYNE, 33 lb. grandson of Colantha Johanna Lad, with 25.68 lbs. butter in 7 days as a junior 3 year old.

A 28.36 POUND DAUGHTER of Dutchland Hengerveld Sir Glad, in calf to a son of Betsy Lamb Prilly.

A GRANDDAUGHTER OF KING OF THE PONTIACS, with 21.38 lbs. butter in 7 days as a senior 4 year old. Sells heavy with calf to King Aralia Mead.

A 17 POUND 2 YEAR OLD daughter of King Morco Alcartra, bred to King Aralia Mead.

A 24 POUND SENIOR 3 YEAR OLD granddaughter of Juliana King of Riverside, now on yearly test with 191.47 lbs. butter to her credit in 60 days.

A 24 POUND GRANDDAUGHTER of Juliana King of Riverside, now on yearly test, and well along with calf to King Aralia Mead.

A 22 POUND COW due in December to a son of Betsy Lamb Prilly.

A 21.73 POUND JUNIOR 4 YEAR OLD daughter of the 30 lb. bull Admiral Burke.

A 15.87 POUND 2 YEAR OLD daughter of above cow, well along with calf to a son of Betsy Lamb Prilly.

A 24.23 POUND GRANDDAUGHTER OF JULIANA KING OF RIVERSIDE, now on yearly test, and well along with calf to a son of Betsy Lamb Prilly.

A 23 POUND COW, heavy with calf to King Aralia Mead.

A GREAT COW with a record of 25.11 lbs. butter in 7 days as a senior 2 year old. Will be fresh at sale time.

A 22 POUND COW out of a half sister to Juliana De Kol, and bred to a son of Betsy Lamb Prilly.

AN 18.29 POUND 2 YEAR OLD, heavy with calf to a son of Betsy Lamb Prilly.

A 17.40 POUND 2 YEAR OLD, heavy with calf to a son of Betsy Lamb Prilly.

A LARGE NUMBER OF OTHER COWS AND HEIFERS with good records, out of well bred, high record dams, and bred to one or the other of the richly bred Westlawn Farms herd sires.

A Limited Number of Young Bulls

KING PRILLY MEAD, out of the great producer and show cow Betsy Lamb Prilly, 35.03 lbs. butter from 743.3 lbs. milk in 7 days, and sired by King Aralia Mead, an 1,161 lb. son of King Mead of Riverside. Here is a real herd bull for some breeder.

A SON OF A 25.68 POUND 3 YEAR OLD, sired by a son of Betsy Lamb Prilly.

A SON OF KING ARLAIA MEAD out of a 24 lb. granddaughter of Juliana King of Riverside now on yearly test.

TWO OTHER WELL BRED YOUNG BULLS, both out of dams with good records.

This is positively one of the best offerings ever made in California. The blood lines of the herd are popular, the records substantial, and we believe that no sale in the west has ever presented cattle of better type throughout.

Every animal positively guaranteed to be a breeder; every animal tuberculin tested and sold subject to retest by the buyer.

WRITE FOR CATALOG NOW.

Auctioneers:
Col. Ben A. Rhoades, Los Angeles
Col. Geo. Bell, Tulare

Management
California Breeders Sales and Pedigree Company
C. L. Hughes, Sales Manager, Sacramento, Cal.

This sale is only 40 miles from Tulare, where 70 head will be sold the following day. Plan to attend both sales.

Prize Guernseys For Sale

A number of the prize winners—male and female—in our show herd are for sale. They combine type with high production.

Hollow-Hill Farm

B. W. Shaper, Mgr.

COLTON, CAL.

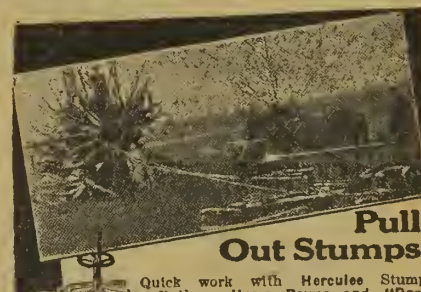
They Require Shorthorn Beef

Do you know that there is an extensive trade that requires Shorthorn beef in preference to any other? If not, you will find upon a study of the situation at the several markets that such is the case.

There is a quality in Shorthorn beef that experienced tradesmen recognize and demand.

The extra weight of the Shorthorn combined with this quality gives the grower a double advantage.

It pays to grow Shorthorn beef.
AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Ave. Chicago, Ill.



Pull Out Stumps

Quick work with Hercules Stump Puller. Horse Power and "One-Man" Hand Machines. 30 days' free trial. Three year guarantee. Write for free book. Introductory price offer now.

HERCULES MFG. CO.
1928 29th St., Centerville, Ia.

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Early to Market—Full Weight



Duroc-Jersey hogs raise large families and put on weight quickly. They are hardy, easy feeding animals that mature at an early age, and are uniformly red in color. Write for our free booklet "Duroc-Jersey Hogs Are Prolific and Profitable."

The National Duroc-Jersey Record Association. Dept. 130 Peoria, Ill.
The largest swine record association in the world—12,000 members

51 per cent of all hogs marketed in the United States in 1918 were Duroc-Jerseys.

Duroc-Jersey hogs have proved themselves in championship shows as well as on the market.

The Utmost in Durocs

Our herd of outstanding foundation animals is rich in the blood of

**PATHFINDERS SENSATIONS
CREATORS ORIONS
DEFENDERS**

This is the blood you need to insure your success. Superb breeding stock to suit your purse and purpose.
Visitors Welcome. Correspondence invited.
J. P. WALKER, Visalia, Calif.

SIZE

TYPE

QUALITY

INDIVIDUALITY

**VALUABLE
BREEDERS**

**PROFITABLE
FEEDERS**

Duroc Auction BY MAIL

DECEMBER BARGAINS

No. 1—SPRING BOAR
No. 2—SPRING GILT
No. 3—WEANLING PIG
No. 4—TRIED SOW BRED TO MY PARTNER
No. 5—GILT bred to a 1920 champion

Every Hog Registered and Guaranteed.
Write For FREE December List of Bargains.
WILLIAM V. MONG
YOUR DUROC FARM, Whittier, California

MAMMOTH DISPERSAL SALE FALFADALE FARM DUROCS

**EVERYTHING GOES INCLUDING
GREAT ORION SENSATION JUNIOR**

Grand Champion at Tulare, Riverside and Los Angeles
40 Sows and Gilts Bred to the Grand Champion
40 of his best spring pigs first week in February

B. H. Wilkinson, Mgr. Perris, Cal.

The Greatest Duroc Boar of His Age! Choice Wonder 3d

Senior and grand champion boar of California. A consistent winner in the show ring, having been a winner as a junior pig at the Iowa state fair in 1919. He is siring a high class of young stuff and is being mated to a class of sows that will breed on. Write for Prices. Satisfaction assured.

JUNE ACRES STOCK FARM V. F. Dolcini, Davis, Cal.

**Watch La Tierra de Uva Durocs Pathfinders, Orions, Sensations
Three Top Boars**

Fannie's Orion King assisted by Uneeda Orion B. 2nd prize aged boar at State Fair, 1920, and grand champion at Glenn County Fair, 1919, and Valley View's Sensation, 3rd prize junior boar pig and litter mate to 1st prize and reserve champion at State Fair, 1920, and a wonderful string of prize winning sows and gilts, including Miss Sensation, 1st sow pig and reserve champion at State Fair.

C. C. ELLIS Exeter, Cal.

Sows and Gilts---GET ONE

Bred to farrow next two months. We are making an extremely low price on these to reduce our herd. At the price we won't keep them long. Write today. Quick, before they are all gone.

H. P. Slocum, Willows, Cal.

When Writing Advertisers Mention California Cultivator

TAKE GOOD CARE OF THE UDDER

In a considerable number of cows the udder is the part of the body involved in bringing in satisfactory financial returns to the owner.

The size and condition of this organ is of extreme importance in this connection. Unlike her early ancestors the udder of the ordinary cow today considerably exceeds its projecting boundaries and consequently is much more liable to mechanical injuries and subsequent invasion of disease producing organisms.

A practical dairyman should devote as much attention to the care of the udder as a mechanic would to a delicate and complex piece of valuable machinery.

To do this we must understand to a considerable degree the nature of the factors that are apt to do harm. The more we study and observe the various causes that are harmful to the udder the more we are convinced that the introduction of bacteria into the tissues of this organ are the most serious source of mischief. It is known that there are many bacteria capable of producing abnormal conditions of the udder, hence it is not necessary at this time to discuss each organism separately.

Since we know that bacteria are the cause of serious udder diseases, the routes of their entrance to the tissues must be understood in order to take the proper precautions to prevent their causing any injury.

These various harmful bacteria may gain entrance to the udder by one of three definite routes: through mechanical injuries; through the introduction of bacteria; via the circulating blood.

With regard to mechanical injuries no inconsiderable number of these accidents may be traced to injudicious handling of milk tubes, barbed wire fences, loose pieces of wire lying around, and pieces of brush and jagged ends of lumber or other sharp material permitted to accumulate in places to which the cow has access. When milk cows are confined in inclosures they should have sufficient room to guard against the udders of reclining animals being stepped on by those moving about.

In milking the udder the hands of the milker or mechanical appliances to the teat should be scrupulously clean.

The last drop of milk should be drawn when milking for two reasons, one being that the last milk drawn is the richest, and the other so that there is no milk remaining on the end of the teat and in the canal in which bacteria may propagate. Stripping by means of the thumb and finger is bad practice because of the danger of injury to the mucous lining of the teat canal and the possible entry of infection into the injured tissue.

Infection via the circulating blood has its source in other areas of infection within the body. The most notable infection of this type is tuberculosis. It is always possible for tuberculosis germs anywhere in an infected animal to find their way into the blood stream and invade the udder.—S. O'T.

DURABLE IMMUNITY FROM CHOLERA ACQUIRED SLOWLY

A longer period is required to develop a permanent immunity in vaccinated hogs than is commonly supposed. The most potent anti-hog cholera serum that can be made cannot of itself confer a permanent immunity. Serum alone confers an immunity of a passive or temporary character, the duration being variable. The use of the "serum alone" is, therefore, applicable only to short feeding periods unless the herd is revaccinated or a thorough disinfection of the premises is made, says Dr. J. W. Connaway of the Missouri college of agriculture. Therefore when a herd is in constant danger of exposure to hog cholera infection it is preferable to confer a permanent immunity; but this cannot be secured except by subjecting the animal to the disease producing activities of the virus.

It is well known that the hog which recovers from a natural attack of hog cholera becomes, as a rule, perma-

nently immune. Likewise, that the "double treated" or "serum virus" inoculated hog gains a permanent immunity if the virus is a living and vigorously active virus. The virus, however, in the vaccinated hog, as well as in a natural attack of cholera, acts in a harmful way on the cells of the body; and the cells for self protection must react to the attacks of the virus and produce specific "antibodies," or protective substances, to counteract the harmful action of the virus. A veritable combat ensues when hog cholera infection enters the system of a hog, and this combat terminates either in the death of the hog or in an immunity more or less permanent. The vaccinated hog, however, has this advantage over the hog which has become infected with virus from natural exposure—a liberal dose of potent anti-hog cholera serum is injected simultaneously with the virus and this constitutes a supply of "reserve ammunition" which the vaccinated hog draws upon for protection while it is strengthening its cellular defenses and elaborating its own protective serum. If, however, the vaccinated herd is not properly handled and properly fed, the virus may overcome the protective guards in spite of the reserve ammunition with which the body was reinforced, and some of the hogs may succumb to acute cholera of the septicemic type, or may linger along with a chronic type of the disease and finally die from the pneumonic complications or from chronic inflammation of the intestines.

Experiments which have been made at the Missouri agricultural experiment station show that the virus remains virulent in the "double treated" hogs for a considerable time after vaccination, even in vaccinated hogs which are given good care and do not show outwardly any symptoms of illness. It was found that (for a period of more than a week) blood which was drawn daily from the tails of "double treated" hogs was almost as virulent as blood drawn from a pig showing well marked symptoms of cholera; moreover, the blood drawn from some of the double-treated hogs even as long as 23 days after vaccination was still sufficiently virulent to cause death when inoculated into a healthy susceptible hog.

It is thus shown that the process of acquiring immunity and overcoming the disease germs in the body is evidently a slow process, and proper care should be given the vaccinated herd for three weeks or more to avoid the development of acute or chronic cases of cholera from the vaccination. Rough handling during this period overfeeding after a fatiguing railroad haul or a long drive may so lower the resistance of some of the animals as to permit the cholera virus with which they have been vaccinated to gain the upper hand and cause death from a true attack of cholera.

CORRESPONDENCE COURSE ON MILK GOATS

To aid in the upbuilding of the milk goat industry the college of agriculture of the state university is now offering a correspondence course of milk goat raising. Circular number 113 may be had by writing to Division of Agricultural Education, University of California, Berkeley.

Book Review

PRICE OF MILK

"The Price of Milk," by Clyde L. King, Ph. D., University of Pennsylvania, published by the John C. Winston Co., New York, at \$2.00.

Of this book the publishers say "Milk is the essential element in the diet of civilized peoples. There is no substitute for milk. The average daily consumption of milk in America is below the minimum considered necessary to maintain health. As a producer, distributor or consumer you are vitally interested in milk and the price of milk."

Herbert Hoover comments: "There is no part of our national food supply the development of which is so essential for national health and in which the commercial factors are of so complex and difficult an order. This advance to better appreciation and wider outlook of the difficulties of the producer and the necessity for better of

ization in distribution is a very distinct contribution of public service."

The book is divided into three chapters touching upon public interest in the price of milk, forces that fix the price, manufactured milk products, cost of production, should dairymen organize for collective bargaining, cost of distribution, sanitary requirements, and distribution costs be lowered, food value of wholesome milk, cooperation and price, and fair price policies. The author is a member of the faculty of the Wharton School of Commerce and Finance, University of Pennsylvania, and was formerly chairman of the governors' tri-state milk commission. At first look it might appear that the dairymen, the real producers of the food, might find occasion to distrust the motives of the author. But answering the question, "Should dairymen organize?" the author refers to various needs for organization and the best rendered by the farmers themselves to the farmers themselves through their own representatives. Thus and thus only are the producers' interests fully protected. The purpose of the anti-trust statutes is to assure a fair price to the consumer and producer and dealer by keeping open the avenues of trade. The spirit of our institutions favors competition. The essence of competition is the free bargain between a willing seller and a willing buyer. The seller is not a willing seller in any economic sense of the word unless his power to sell is equal to the power of the buyer to buy. This is possible as to milk under present milk market conditions only when the producers are organized. The same economic forces that our lawmakers and courts recognized in collective bargaining for laborers are for legalized collective bargaining for dairymen."

LIVESTOCK AT DELHI

The settlers in the state land settlement at Delhi are almost to a man choosing diversified farming. Thirty votes were recently cast in favor of going into the dairy business, while those who would not enter the dairy business numbered only eight. Thirty-five voted in favor of having only one dairy breed in the colony, while two voted adversely to this proposition. Twenty-seven favored the Holstein, eight the Jersey and one the Guernsey breed. However, in the matter of the family cow the vote stood nine Holstein, two Guernsey, 18 Jersey. In dogs, the vote stood: Duroc 27, Pomeranian 4, Berkshire 1. Answering the question: "Do you agree that wherever possible all cattle purchased shall be purchased subject to tuberculin test?"—"Yes" 36, which was unanimous. All voluntarily agreed to the annual or semi-annual test.

SHEEP SCAB

Sheep scab is a contagious skin disease caused by a mite, and can readily be distinguished from conditions caused by other parasites such as ticks and lice. If the annoyance is caused by ticks or lice an examination of the animal will reveal them. On the other hand, if scab is present you will find that the disease spreads rapidly, causing loss by decrease in wool production, weight production and a general unthriftiness of the animal affected. An examination of the denuded areas on the body as a rule will reveal the mites. Death often results from the more advanced stages of the disease.

When animals are found to be affected in this manner dipping is resorted to as the most effective measure of eradication. All sheep infested and exposed to scab are dipped in a medicated solution which kills the mites. A cure is usually effected after two dippings, when administered from ten days to two weeks apart.

Veterinary

Feed Proportions—Depraved Appetite

Can you give me proportion of bran, beet pulp and coconut meal to feed milk cow? In connection with same am now feeding bean straw and cottonseed, the latter noon and night. My cow seems to have a craving for old pieces of wood. Is there something lacking in feed? She has access to

salt at all times.—Subscriber, Redondo.

If you desire to feed only the feeds you have mentioned above, would say that three parts of beet pulp and one part each of bran and coconut meal would about meet the requirements. The amount of this to be fed would depend upon the production of the cows. Probably five pounds per day of this mixture would be about right for the average producer. I would, however, suggest that barley, either ground or rolled, be added, as with the ration mentioned there is nothing which would keep up the bodily strength of the animals. I would suggest, therefore, that your mixture consist of four parts beet pulp, two parts barley, one part each of bran and coconut meal. This could be fed in about the same proportion as above, making about five or six pounds per day per animal. The chewing of old pieces of wood may be a habit. Usually such practice is found where there is lack of salt, but becomes a habit after plenty of salt is available. If the bodily strength of the animal is kept up, as I believe the above mentioned ration will do, I do not believe you will experience any difficulty in the actions of the animal.—G. E. G.

Leaking Milk

Can you give me a remedy for the leaking of milk from cow toward milking time in the afternoon?—Subscriber, Arcata.

It is often quite difficult to stop the leaking of milk from a cow when once the leak has started. This occurs sometimes when cows are fresh and their udders are distended. One of the best things to do, perhaps, would be to milk the cow three times a day in order to relieve the tension on the udder. This would no doubt stop the leaking. This practice could be followed until the production of the cow was reduced somewhat, when two milkings a day would no doubt be sufficient. Sometimes small plugs are inserted in the teat as soon as the milking is over, which helps to hold the milk in the udder until the next milking time. This, however, is not a practice to be recommended, as infection of the udder from the practice is often experienced and may easily occur. The insertion of a plug also is not a cure, as the muscles of the teat are inclined to be more distended than ever, so that if the plug were removed there would be a greater tendency than ever for milk to leak from the teat.—G. E. G.

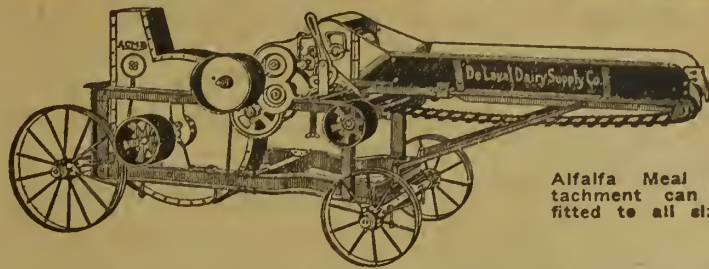
Horse Lame

Have a horse lame in front feet. Hoof is contracted, frog of foot diseased and smells badly. Please advise me what treatment to give.—Subscriber, Kingsburg.

The troubles you mention with your horse's feet are no doubt two distinct ones, although the disease of the frog may be superinduced by the contraction. The contracted hoof may be caused by rather dry conditions following conditions in which the hoof has been moist, although some horses are rather disposed to have contracted feet on which the above would not hold true. The disease of the frog is probably thrush. I would suggest, therefore, that you poultice the feet with boiled turnips or linseed meal after first cleaning the feet out well. The portions of the foot around the frog should then be cleaned well and packed with powdered calomel. The poultice of turnips or linseed meal will relieve the soreness and soften up the hoof somewhat, which will benefit the contracted part. It will also relieve the soreness of the frog. If the hoof is badly diseased it is well to pack fresh every day, while if it is not in very bad shape the pack may stay in two or three days. It is desirable to bandage the foot up after putting in the pack of calomel in order to keep out dirt and keep the calomel in. The stall in which the animal is kept should be kept clean and dry, as a damp and dirty stall may often cause the above mentioned trouble. Cleanliness is desirable in all cases.—G. E. G.

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For Sale—\$20,000 for 25 acres of best soil all under irrigation and cultivation at under the United States Government Project. 15 acres in alfalfa, and 10 acres in crop. Pumping plant for domestic use deep water. Fine modern up to date house of 5 rooms and bath and sleeping porch and electricity throughout. 1st barn, tank house, garage, brooder house and fine chicken house up to date with running water and self feeder. 800 yd. Petaluma White Leghorns. House completely furnished throughout. Valuation of furniture \$800, including a fine Edison phonograph. Barn cement floor, stalls for 20 cows and separator house. Fine Jersey cow included. The income from chickens alone is \$600 a month, a better. The place is situated on the Sta Highway with the very best class ranches surrounding and only 2 mi. from Orland, California. The above all included in the price. The entire place can be bought for half cash balance can be arranged on very terms to suit purchaser. The building alone cannot be duplicated for \$12,000. The place must absolutely be seen to appreciate what I am offering you for your money. For all information regarding this place address owner, **N. C. Nielsen**, Orland, California, Box 483.

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Poultry Queries

Conducted by J. A. Koethen

Aspergillosis

I have lately lost a White Leghorn hen in good condition. She seemed to slowly choke to death. She lived a week or two after I first noticed her choking and seemed perfectly well, only her comb and head turned a very dark red. I thought she had something stuck in her throat but today another hen is acting the same way. I can see nothing down her throat nor feel anything from the outside. Please let me know if this is a disease or if it is something they are getting that chokes them.—Subscriber, Millville.

Your hens are evidently suffering from aspergillosis, the diseases caused by the growth of mold spores in the bronchial tubes. There is nothing to be done but to clean up thoroughly and make sure that all their feed and scratching litter is perfectly clean and sweet. It may be that you are using corn that has been heated or ground grain that has been wet and become slightly moldy. Once the spores have taken hold of the respiratory organs there is no cure for the affected birds, but you can keep others from getting the disease by removing the cause.

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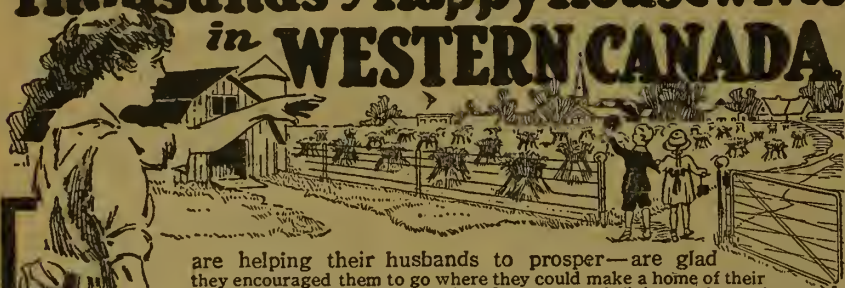
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Household Department

TWO YEARS AFTER

Through the crowded streets where the
arc lights burn,
Or perhaps apart from the tolling band,
Once in a while old dreams return
Of another life in another land;
Old dreams of bugles and marching men
Where a sergeant growls "Fall In" again.

The world drifts by as I watch once
more
The doughboys slog through an old
French town,
With its shattered walls that are red
with gore,
Through its muddy streets as the rain
beats down;
Their grim young faces—rifle and pack—
Hiking on to the next attack.

I see them now as the chow lines form,
Pal and buddy and fighting mate,
Ready again for the next day's storm
From the Hun barrage where the big
guns wait;
Where the muffled roar through the
flaming night
Has sent them word of the next day's
fight.

Through St. Mihiel and the Argonne
drifts,
Waiting word for the next advance,
As the mist rolls up and the gray fog
lifts
I can see them now in the woods of
France,
Knee-deep still in the muck and mire,
Working their way through the tangled
wire.

Ghosts in khaki—they linger still
As each drifts by with the old platoon,
Holding a dugout on some hill
Where only machine gun bullets croon
In the last big drive through the maw of
hell
That took Sedan as the curtain fell.

There's a long trail that is winding back
Through the battered towns with their
mud and rain,
Where the world has forgotten both man
and pack
In the older struggle for gold and gain;
The world has forgotten—but now and
then
We dream that the bugle has blown
again.

Is it only a dream when we hear once
more
The caissons rumble across the hills?
When the howitzers bark with their
ancient roar
In the life that carried a thousand thrills?
Only a dream for the fallen mate
Who sleeps where the wooden crosses
wait!—Grantland Rice in The Amer-
ican Legion Weekly.

HOUSEHOLD QUERIES

Ripe Olives

Will you please send me a recipe for pickling ripe olives. My olives are ripe and I have failed to find a recipe telling me how to handle them.—Subscriber, East Bakersfield.

Here are directions given by Cruess in his new book, "Home and Farm Food Preservation": Use stoneware or wooden container. Scald thoroughly, prepare lye of 1 pound soda lye per 5 gallons water, sufficient to cover olives in container thoroughly. Stir frequently. Once every hour remove two or three olives and cut in half. When the lye has penetrated through skin and a little way into flesh (which is shown by change of color), pour off lye into another vessel. Sufficient penetration will take place in three or four hours. Now expose olives to air in vessel in which they were treated. Stir twice daily and leave exposed until they are black or dark in color. This will take from one to five days. The exposure is to bring back color lost by lye treatment. Then return used lye to olives and leave till lye has reached the pits. Eight to 12 hours will usually be required. Pour off lye, cover olives with water. Change water twice daily till there is no longer any taste of lye. This will usually require one week. Now make brine of five ounces (five table-spoons) salt to one gallon water. Cover olives with this and heat to boiling. Pack hot in jars or cans. Sterilize one hour at 212 degrees Fahrenheit and seal.

Since the botulism scare the state board of health requires that all olives offered for sale shall be sterilized at 240 degrees Fahrenheit for 40 minutes in container in which sold.

Corning Beef

Recently in the Cultivator in a recipe for curing beef you said that in corning beef, sugar and salt and salt-peter were used, but no proportions were given. Now I would like to know just how to do it.—Subscriber.

Quoting again from Prof. Cruess' book, "Home and Farm Food Preser-

vation," which, by the way, should be on every home bookshelf:

Cool carcass thoroughly. Cut in pieces 5 or 6 inches square. The cheaper cuts, such as plate, rump, cross ribs, brisket, etc., are ordinarily used. Fat beef is better than too lean. Weigh cut meat carefully and allow 8 pounds salt to 100 pounds meat. Sprinkle one-fourth inch layer of salt on bottom of well cleaned and scalded barrel. Pack in as closely as possible the meat in a layer 5 or 6 inches thick then a layer of salt, another of meat and so on, leaving room for good layer of salt on top. Let stand overnight, then add for every 100 pounds of meat 4 pounds sugar, 2 ounces baking soda, 4 ounces saltpeter dissolved in gallon tepid water. Three gallons more cold water should be enough to cover this quantity. Weigh down meat with heavy stone on board to hold meat well under brine. In warm weather the brine may become rosy or slimy. If this happens make new brine of 8 pounds salt, 4 pounds sugar, 2 ounces baking soda, 4 ounces saltpeter to 4 gallons water. Pour off old brine and wash meat thoroughly. Add new brine. If the meat is kept a long time the brine should be changed occasionally. The meat is usually ready for use in six weeks.

Sugar Cure for Meat

Please tell me how to sugar cure meat.—Subscriber, Buena Park.

After meat has cooled, cut hams and shoulders. Pack in clean scalded barrel, hams and shoulders on bottom, filling in between and on top with bacon. For each 100 pounds meat weigh 8 pounds salt, 2 pounds brown sugar, 2 ounces saltpeter, dissolved in 4 gallons water. Cover meat with this brine. For summer use it will be safer to boil the brine and allow it to cool before using. Weight meat to keep under brine. Bacon strips should stay in brine 4 to 6 weeks before smoking; hams, 6 to 8. Watch brine to see that it does not become slimy or rosy. If it should, pour off and recover meat with new brine made in same manner. Construction of home smokehouse was given in Cultivators of October 16 and November 13, 1920. When ready to smoke remove from brine, rinse off and allow to drain for several hours. Hang in smokehouse, smoking continuously for 2 or 3 days or 3 or 4 hours each day for about 2 weeks. Use hardwood or spent tan bark for smoke. As soon as meat is sufficiently smoked open doors and windows of smokehouse and allow meat to cool. When thoroughly cool remove and wrap each piece closely in paper. Put wrapped pieces in strong sacks and tie at top. Hang where they are to remain until used. The sacks should be coated with thick paste of lime, water and enough glue to make mixture thick. Do not stack in piles; hang so pieces do not touch. These directions are taken from "Home and Farm Food Preservation," by W. V. Cruess of the state university.

Green Olive Pickles

Can you give me information on pickling the green olives used as a relish, the old fashioned green olive?—Subscriber, Fair Oaks.

Pick olives when full size but hard green. Prepare lye of 3 ounces soda lye per gallon water. Place green olives in this and leave until lye reaches pits, as indicated by cutting sample to pit. This will take about 24 hours. Pour off and discard lye. Cover olives with water. Change this daily until all lye is removed; about 1 week. Prepare brine of 9 ounces salt per gallon water (a little more than ½ pound per gallon). Pack olive in keg or barrel or glass jars. Fill completely with brine and drive bung into keg or barrel or seal the jar. Leave in quiet place until the flavor develops. This will be in about 2 months. The above directions are from Prof. Cruess' "Home and Farm Food Preservation." Present rules of state board of health, as noticed in directions for pickling ripe olives, require that all olives shall be sterilized at 240 degrees Fahrenheit

The Cultivator Patterns



BE SURE TO SEND SIZE

3429. Girls Dress.—Cut in four sizes: 4, 6, 8 and 10 years. A 6 year size will require 3½ yards of 38 inch material. Price 10 cents.

3430. An Up To Date Style.—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require 4½ yards of 54 inch material. The width of the dresses at lower edge is 1½ yard. Price 10 cents.

3034. A Popular Style.—Cut in four sizes: 2, 3, 4 and 6 years. Size four requires 2½ yards of 44-inch material. Price 10 cents.

3422. Ladies Lounging or Rest Robe.—Cut in four sizes: Small, 32-34; medium, 36-38; large, 40-42; and extra large, 44-46 inches bust measure. A medium size will require 6½ yards of 38 inch material. Price 10 cents.

3096. Girls Dress.—Cut in four sizes: 4, 6, 8, and 10 years. Size 10 will require 3½ yards of 38 inch material. Price 10 cents.

3407. Dress for Slender Figures.—Cut in three sizes: 16, 18 and 20 years. An 18 year size will require 3½ yards of 54 inch material. The width of the skirt at the lower edge is about 1½ yards. Price 10 cents.

3412. Girls Dress.—Cut in five sizes: 6, 8, 10, 12 and 14 years. An 8 year size will require 3½ yards of 44 inch material. Price 10 cents.

3404. A Pleasing Apron.—Cut in four sizes: Small, 32-34; medium, 36-38; large, 40-42; and extra large, 44-46 inches bust measure. A medium size will require 5 yards of 27 inch material. Price 10 cents.

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PATTERN DEPARTMENT
California Cultivator,
Los Angeles

held for 40 minutes if offered for sale. This, of course, would require steam pressure.

Home Made Olive Oil

Please give me, if you can, directions for getting oil out of olives.—Subscriber, Alpaugh.

Prof. W. V. Cruess of the state university gave in the Cultivator of January 4, 1919, directions for extracting oil with small home made press. The article is too long to repeat in this column, but Cultivator containing it has been mailed to inquirer.

HINTS FROM HOUSEKEEPERS

Rhubarb Pie

4 cups rhubarb, 3 cups sugar, 4 eggs, 2 heaping tablespoons flour, butter size of egg. First cut rhubarb in half inch pieces, beat eggs and mix with rhubarb, sift flour and sugar together and mix with rhubarb and eggs. Add butter; pour in pie plate lined with piecrust and cook until rhubarb is done. Bake with two crusts.

Fig Loaf

2 cups white sugar, 1 cup milk, 1 cup nut meats, 1 pound chopped figs (dried), 2 tablespoons butter. Mix sugar, milk and butter and boil until a soft ball is formed when a little of the mixture is dropped in cold water. Add nuts and figs, beat until creamy, knead until stiff and shape in a loaf with the hands; lay on oiled paper. Slice when wanted.—Mrs. W. C. Baker, Oroville.

WALNUT RECIPES

Open Cheese Sandwiches

Cut stale bread in one-fourth inch slices and diamond shape. Work together until smooth equal parts of butter and soft cheese, season with salt and spread on each slice of bread. Garnish with a quarter inch border of finely chopped nuts and a piece of nut meat in the center.

Layer Sandwiches

1 loaf nut bread, 1 loaf white bread, ½ cup raspberry jam, ½ cup chopped ham, ½ cup butter.

Cut nut bread in one-third inch slices, cut white bread also in one-third inch slices, put five slices together, alternating the white bread and the nut bread, with a filling of equal parts raspberry jam, chopped ham and creamed butter. Press under a weight and when ready to serve cut in thin slices.

To make checker board sandwiches places four layer sandwiches on top of one another with filling between alternating the light and dark strips. Press under a weight and when ready to serve cut in thin slices.

Walnut Roulettes

½ cup Diamond Brand walnut meats, 4 tablespoons butter, few grains salt, 8 slices bread.

Cut very fresh bread in as thin slices as possible, using a sharp knife. Cream butter, add Diamond Brand walnuts chopped fine and season to taste with salt. Spread on the bread, remove crusts and roll up into cylinders.

Cinnamon Toast With Walnuts

3 tablespoons butter, 2 tablespoons brown sugar, 1 teaspoon cinnamon, 3 slices bread, 2 tablespoons Diamond Brand walnut meats.

Cream butter and add sugar and cinnamon. Cut stale bread in one-fourth inch slices, remove crusts and cut in three pieces crosswise. Toast on one side, spread untoasted side with butter mixture, and sprinkle with finely chopped Diamond Brand walnut meats. Put in oven until sugar melts and serve at once.

HOME AND FARM FOOD PRESERVATION

It so happens that answers to four queries this week have been taken from "Home and Farm Food Preservation," by W. V. Cruess, assistant professor of food technology in the University of California. This book is published by the Macmillan Company, is thoroughly up to date and practical, as directions given on this page will demonstrate. The book contains directions for canning and drying of

fruits, vegetables and meats, preserving and smoking meats, vinegar and wine making, making of cheese and butter, recipes for fruit syrups, preservation of eggs—in fact, it is everything that its name indicates. It can be secured through this office for \$2.

YOU CAN IF YOU THINK YOU CAN

During the war, out in the West, they were building a great dam. This dam was to hold back the water and deliver it to an hydraulic power plant, needed for the generation of a large quantity of electrical energy for the production of necessary things for the war. The dam was almost finished, when one day, out of one of the trains there was shunted a car of stone, and that car of stone was left lying around the yards, with the dam still unfinished. Everything was complete except the putting in of this last load of stone. The freight car of stone, realizing how badly it was needed, spoke to one of the big engines that happened to be passing that way at the time, which happened to be one of these great freight engines.

"Say, friend, I am badly needed over the mountain to finish a very important job. Will you please haul me over?" And the big engine looked down at the humble little car of stone and said, "Oh, get out of the way. I carry only great big train loads of material. I cannot waste my time with you." And it went on its way.

Pretty soon, one of these massive passenger engines came along, and the car of stone spoke up and said, "My friend, won't you take me up over the mountain? I am badly needed over there." And the big passenger engine looked down in disdain and said, "Why, the idea! I carry only Pullmans. I don't bother with freight cars of stone."

But the car of stone was persistent and asked a big switchyard engine, with the same disappointing result. Finally, the car of stone saw a cheerful little yard engine, rather small in size, which seemed to be going about its work cheerfully and efficiently, throwing a car here, and throwing a car there, chugging along and happy in its work. The car of stone decided to try once more. "My friend, I am badly needed on the other side of the mountain to build a dam and the boys in France need the material that the power is going to produce."

The engine stopped and said to the car of stone, "Well, I do not go over the mountain. I am only supposed to run around here. But, I don't know, I believe I will try. I think I can."

So the car of stone perked up, and the little engine was hitched on. The little engine ran down through the yards, singing its merry little song:

"I-think-I-can; I-think-I-can; I-think-I-can; I-think-I-can."

Pretty soon it struck the hill and slower it puffed, "I-think-I-can; I-think-I-can, I-think-I-can." As it got a little farther up the grade it wheezed, "I-think-I-can; I-think-I-can; I-think-I-can; I-think-I-can."

And then as it took the down grade on the other side, its merry song rang out:

"I-knew-I-could; I-knew-I-could; I-knew-I-could!"—Charles R. Hook, Vice-President American Rolling Mill Company.

THE TREATMENT OF POISON OAK

Vacationists are prone to contract poison oak, and some of the simple methods of treatment are enumerated here for the benefit of persons who may be so unfortunate as to suffer from this uncomfortable irritation.

The extremely volatile oil which is so readily transferred to the skin or clothing of the passerby who brushes against the poison oak plant penetrates the skin very easily and causes the acute irritation. Immediately after exposure to poison oak the individual should wash with soap and warm water, followed by a dusting with talcum powder. If this does not bring relief the application of alcohol or spirits of camphor is advised. The use of greasy ointments or salves should be avoided, as they only aggravate the irritation.

Emerson has said that the most valuable product of a farm is not crops but character, and that men take out of the earth much more than they put into it.

Let's go

The sure way to put pep into your job on a rainy day is to get into a

FISH BRAND Reflex Slicker

There is a FISH BRAND garment for every kind of wet work or sport

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8,000 ft. 6 inch Riveted 16 Gauge
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1,000 ft. 18 inch Riveted 12 Gauge
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All above pipe thoroughly overhauled and inspected and ready for immediate use.

We also have large quantity standard pipe and screw casing, pressure tested and guaranteed.

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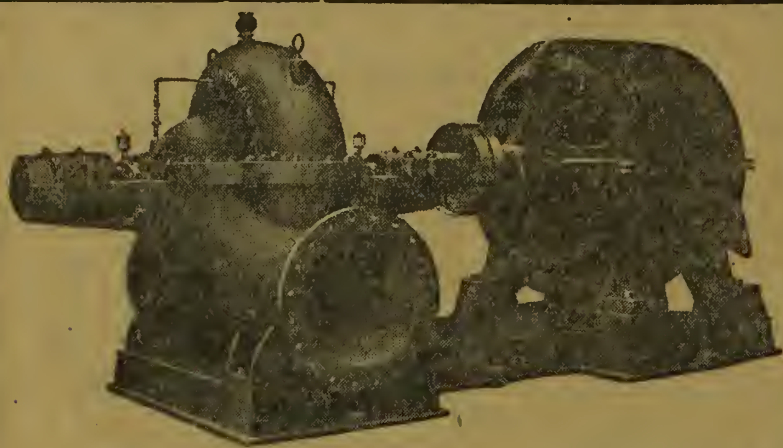
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California acclimated Australians; best milling; higher prices for product; yield well; shatter less in wind than other varieties known to us.

MARIOUT

There is large demand for this early maturing, drought resistant barley. Car load just shipped Miller & Lux averaged approximately 130 lbs. per sack. All our reclaimed Mariout, when well-jigged, has approximately each weight.

All our seeds grown on new soils, one irrigation only. All water from deep wells. No Bernuda, Johnson or Morning Glory.

Last call for Beldi Barley, Sonora, Early Baart, and the so-called Diener Hybrid Wickets, but can yet supply less than car load lots. No Tennessee Winter or Four Thousand Barley.

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Fully matured seed from purest strains known to us, grown in selected hand-rogued fields. We operate our own gin, carefully avoiding seed mixing.

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CITRUS, TROPICAL and Full Line of ORNAMENTAL PLANTS

PIONEER NURSERY OF MONROVIA

Los Angeles Markets

Los Angeles, November 23, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 60 cents.

Dairy Exchange price last week on extras:

	17	18	19	20	22
Nov.	60	60	60	..	60
'20	60	60	60	..	60

CHEESE

Brokers' prices:
California flats, 30@32.

EGGS

Fresh extras (case included): Produce Exchange closing price 76 per dozen case count, Produce Exchange closing price 73 per dozen; pullets, Produce Exchange closing price 68 per dozen; pewee pullets, 60.

Dairy Exchange price last week on extras:

	17	18	19	20	22
Nov.	88	87	85	..	76
'20	88	87	85	..	76

POULTRY

Price to producers: Hens, lt., 34; heavy, 34@36; colored, 37; broilers, 40@45; roasters, 39; old roosters, 14; fryers, 40; ducks, old, 23; ducklings, Pekin, 3½ up, 25; others 23; geese, 45; turkeys, live, young tom, 45; dr., 50; old, live, 40; dr., 41; hens, live, 45; dr., 50; squabs, 45@47.

Belgian hares, live, 10@21; old, 9.

LIVESTOCK

Los Angeles, Nov. 22 — Weighed and delivered on cars without floor or water:

Hogs (hard-grain): 125 to 175 lbs. 4.00; 175 to 225 lbs., 15.00.
Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.00@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 1.00, 150 to 250 lbs., 10.00.
Sheep—ewes, 7.50@8.00; lambs, 12.50@4.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, November 22, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market firm; Stockton: Burbanks, best, 2.50@2.75 sacked, few high as 2.85. Idaho Russets 2.50@2.75 mostly. Sweet mostly 85@1.00 per lug.

Onions: Supplies heavy, market weak. Stockton: Whites, 1.50@1.75; Browns mostly 1.10@1.25 per 100 lbs. sacked; Yellows, 1.00@1.15. cwt.
Garlic, lb., 12@14.

VEGETABLES

These are the actual prices obtained November 22 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, Refugee mostly 7@9; Limas, 4@6.

Beets: Doz., 40@50; sk., 2.00@2.25.

Cabbage: Supplies heavy, market weak, wide range in quality. Best mostly 1½ @2 per lb.; per field crate, best 1.00@1.25.

Carrots: Doz., 30@40; sack, 1.00@1.25.

Cauliflower: Supply liberal, field cr., 1.25@1.50 according to quality.

Celery: Dozen bunches, 90@1.10; cr., 2.25@2.75; Northern cr., 4.00@4.25.

Cucumber: Market firm; local, best, lug, 1.25@1.75, few high as 2.00.

Egg plant, lb., 1.00.

Lettuce: Field crate, best, 50@75.

Peas: Local, 12@14.

Peppers: Bells and Chills, lb., 3@5.

Rhubarb: Crimson Winter, best bx., 80 @1.00.

Squash: Local summer, lug, 85@1.10; Hubbard, lb., 1½@2.

Tomatoes: Local lugs, mostly 40@60; few best, 85.

Turnips: Per doz., 30@40; sk., 1.25@1.50

DECIDUOUS FRUITS

These are the actual prices obtained November 22 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal; market firm. California busket boxes Bellefleurs, 4 lers, 1.75@1.85; 4½ tier, 1.50@1.60; Jonathans and Winesaps, lb., 5@6.

Bananas: Lb., 10½@11.

Cranberries: Black, bbl., 16.50@17.50; Late Howe, 18.00@19.00; Oregon, bx., 5.50 @6.00.

Grapes: Supplies liberal, market strong. Muscats, 12@14; Tokays, 10@12; Cornichons, 10@12; Malagas, 12@14; poorer, all varieties, 5.

Pears: Bartlett's, northern, lb., 10@12; local various varieties, 7@8.

Persimmons: Lb., 10@17.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.75@3.00; special packed brands, 3.50@4.00.

Lemons: Market dull, wide range in prices: Local stock: Packed, box, 2.75 @3.25; loose, 1.00@1.50; lug, mostly 50@60.

Oranges: Supplies light, market firm. Valencia's, packed, special brands 126s, 15 s and 176s, 7.00@7.50, local packed, second grade mostly 4.25@5.00, Navels new crop, local packed, small sizes 4.50 @5.50, special brands mostly 5.50@6.50.

HONEY

Movement slow. Carloads f. o. b. usual terms: per lb. 5-gallon cans White Orange and White Sage, 16½@20; extra Light Amber Orange and Sage, 19; Light Amber Orange, 18½; Light Amber Sage, 12@18½; Light Amber Alfalfa, 11@17. Beeswax: sacked, in less than car lots 40@42 per lb. Prices given represent quotations; practically no sales being made. Wide range due to extremely unsettled market conditions; low prices are considered possible in near future.

NUTS

California Walnut Growers' Association announces prices in 1920 walnuts: No. 1,

soft shell, 2½; No. 2, 18½; Budded, 25½ standard budded, 22½ per lb.

GRAIN AND FEEDS

Grain Exch. prices bld November 22:

Barley: 1.90@1.92½.

Milo: Carlots, 2.25.

Corn: Bulk, No. 2 Yellow, 1.92½.

HAY

Alfalfa Growers of California, report under date of November 23:

There were 750 tons received on the tracks in Los Angeles the week ending November 20, with 90 tons left over at against 1,000 tons the week before.

Rabbit Alfalfa41.00

No. 1 Dairy Alfalfa32.00

Standard Dairy29.00

Stock Hay25.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay.

Tame Oats22.00@26.00

Barley16.00@22.00

Alfalfa22.00@30.00

Barley straw6.00@10.00

San Francisco Markets

San Francisco, November 22, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations:

Extras58

Dairy Exchange prices extras this week and year ago:

Nov.16 17 18 19 20

'2058 57 57 58 58

'1967 67½ 67½ ..

Rcts. wk. ending Nov. 21, 1,833 cents.

CHEESE

Dairy Exchange quotations:

Jack, full cream22@24

Jack, half skimmed17@20

Ore. Y. A.35

Cal. Flats33

Oregon Trips.33

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras83

Extra Pullets74

Undersized69

Dairy Exchange prices, extras this week and year ago:

Nov.16 17 18 19 20

'2092½ 92½ 92½ 93 83

'1967 86½ 87½ ..

Rcts. wk. ending Nov. 21, 186,280 dozen.

POULTRY

The turkey market is showing weakness due to arrival of turkeys from Australia and promise of more to come.

Wholesale prices are:

Broilers, 15 pounds per dozen, 60@65.

Colored fryers—2 to 3 lbs., 37@38.

Colored young roosters (smooth), 3 to 4 lbs., 38, staggy, 25@27.

Old roosters (colored), 20@22; market firm.

Beghorns, young, 15 lbs. to 24 lbs. per dozen, 45@48.

Leghorn hens, 3 lbs., 35@37; under, 25; Eastern, 31@25.

Large colored hens, 38@40.

Young Pekin ducks, 30; old ducks, 23 @25; young geese, 27@30; market easy.

Live Belgian hare, 23@25; dressed, 28 @30.

Dressed Turkeys—Young, large, 50@55; other grades, 47@50.

Squabs: Large, 75@80 per lb.

Pigeons: 3.00@4.00 per dozen; market firm.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 9@10; second quality, 7½@8½; thin, 6@6½.

Cows and heifers: No. 1, 7½@8; second quality, 6@7; thin, 3@4.

Calves: Light weight, 9½@10; medium, 8@9; heavy, 7½@8.

Lambs: Milk, 9½@10½; yearlings, 8 @8½.

Sheep: Wethers, 7½@8; ewes, 4@5.

Hogs: Weighing 100 to 150 lbs., 13½; 150 to 225 lbs., 14½; 225 to 300 lbs., 14; 300 to 400 lbs., 13.

POTATOES AND ONIONS

Wholesale prices:

River, 1.70@2.50 for No. 1, 1.25@1.50 for No. 2; do, Oregon Burbanks, 2.25@2.65; Salinas, 3.00; Idaho Gems, 2.65; sweet potatoes, 2½@3 per lb.

Onions: Yellow, 70@90 per cental; Australian brown, 75@1.10; do, white 1.00 @1.50.

Garlic: New, 6@8.

VEGETABLES

Wholesale selling price:

Beans: Lb., garden, 10@12; Italian, 9 @10; Lima, 12@13.

Beets: Sk., 1.00@1.25.

Brussel Sprouts: 5@7 lb.

Carrots: 1.00@1.25 sk.

Cauliflower: Doz., 1.00.

Cucumbers: Cr. 2.50.

Cabbage: Lb., 1.

Celery: Cr., 2.00@4.00; doz., 60@75.

Corn: Sk., 2.00@2.50; fr. 3.00@3.50

Egg Plant: Stockton, lug, 50@75; Livingston, 1.00@1.35

Lettuce: Cr., 2.75.

Onions: Green, per bx., 1.50@2.00.

Peas: Lb., 13@15.

Peppers: Lug bx., Stockton Bells, 70 @90; Chill, 75@90.

Spinach: Lb., 6.

Squash: Hubbard, 1.00@1.55 sk.; Marrowfat, sk., 1.00@1.25.

Tomatoes: Bx. fy. 1.50@1.75.

Turnips: Sk., 1.00@1.25.

FRESH FRUITS

Apples: King David, 1.75@2.50, Bell-flowers, 1.50@1.75; choice, 1.25@1.50; C grade, 1.25@1.35; Spitzenberg, 2.00@2.75;

Jonathan, 2.75@3.25; Hoover, 1.50@2.00; Newtons, 3 1/2 tier, 2.25@2.45; 4 tier, 2.35@2.50.
Avocado: Case, 7.00@9.00; small black, 1.00.
Bananas: Lb., 10 1/2@11; red, 12.
Berries: Strawberries, 1.25@1.85 per drawer; raspberries, 75@1.00 per drawer; blackberries, chest, 12.00@17.00; Huckleberries, lb., 22@25 in boxes; 17@20 in bulk.
Cranberries: Per bbl., 20.00. Oregon, 4.50@5.00 box.
Figs: Double, 1.50@2.00; single, 75@1.00; White, 1.50@2.00.
Grapes: Malaga, 2.00@2.50; Tokay, 1.75@2.25; Muscat, 2.25@2.50; Cornichon, 2.50@3.00 per lug.
Olive: Lb., 10@12 1/2.
Peaches: Per small box, 1.50@2.00; L. A. lugs, 2.00@2.25; Alameda, 2.50@3.25.
Pears: Winter Nellis, 2.50@3.00; Keiffer, 3.00@3.25.
Persimmons: Bx., 1.50@2.00.
Pineapples: Dozen, 4.00@5.00.
Plums and Prunes: 2.00@2.25 per crate or box; do, fancy varieties, 2.25@2.50; small lugs, 2.75@3.00.
Pomegranates: 1.50@1.75 per peach box; 2.00@2.50 per half orange box.
Quinces: Bx., 1.50@2.00.

CITRUS
Valencia Oranges: 7.00@9.00; Lemons, 3.25@3.75; Grapefruit, 3.75@4.00; Arizona, 4.25@4.75.

DRIED FRUITS
California Associated Raisin Co. prices: Muscats: Package seeded, Sun Maid, 25 pound boxes, 20 1/2 cents a pound.
Loose, 25 pound boxes, one crown, re-cleaned and floated, 20 1/2 cents a pound; two crown, re-cleaned and floated, 23 1/2 cents a pound; three crown, re-cleaned and floated, 24 cents a pound.
Layers, three crown flat pack, 20 pound boxes, \$4.40 box; ten pound boxes, \$2.40; five pound boxes, \$1.30 box.
Cluster, four crown pack, 20 pound boxes, \$4.70; ten pound boxes, \$2.55 box; five pound boxes, \$1.40 box.
Six crown flat pack, 20 pound boxes, \$5.50 box; ten pound boxes, \$2.95 box; five pound boxes, \$1.60.
Sun Maid, 20 15-ounce net cartons to box, \$5.20 box.
Sun Maid, 12 two-pound cartons to box, \$6 box.
Sun Maid, Imperial, four five-pound cartons to box, \$6 box.
Vineyard run, Sun Maid, 100 pound boxes, \$21 box (strapping extra, 19 cents per box).
Thompson Seedless, Sun Maid, re-cleaned, 25 pound boxes, 21 cents pound; 48 16-ounce packages, 21 1/2 cents package.
Sultanas, Sun Maid, re-cleaned, 25 pound boxes, 20 1/2 cents pound.
Figs: Fancy black, 25-lb. boxes, 12 lb.; extra choice black, 25-lb. boxes, 10 lb.; choice black, 25-lb. boxes, 9 lb.; fancy white, 25-lb. boxes, 18 lb.; extra choice white, 25-lb. boxes, 1 lb.
Prunes: 30-40s, 25-lb. boxes, 19 lb.; 40-50s, do, 17 lb.; 50-60s, do, 15 lb.; 60-70s, do, 13 1/2 lb.; 70-80s, do, 11 1/2 lb.; 80-90s, do, 10 lb.; 90-100s, do, 9 1/2 lb.
Apples: Fancy, 50-lb. boxes, 14 lb.; extra choice, do, 10 1/2 lb.; choice, do, 10 lb.
Peaches: Blue ribbon brand, 48 11-oz to case, 10.00 per case; do, 24 2-lb. boxes to case, 11.00 case; extra fancy peaches, 25-lb. boxes, 22 lb.; fancy, do, 20 lb.; extra choice, do, 18 lb.; choice, do, 17 lb.
Apricots: Fancy, 25-lb. boxes, 30 lb.; extra choice, do, 28 lb.; choice, do, 25 lb.; standard, do, 22 lb.
Pears: Fancy, 25-lb. boxes, 20 lb.; extra choice, do, 17 lb.; choice, do, 14 lb.

BEANS
Jobbers prices:
Small white, 5 per lb.; large white, 5. pinks, 6 1/4; Lima, 8; cranberry, 6 1/4; Mexican Gravanzas, 8; Lentils, 12 1/2. Blackeye, 7; Mexican Reds, 6 1/4; Popcorn, 8; California Bayo, 9; split peas, 7; green peas, 4.

NUTS
Peanuts: Japanese, 10.
Pecans, 25.
Almonds: California Almond Growers Exchange quote:
Nonpareil2 1/2
L. X. L.2 1/2
Neplus2 1/2
Drake1 1/2

GRAIN
Sales grain exchange November 22:
Wheat: 3.00@3.10; feed 2.90@3.05.
Oats: Red feed, new crop, 2.30@2.50.
Barley: New feed, 2.10@2.15; shipping, 2.25@2.35.
Shorts, 56.
Middlings, 65@67.

HAY
Alfalfa Growers of California under date of November 20:
There were 565 tons received in San Francisco the week ending November 20, as against 1,509 tons the week before.
No. 1 Dairy Alfalfa27.00
Standard Dairy25.00
Stock Hay22.00
Under date of November 20, A. W. Scott says:
Receipts of hay past week 565 tons. These light arrivals are the result of stormy weather and the interference with hauling and shipping through the country. One effect of the storm is to create a slight demand through the country for both hay and feeds where stock, particularly dairy stock, must be kept up and fed during the inclement weather. The hay market locally is in exactly the same condition as our general hay markets all over the country, dull and inactive. Even with its advance in price hay as a commodity never increased in value proportionately with the grain in any other produce; that is when comparison is made with the purchasing value of the dollar. With the recent reductions, prices of all kinds of hay are not satisfactory to the producers and they are not inclined to dispose of their hay now at figures which they consider a loss. Purchasers and dealers are buying for immediate necessity only and apparently the future of the market mainly depends on the ability of the producer to hold his hay and of the consumer to hold

off his purchases. The weather of course is a most important factor. Right now reports of the severity of the storm and damages from floods make even guessing a doubtful matter but for the present prices are unchanged and firm. Mill feeds, alfalfa feeds and coco and nut meals have been in somewhat of demand during the last week probably with the requirements of indoor feeding caused by the present and possible storm conditions.
A. W. Scott Co. quotes wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers, charge of cartage, commission and handling expenses must be added according to conditions):
Per Ton
Wheat hay, fancy.....28.00@29.00
Wheat hay (light 5-wire bales) fair to No. 1.....24.00@27.00
Tame oat hay, fair to choice.....24.00@27.00
Wild oat hay18.00@20.00
Barley hay17.00@20.00
Alfalfa hay22.00@25.00

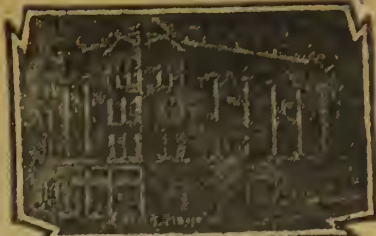
Citrus Markets
Los Angeles, November 23, 1920.
One car of Arizona Navels was sold in New York auction November 22 but no price is given in dispatches regarding it. However, one car sold on the 18th averaged \$7.20. Valencias are closing the season with exceptionally long prices. Great difference in quality, however, results in prices as low as \$2.00 and others as high as \$12.
Lemon shippers are holding back hoping for improvement of present lifeless conditions. It is impossible to get much better than \$2.00 f. o. b.

Shipments
Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 137 cars; lemons, 269; total, 406. To same date last season: Oranges, 1,572; lemons, 272; total, 1,844. From Central California to date this season: Oranges, 200; lemons, 15; total, 215. To same date last season: Oranges, 128; lemons, 42; total, 170. From Northern California to date this season: Oranges, 22; lemons 1; total, 23. To same date last season: Oranges, 30.

AT THE AUCTIONS
November 18
New York: 7 or., 5 lem. Val. 5.25-12.95, Nav. 7.20, lem. 2.15-2.95.
Boston: 1 Val. 7.75-8.20.
St. Louis: 1 or., 1 lem. Val. 3.55-4.90, lem. 2.35-2.40.
November 19
New York: 2 or., 1 mixed, 4 lem. Val. 5.15-12.25, lem. 1.45-3.15.
Boston: 1 or., 2 lem. Val. 4.95-7.30, lem. 2.65-3.60.
Pittsburg: 1 or., 1 lem. Val. 5.85-8.25, lem. 1.95-2.05.
November 22
New York: 10 Cal. or., 1 Ariz. or., 7 lem. Val. 2.95-12.15, lem. 2.15-3.30.
Boston: 2 or., 4 lem. Val. 9.00-9.05, lem. 2.05-3.20.

WEATHER REPORT
San Francisco, Cal., November 20, 1920.

	Rainfall	Temp.
Eureka	2.63	10.91
Red Bluff	1.82	6.84
Sacramento	1.93	4.23
San Francisco	1.22	4.10
San Jose	.54	3.31
Fresno	.72	1.95
San Luis Obispo	.70	2.79
Los Angeles	.02	1.72
San Diego	.02	4.5
Snow on ground at Summit	14.0	



Engineering and Auto Mechanics
THE MOST THOROUGH AND practical school in all Engineering and Vocational Sciences—offering complete courses in ONE HALF the time usually required by Universities. Elimination of non-essential subjects; intensified courses and individual instruction enables us to effect this saving of time. Well equipped shops, laboratories and field instruments. Courses in: Civil, Electrical, Mechanical and Mining Engineering, and Machine Shop. Actual engineering work done by students. Opportunities to earn board and lodging. NEW TERM BEGINNING Jan. 3rd Address: Polytechnic College of Engineering 13th and Madison Sts., Oakland, Calif.

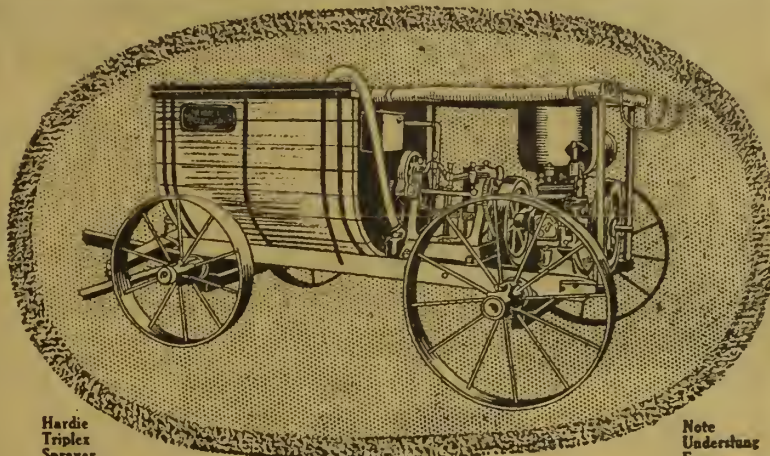
For small growers there is the Hardie Junior Power Sprayer—a low priced high quality Sprayer—150 gallon capacity, maintains 200 pounds pressure.



The Hardie all-brass bucket pump, the only bucket pump on the market with mechanical agitator, 200 pounds pressure with 35 strokes per minute.



Hardie barrel sprayer—mounted on the side for low height and freedom from upsetting. Pumps out all the liquid. Equipped with agitator.



The Advantages of Simplicity in a Power Sprayer

Spraying Troubles at Spraying Time are Extremely Costly

Sprayer troubles are practically eliminated in Hardie Sprayers because of the simplicity of design and the accessibility of each working part.

Investigation will convince you that adjustments and replacements are called for far less frequently in Hardie Sprayers than in any other kind. Ask any one of the 35,000 Hardie users.

The Hardie Triplex with its underslung truck and its wide track is a Sprayer that can be used on the steepest hillside where it would be impossible to take other machines. The tank is carried so close to the ground that it goes through the orchard without injuring the tree or fruit.

Its big capacity and high pressure enables the user to cut the cost of spraying to the bone.

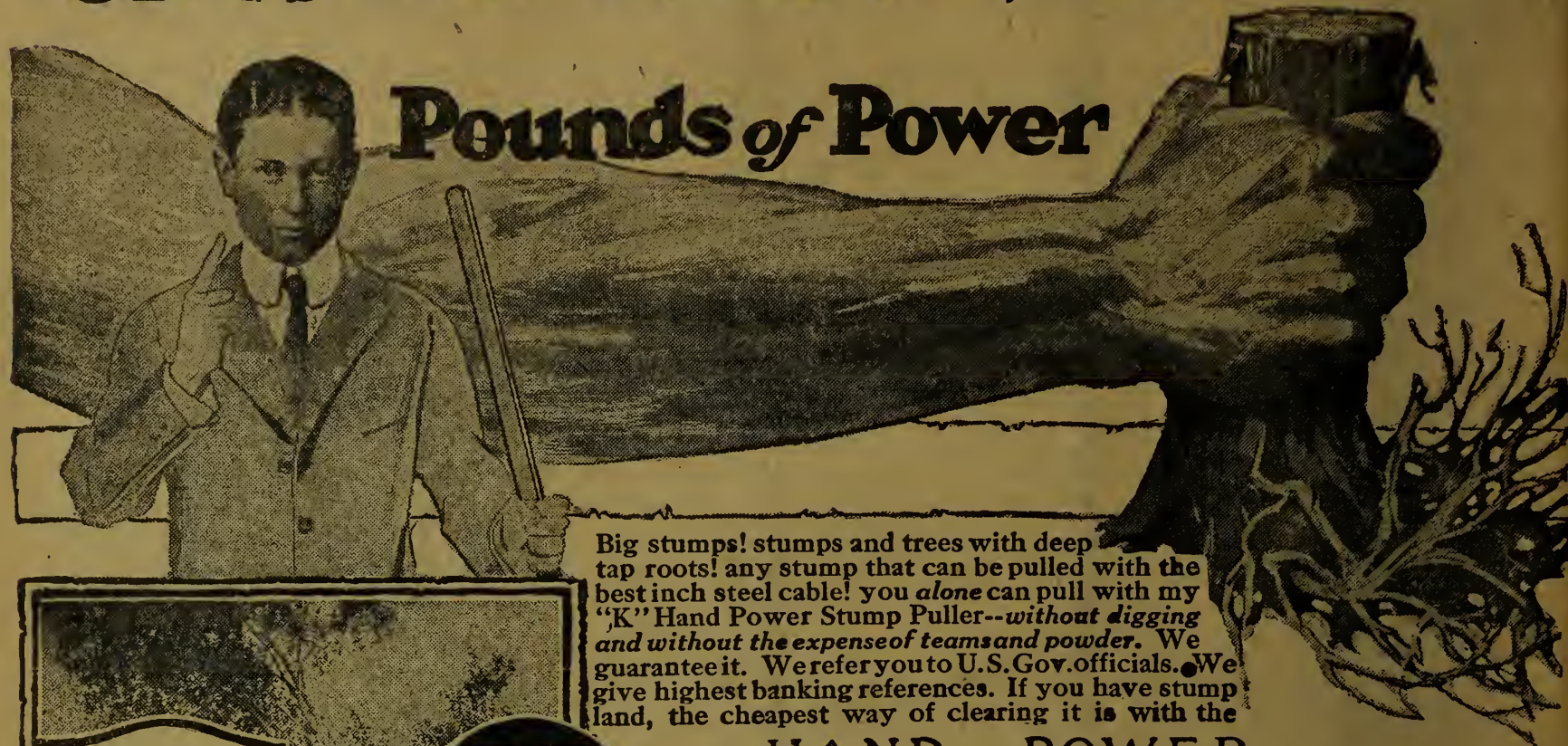
Hardie Sprayers are sold where ever good fruit is grown. See the Hardie dealer or write us direct.

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For 20 years the foremost, exclusive manufacturers of hand and power sprayers, including the FAMOUS HARDIE ORCHARD GUN
222 NORTH LOS ANGELES STREET, LOS ANGELES, CALIF.
Home Office and Factory, Hudson, Michigan
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The K Hand Stump Puller

Gives Your Hand 96,000

Pounds of Power



Big stumps! stumps and trees with deep tap roots! any stump that can be pulled with the best inch steel cable! you *alone* can pull with my "K" Hand Power Stump Puller--without digging and without the expense of teams and powder. We guarantee it. We refer you to U.S. Gov. officials. We give highest banking references. If you have stump land, the cheapest way of clearing it is with the

HAND POWER



Stump Puller

Frank Hanco, a one-armed farmer of Bowie, Md., pulling double silver maple 3 ft. 8 in. in diameter at the ground, with deep tap roots. This is an easy pull for the "K" as the cable can be hitched high and the leverage is consequently greater.

How the "K" Pulls Biggest Stumps A Mechanical Wonder

The "K" works on the leverage principle. Made of finest steel—guaranteed of the ordinary lifting jack, except that against breakage. Weighs only 171 lbs.—the power is applied on a cog-wheel in-easily carried or hauled about on its own stand of a standard. 100 lbs. push on the truck wheels. Has two speeds—60 feet lever develops a 48-ton pull on the stump—per foot per minute for hauling in cable all an inch steel cable will hold. One or for small stumps—slow speed for man operates it alone—no teams heavy pulls. Works equally well on hillsides and marshes where horses cannot work.

Owners Praise It

H. Sinclair of the Dept. of the Interior, a U. S. Gov. official, writes: "The stump puller is a wonder." Ernest Thompson Seton, author and naturalist, declares the "K" "a great success."

Hundreds of owners write in, telling of pulling six- and seven-foot stumps, of pulling faster and pulling bigger stumps than by any other machine.

Special Offer We are making a special offer to get a "K" Stump Puller introduced in every neighborhood. Write us today for full information and for free book on Land Clearing and about our Wonderful Drag Saw.

The Fitzpatrick Products Corp.

Box 17

99 John St., New York
16th and Kansas Sts., San Francisco

Tear Out and Mail Today
The Fitzpatrick Products Corp.
Box 17 99 John St., New York
Box 17 16th and Kansas Sts., San Francisco

H. G. Hunzicker of Foster, Wash., pulling a 24-inch fir stump with deep tap roots out of hard ground, without using powder or cutting any roots.

Send me full particulars on your special offer and your free booklet on Land Clearing.

Name _____

Address _____



CALIFORNIA CULTIVATOR

and **LIVESTOCK** *and* **DAIRY JOURNAL**

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

December 4, 1920

No. 23



One hundred and ninety-eight



The quality and service of the Willard automotive battery is clearly shown by the accompanying list of 198 passenger cars and motor trucks, whose makers have adopted Willard as standard equipment. 167 of these cars and trucks, made by battery-wise manufacturers, now use the Still Better Willard, the only battery with Threaded Rubber Insulation.

*Acason	*Brockway	*Diamond T	Huffman	Metz	Piedmont	*Studebaker
*Acme	*Buffalo	*Dixie Flyer	*Hupmobile	Miller	*Pierce-Arrow	*Stutz
*Advance	*Buick (E)	*Dodge	*Hurlburt	*Mitchell (E)	*Premier	*Sunbeam
Rumley		*Dorris	*Independent	Moore	*Preston	*Tarkington
*All American	Canadian	Elcar	*Indiana	*Murray	*R & V	*Thomart
*Allis Chalmers	Briscoe	*Elgin (E)	*International	*Napoleon	Knight	Tiffin
*American	*Cannonball	*F. W. D.	*Jordon (E)	*Nash	*Rainier	*Titan
*American	*Capitol	*Fargo	*Kissel (E)	*Nelson	*Renault	*Tow Motor
Beauty	*Carroll	*Fergus	*Koehler	*Nelson &	Reo	*Transport
*American	*Case (E)	*Ferris	*L. M. C. (E)	LeMoon	*ReVere	*Traylor
LaFrance	*Champion	*Franklin	*Lancia	*Noble	*Riddle	*Ultimate
Anderson	*Chevrolet (E)	*Fulton	*Landa	*Noma	*Rock Falls	*Ursus
*Apex	*Clydesdale	*G. M. C.	*Lewis-Hall	*Northway	*Rowe	*Velie
*Apperson	*Cole	Gardner	*Lexington	Norwalk	*Sayers	*Vim
*Armleder	*Collier	*Garford	*Luverne	*Ogren	*Selden	Vogue
*Atterbury	*Colonial	*Giant	*M. H. C.	*Old Hickory	*Service	*Vulcan
Auburn	*Comet	*Glide	*McFarlan	*Oldsmobile (E)	*Shelby	*Ward
*Austin	*Commerce	Grant	*McLaughlin (E)	Olympian	*Signal	LaFrance
*Avery	*Commodore	*Great Western	*Madison	*Oneida	*Singer	*Ware
	*Corliss	*H. C. S.	Maibohm	*Oshkosh	*Southern	*Westcott (E)
*"B. E. L."	*Crawford (E)	*Hahn	*Marmon	*Paige-Detroit	*Standard	*White
*Bacon	*Cunningham	*Hatfield	*Master	(E)	*Standard 8	*Wills
Barrie	Curtiss	*Hawkeye	*Menges	*Parker	*Stanley	*Wilson
*Bell	*Daniels	*Haynes	*Menominee	*Parret	Stanwood	*Winther
*Bessemer	*Dart	*Henney	*Mercedes	Paterson	*Stearns-	*Winther-
Bethlehem	Davis	*Highway	*Mercer	Peerless	Knight (E)	Merwin
*Betz	Day-Elder	*Holmes	*Meritt	*Peugeot	*Sterling	*Winton
*Bour-Davis (E)	*Denby	*Holt	Meteor	*Phianna	Stewart	*Wolverine
*Braddon	*Dependable					

*THREADED RUBBER INSULATION.
(E) FOR EXPORT.

WILLARD STORAGE BATTERY COMPANY
Cleveland, Ohio

Willard STORAGE BATTERY

California Cultivator

Vol. LV, No. 23

Los Angeles, December 4, 1920

One Dollar Yearly

A Bigger and Better College of Agriculture



CALIFORNIA has occasion to be proud of its educational system. This state spends more money on its public schools and, notwithstanding the fact that many Eastern states have educational institutions with longer history, few are more richly endowed or better equipped than those of California. The University of California now has the reputation of being one of the greatest educational institutions in the world. It is claimed that the attendance is larger than that of any on the continent. Californians are proud of this record. Because of this pride and the interest we have in our university it is natural that, like many other of our most cherished things, we are most concerned as to its future and, as has been seen, suggestions for bettering have been made according to best judgment of the writers through the columns of the California Cultivator. This with particular reference to the college of agriculture.

Some of the suggestions have been taken as unduly critical and have brought many replies in defense of the college. The first of these which we quote below is written by a native of India who in completing his education in America has chosen California college of agriculture. On account of the length of his letter, and of others, we have found it necessary to abridge slightly. Mr. Singh writes:

By Lal Singh, U. C. '21

Any person who complains about lack of democratic spirit either in faculty or student body of U. C. must have, I am afraid, either a poor judg-

ment or a wrong conception of democracy. Democratic spirit prevails in every step of college life. The professors even in classroom encourage the students to be very frank and informal in their discussions. Students feel at perfect liberty to go to the instructors at any time in their offices and take as much of their time as they care to take. I know of dozens of occasions where many students because of some difficulties in their courses have kept the professors one to two hours over their usual schedule time, and it is to the credit of the instructors that they cheerfully do it. They are ever ready to help and assist the students in every possible way they can. If this does not show the whole-hearted and unselfish devotion of the professors towards the students then I am miserably at loss to know it.

The charge that self-supporting students are looked down upon is not only gross untruth but even a rebuke to the art of imagination. To be specific I can name dozens of fully self-supporting students who, being awfully hard pressed financially perhaps, have never worn anything except old corduroy pants and blue shirts in the college, but simply because of their high standing in the class they are highly respected by the students everywhere.

One of the critics in your paper has accused the U. C. agricultural college of being too strict in its requirements. I believe he is quite right in it. But this in turn only reflects upon the high standing of the U. C. agricultural college. No college can keep its high

standard without having strict requirements. U. C. agricultural college cannot afford to be a dumping place for unworthy students or for those unwilling to study. It aims at producing men of highest intelligence who should occupy responsible positions. I also have, like many other students, experienced some difficulty in filling some of the strict requirements, but I have not been disheartened. I am determined more than ever to get my degree from this university because I feel that degrees from such well known institutions as this carry more weight than ten degrees from other ordinary colleges. The graduates of this famous college, in addition to practical knowledge, are expected to know and solve the mysteries of the science of agriculture. Persons desiring to get only practical knowledge can very well get it by working on big farms; or U. C. farm, Davis, affords excellent opportunities.

* * *

By M. H. Kimball

My home was in Weiser, Idaho. From that "off-side" position I had an impartial view of three possibilities, the University of Idaho, the University of California, and Oregon Agricultural College. The choice was the University of California, as a result of these three or four considerations:

First, I had to work my way. I felt that a larger city close at hand would offer better opportunities for remunerative occupation outside of college work. There is plenty of work here, and I have so far more than paid my own way. The presence of

the large city has not for me, and has not for any of those who are in earnest, proven an abstraction and an obstacle to good work. On the contrary, the advantages of the city as a source of music, operas and talent of all kinds is only an added field of education.

Second, the democracy of California has a wide reputation, and I wanted to live in that atmosphere. That spirit is certainly prevalent on the campus. No line of demarkation exists between the agricultural students and the students of the rest of the university, or between the self-supporting student and those who are more fortunate in their finances.

Third, I wanted an education with a training, rather than a training by itself. I wanted to come out of college with a foundation that was broader than that which is purely agricultural. If merely a training is desired, I agree that a shorter course is advisable, but who wishes to be a university graduate with no greater horizon than the boundaries of his fields?

As a final consideration, I wanted the college with the highest standing. Entrance requirements are a good indication of graduation requirements, and in that respect California is the most rigid.

I am not attacking the other schools, for, never having been in attendance there, I am merely stating what I know of California from three years' residence, and why I came here in preference to the others.

* * *

By Bruno Hahne '21

Judging by the articles of Mr. Royce and his corroborators in the August 28 (Continued on Page 750.)

Almonds: A Bit of History and Cultural Methods



C. TUCKER, manager of the California Almond Growers Exchange, felt it was wise to give better information as to the growing and care of the almond orchard to representatives of the exchange in Eastern market centers so he wrote a series of letters giving information which would be of value to the broker and to the wholesaler. As Mr. Tucker expresses it in Letter No. 1: "We shall tell the complete story of the Blue Diamond almond from grower to consumer."

While these letters were intended to be of interest and to inform the trade and agents handling Blue Diamond almonds and to give the novice his first information as to almond culture, they still have interest for many of us Californians, especially those who are not engaged in almond culture; likewise there are occasional hints of real value to the producer of almonds. The first letter touches upon

Growing a Perfect Almond

California is the only state in the Union in which almonds can be grown in sufficient quantities to be commercially profitable; in addition to this,

there are only certain districts in California where almonds can be grown successfully.

The grower of today must not only be a man of vision, but must be a business man and possess many necessary qualifications to be a success as a grower or rancher. Here in California the term rancher is more generally used than the word farmer, for in the earlier days the principal land holdings were great ranches, comprising many thousands of acres each, but the day of the big ranch is past; smaller farms are more easily cultivated and conform to the more exacting conditions of the labor situation.

Fertile soil is the first requisite in the production of perfect almonds. The almond is a deep rooting tree and draws heavily upon the plant nourishing elements of the soil.

Analyses of almonds, as compared with other commonly grown fruits and nuts, show that the almond leads in the total quantity of mineral matters withdrawn from the soil. For best results almonds require a rich sandy loam soil, well drained, at least ten to 12 feet deep.

The almond is one of the most exacting of fruits as regards its cultivation. Nowhere in the world is land so

highly cultivated as the broad acres of California, whose glorious sunshine, fertile soil, abundance of water, combined with ideal growing conditions, produce the most perfect foods for the human needs. Statisticians have figured that the state of California alone can produce enough foodstuffs to feed the population of the entire United States—small wonder when you think of soil from 25 to 50 feet in depth. Nothing is left to chance in growing Blue Diamond brand almonds. Only the very latest scientific cultural methods are employed in planting almonds that will grade up to the exacting requirements of the celebrated Blue Diamond brand. The area in California is so limited that to find lands that are suitable is quite a problem. This is one reason why there is not a faster increase in the production of almonds. However, there is a constant increase in acreage of almonds being planted. Almonds generally flourish in the valleys or foothill sections. Therefore our slogan, "From the Valleys of California."

After the careful selection of soil, which should be made by soil experts, in a district adapted for the successful growing of almonds, water is the next problem that confronts the

grower. Drainage is very important. The almond root is very particular as to its air and moisture requirements in the soil. It will not endure standing water in the soil for any length of time, especially in the growing season. Exclusion of air by excessive moisture is believed to be one of the most productive causes of "sour sap." If allowed to continue for any length of time such conditions will cause the death of many, or even all, the roots and with them the top. Water for irrigating almonds must always be used with great care, whether it be in summer or winter. All water should be so applied that it will readily spread through the soil and not remain in excessive quantities for any length of time. It is impossible to state any definite amount of rainfall which will, or will not, maintain the trees and enable them to bear regular crops of nuts. It is generally conceded that where the rainfall during the winter averages 16 inches, almonds can be grown without supplementing the water supply by irrigation, if the orchardists exercise reasonable care to conserve the moisture for the use of the trees.

While the almond tree is in many (Continued on Page 727.)

Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

A Journal of Horticulture, Agriculture and Livestock

Rural Californian, Established 1877
Combined with California Cultivator 1914
Livestock and Dairy Journal, Established 1901,
Combined with California Cultivator 1916

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The San Francisco office is Room 822 Santa Marina Building, 112 Market Street, M. C. Holman, Manager.

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Entered as second-class matter February 12, 1900, at the post office at Los Angeles, California, under the Act of March 3, 1879.

Saturday, Dec. 4, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

EDITORIALETTES

Watch out or the tax man will get you, for in many of the counties of the state the first Monday of December marks the day when delinquents are charged up with more or less serious penalties. Taxes are high enough this year without any additional penalty.

Speaking of taxes, we are reminded of a remark we recently heard in effect that one-fourth of all the wealth created in this country passes to the tax gatherer. Our total wealth production is around \$40,000,000,000 annually. The federal government alone must raise some four or five billions each 12 months. On top of that come state, county, city and district taxes. Then to many of us come improvement assessments. We cannot help but ask, "How Long?" The answer is simply a grim demand for more and the screws are put on and we pay. It is reported that there are fully as many federal employes in the city of Washington as there were during the war period, and every clerk of every county official has to have a pretty little girl to run his adding machine for him. Gee!

A bit of valuable information as to almonds and cultural methods is started this week on Page 719. This information has been gathered by Manager T. C. Tucker of the Almond

Growers Exchange. It is primarily for the benefit of Eastern trade connections of the producer, but there are so few of us in California growing almonds and thoroughly informed as to their culture that we believe this will prove wonderfully interesting to all and the cultural information instructive to the producer. Almonds are one product of which we put out a quantity insufficient to supply our own people, but the importers were never more busy than they have been this year, and almond growers are ready to unite with other fruit and nut producers to secure a measure of protection.

* * *

Many of the little roadside fruit stands in California offer attractive fresh products at reasonable price and at the same time succeed in securing for the producer more than local markets offer. These benefit both producer and consumer. Too often, however, the roadside fruitstands in the outskirts of our larger cities are under the management of hucksters who have found business dull in driving from house to house and are encroaching on territory which really belongs to the producer. But even then the most unfortunate feature is the fact that the prices charged, usually above those in the fruit stands in the city, succeed in killing the trade of the legitimate producer-dealer. In addition, there is once in a great while a regular producer who is asking exceptionally long prices and is charged with being a profiteer. The Rural New Yorker finds that in New York state this is a common fault with real producers and appeals for building up a bigger and better trade by taking the consumer into consideration. The big thing is to get the autoist to come to the farmer for the goods. Fair dealing will secure this.

* * *

"They say" that the Japanese are showing restiveness all over the state. The restiveness is manifested in engaging passage on Japanese steamers for two or three months in advance, in moving toward the Mexican border and in non-fulfillment of labor contracts and even in forsaking some land leases. The timid are concerned and all are asking why. It may be a good bluff or there may be other reason plain to the Oriental but unfathomable to the Occidental mind. In any case it's another proof that oil and water won't mix.

AMERICAN HOLIDAY

The time was when a Roman holiday was only complete with much spilling of blood of innocent victims. Americans read with a shudder of those gladiatorial days and wonder if it could be possible that the blood of any of those vicious spectators runs in their veins. But have our ideals changed very greatly?

The report of the festivities occurring on almost any of our legal holidays is a chronicle of bloodshed. The automobile races held in Los Angeles on Thanksgiving Day resulted in the death of three young men with promise before them of long and useful lives. They were skilled; they were able to control their swiftly flying machines; they were noted for their cool headedness. But in a moment their lives were destroyed—forefeit to the mad craving for excitement of the tens of thousands whose idea of observance of Thanksgiving Day is to attend a "show." Repeatedly during the few days preceding the races the question was heard: "Whose life will be given as a result of these races?"

It appeals to us that the speed of 100 to 110 miles which has been shown by the automobile has been so fully demonstrated that from a mechanical standpoint there is no further demand for these tests made at such fearful cost. In fact, we do not think that any feature of the mechanics of the automobile is in any way concerned in these races. We simply demand an extra thrill.

A FAIR PRICE

Milk is so essential to the welfare of the race that its production and distribution are guarded as in the case of no other food. Owing to its necessity to every one of us humans its price has been held so close to cost of production—too often below—that hundreds and even thousands of dairy-men are discontinuing the business, yet we discuss still more price control. We have from W. R. Mitchell of Los Angeles a communication in which he refers to this feature of food distribution as follows:

"All of us are consumers, some of us are milk distributors and a few are producers. Juries and arbitration groups are splendid evidences of civilization; then why not adjust our milk selling price by so simple a plan somewhat as follows: Three milk producers chosen by their well organized group; three milk distributors named by their association and six consumers who have no economic interest in production or distribution. Perhaps a more equitable milk selling price could be successfully adjusted. Why not accept such plan?" Simply because the six consumers and three distributors would fix the three little producers so there wouldn't be any producers any more. If folks want milk, the cost of its production must be paid and arbitration groups can't affect it. Resolutions of clubs of consumers are all right, but when it comes to adjustment of prices economic laws must prevail.

SLUGGISH MARKET

The raisin growers seem to be the only California producers whose product is accepted in the market at

a price which will meet the cost of production. The rice growers, with anywhere from 30 to 70 per cent of the season's output destroyed by the recent storms, are able to secure little more than half the actual cost of production. Cotton is hovering around 12 cents, with some sales of low grade at nine cents per pound. Some growers in the Imperial Valley are offering one-half of the cotton in the field to the laborer who will harvest it. In fact, the labor situation is such that many fields of fine quality cotton will not be harvested at all. Potatoes are some better. Onions are weak. Hay and grain is hardly bringing cost of production under modern day wages, with downward tendency for the grain. Nearly all dried and canned fruits show downward tendency. The wool grower is unable to sell at any price. The wool growers of Ohio, recently in session, passed a resolution urging upon the people the adoption of the slogan, "Buy a suit of clothes." We fail to see how such a slogan would get the wool producer anywhere. It is said that a \$75 suit of clothes contains only some six or seven dollars worth of virgin scoured wool, which even then is figured at something like \$1.75 per pound. This is several times over what the grower can secure for his raw product, which would reduce the benefit for him from a suit of clothes to something like 'steen cents. In any case it looks to us like a most roundabout way to benefit the wool grower, but more to benefit the retailer, the manufacturer and the maker of shoddy.

It appeals to us that we are past the slogan stage and are ready for closer cooperation on the part of producers.

THE LARGEST CHERRY TREE

San Jose now claims the lead in the cherry tree contest. The following is from R. Atherton of San Jose:

I read in the Cultivator of November 20 of W. J. McGrath of Watsonville anxious to know who has the largest cherry tree in California. He says he has one that measures eight feet six inches and is 35 years old. As I have one larger, I take this means to let him know about it. I have a cherry tree that measures nine feet six. I don't know the exact age, but am sure it must be at least 35 years old. I would be interested to know if there is anyone who has a larger tree.

AWARDED GOLD MEDAL P.P.I.E. SAN FRANCISCO 1915



ORCHARD AND GARDEN SPRAYS
ESTABLISHED 1896

DISINFECTANTS STOCK DIPS

THE STANDARD LINE OF

SPRAY MATERIALS

Why Do You Spray?

You Want Results—Don't You?

Because Rex Sprays have continued to give practical and profitable results for more than 25 years they have become the STANDARD SPRAY MATERIALS.

REX LIME and SULPHUR SOLUTION
REX EMULSIFIED OILS—REX MISCIBLE OILS
NUREXFORM ARSENATE OF LEAD
REX ARSENATE OF LEAD POWDER
REX ARSENATE OF LEAD PASTE
REX BORDEAUX PASTE
REX SULPASTE—REX SULPOWDER

"There is a Rex for Every Orchard Trouble."

California Rex Spray Co.

Benicia, Cal.

Vegetation in Relation to Environment

By Gordon Surr

THE accompanying photographs strikingly show the influence of the origin of a soil upon the character of the vegetation. The photographs are of "Rocky Hill," a couple of miles easterly from Exeter, Tulare County. The rough light colored hill, with boulder like masses, is granite, while the smooth hills nearer the foreground are made up of serpentine rock and other basic igneous rocks. One of the views shows an orange grove in the middle distance, with magnesite workings on the extreme right, the level area being a portion of the great San Joaquin Valley.

It is of particular interest to note that the trees, which are Wislizenus oaks, grow only upon the granite, extending right up to the basic rocks but not upon them. The photo taken at close range shows an area underlain by serpentine rock, in the left and middle foreground, and the oaks, it will be observed, reach the extreme edge of the granite mass, but not beyond.

The decided preference of the oaks for this and for other granitic hills in the region may be due to several things, such as a lighter, looser soil, different moisture conditions, lack of cracks in summer in the granite soil, no grass fires when the trees are young, and the presence of far more potash in the granite than in the basic rocks. Hence where many oaks are seen on distant hills the rocks are, in all probability, not serpentine rocks, which kind of reasoning may be termed long distance geology. Furthermore, reddish and green lichens and mossy growths are common on the outcrops of the basic rocks, but these bright colored growths are not



Showing Relation of Vegetation to Soil

Upper: "Rocky Hill" at contact with serpentine. March 28, 1920. Lower: "Rocky Hill" from south. Wislizenus oaks on the granite but no trees on the serpentine rock adjoining.—Photos by Harold A. Cole.

at all common on the granites here. Nowadays about all the walking many a person gets is from the door of the home to the place where the automobile is kept, and much of interest "among the untrodden ways" is thereby missed, to say nothing of the possibilities of impairment of the physical and mental well being from lack

of exercise and of interests outside the daily business grind.

One of the best ways of judging soils is to note what grows upon them and how the plants thrive. Weeds, after all, are merely plants out of place, and an excellent method of making use of them is to learn all we can from them. Some plants

grow under conditions which would kill others, such as salt grass and certain salt bushes and samphires, which are able to put up with a good deal of salt and alkali. On the other hand, cranberries cannot stand a soil the least bit alkaline. Green algae may be seen growing on the rocks along-side streams of nearly boiling water at Arrowhead Springs, north of San Bernardino, under conditions which would literally cook many plants, and certain pines flourish where oaks would starve to death. Then, in parts of California, prickly pear is abundant on the south sides of the hills, with quite a different vegetation, no cactus, and much better soil in many cases on the north slopes of the same hills. Again, white sage and lupines frequently take the place of greasewood (*Adenostoma*) destroyed by brush fires, while desert regions have their own distinctive flora, adapted in various ways to withstand the fierce conditions. The Torrey pine is known only in a small area on the coast of Southern California and on Santa Rosa Island. Altitude and the corresponding climate are also very important factors and the natural vegetation of a region is separated into more or less sharply defined zones, characteristic of certain elevations above sea level. The famous Calamina violet (*Viola calaminaria*) of Westphalia is an illustration of the effects of soil ingredients, for the flower, which is normally blue, is yellow where the plant is growing on the decomposed outcrops of zinc ore deposits.

Experiments at the Rothamsted station in England, with fertilizers on uncultivated land, show marked differences.

(Continued on Page 745.)

Orange Defies Geographical Lines

By Geo. C. Mansfield

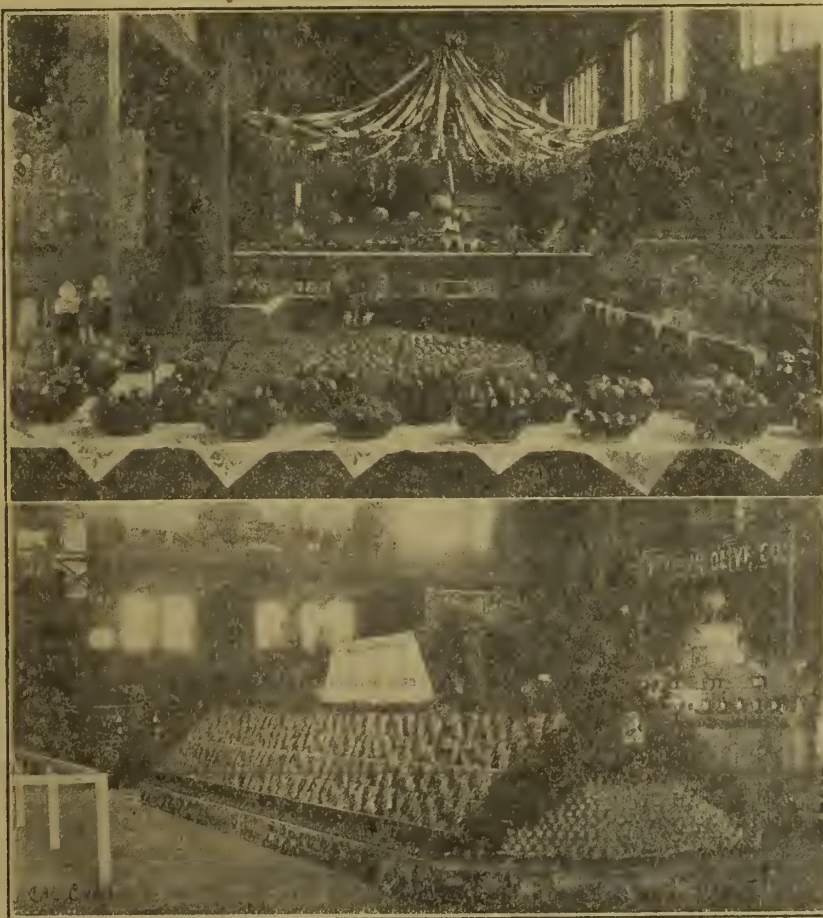
AN orange and olive exposition in Philadelphia would cause the world to marvel. And yet, between the 15th and 20th of this month, at a latitude the same as Philadelphia, California staged an orange and olive exposition which, both from the standpoint of artistry of arrangement and as a commercial demonstration, resulted in widespread commendation from experts, and all of which shows that California is different.

The fair marked the resumption after the war of the Oroville Orange and Olive Expositions, which a few years ago were given annually. The exposition was staged in the magnificent auditorium owned by the city of Oroville and built out over the banks of the beautiful Feather River.

In addition to large commercial displays of oranges and olives, semi-tropical fruits grown in the Oroville district were also extensively featured. The list of these fruits included avocados, including nursery trees and fruits from orchard plantings; guavas, limes and feijoas.

The time chosen was during November, as the orange packing and the olive processing season is at its height at that time in the Oroville district.

As announced in the preliminary publicity its purpose was to make known Northern California to Californians. The exposition demonstrated the truth of the statement of Professor E. J. Wickson in his book, "California Fruits":



A Citrus and Olive Fair as Far North as is Philadelphia

The upper of the pictures shows an exhibit at the citrus fair recently closed at Oroville. A great showing of citrus fruits was made and an even greater one of the world's finest olives. The upper exhibit is principally occupied by a display made by Wyandotte, Butte County, which was first prize winner. The lower engraving shows in the foreground the exhibit of the Stewart Fruit Company, while in the background is an exhibit of Ehmann olives.

"One who seeks to know California well must undertake to master both its horticultural greatness and littleness, and so closely are these associated and so narrow the belts of special adaptations that there are counties which have a range of products nearly as great as the state itself.

"It is hard for the stranger to realize this. It is difficult for him to believe that the terms 'northern' and 'southern' have almost no horticultural significance in themselves; that northern fruits reach perfection under proper conditions in the south and vice versa.

"Latitude, which is a prime factor in geography, is of exceedingly small account as an indication of horticultural adaptation in California. The fact becomes apparent when it is known that the apple and the orange, fruit kings whose kingdoms lie at opposite ends of the temperate zone, so distinct that one may be called semi-frigid and the other semi-tropical, have in California utter disregard for the parallels of latitude, which set metes and bounds upon them in other lands. Impressive as this truth may be, it is not so startling as another fact, viz., that fruits in suitable interior situations ripen earlier at the north than at the south, a complete reversal of the tenets of the geographer."

Interest in the exposition just closed was accentuated by the fact that there are 50,000 acres of land in the foothill district of Oroville where oranges, olives and deciduous fruits thrive, that has been and is being organized into irrigation districts. As the planted area has been limited by the available water, it is predicted that the new development will result in expansion of the citrus as well as other fruit industries of the district.

Agricultural News Notes of the Pacific Coast

Northern California

Sonoma County farm bureau dues have been raised to \$3.00.

Fair Oaks, Sacramento County, high school has a milk goat club.

Sutter County growers have planted 115 acres to peas to supply Eastern cities.

The Colusa rice district reports now in warehouses something over 1,750,000 bags.

The University of California made exhibit of livestock at the Portland Exposition.

California Cattlemen will meet in annual session at San Francisco, December 6-8.

Rice growers are now estimating losses from the recent storm to be at least 30 per cent.

There were 45,000 visitors to the El Dorado national forest during the past camping season.

Dr. Walker of Willows has been re-elected president of the State Federation of Farm Bureaus.

Grape growers of Napa County are making an effort to hold the experiment station work at Oakville.

It is now thought that the rice association will soon have almost entire control of the disposal of the 1920 rice crop.

A cargo of dehydrated eggs recently arrived from China. This is supposed to be for the bakeshops of the Pacific Coast.

Irrigators near Corning, Tehama County, are discussing advisability of organizing under the Wright irrigation law.

Northern California's citrus productive abilities were shown in the Orange and Olive Exposition held at Oroville last week.

Rice growers are taking up a campaign of advertising to inform Californians that rice is grown in California and not exclusively in the Orient.

Chico, Butte County, farm center has called together livestock and grain men and discussed matters of disposing of stock and grain at more remunerative prices.

Farmers of Glenn-Colusa district who are compelled to take old time prices for their products are insisting they must have a pre-war power rate or quit business.

Grain growers are pleased at the success of the farm bureau marketing committee's effort in securing grain elevators and the necessary marketing machinery for next year's grain crop.

Superintendent Kruetzer of the Durham Colony has been investigating pork markets at Portland, and reports that California hogs are discriminated against there because of many shipments of acorn fattened pork not coming up to the standard.

Director Hecke has been making a campaign with pear growers for more satisfactory work another season in the matter of spraying pears. While there has been no danger there has been serious loss because of the ignorance of Eastern inspectors.

Orland farmers have organized their own meat club. Different members will occasionally furnish the beef or other meat animal and the slaughtering and distribution will be in charge of someone of their own membership. It is proving remarkably profitable.

Central California

Kern County has been shipping Navels since November 20.

Fresno County farm bureau recently held a fat hog auction with 200 head.

Now the olive people are suggesting a "Buy a case of olives" campaign.

The new settlers of the Delhi Colony recently organized and made a drive on jackrabbits.

Stanislaus County poultrymen are having a course of lectures on poultry and poultry products.

The Prunedale Grange of Monterey County is conducting an active campaign for new members.

The Kings County farm bureau has approved the articles of incorporation of the state marketing exchange.

Fifteen hundred people attended the annual picnic of the Merced County farm bureau at the fair grounds.

The almond packing plant at Oakdale, Stanislaus County, has finished the season with 293 tons handled.

An effort will be made to keep the Middle Fork road to the Sequoia national forest open during the season.

Officers of the Alfalfa Growers Association have recently been touring alfalfa producing sections and securing new members.

At the Turlock hog auction sale on November 17 111 hogs were sold to one buyer at prices ranging from \$11.25 to \$12.75.

Cotton growers of Kern County last week made auto inspection tour of cotton growing sections of the county under auspices of the county-farm bureau.

Manager Niswander of the Peach Growers says the crop handled this year amounted to 24,000 tons, against 32,000 last season. The fig output will, he estimates, run around 9,000 tons.

Manager Webster of the San Joaquin Valley Milk Producers addressed the Arcola center of the Madera County farm bureau at a recent meeting. His theme was necessity for cooperative marketing.

The State Fruit Growers Convention at Fresno authorized the sending of representatives to a conference of railroad executives in Chicago in January to present the needs of the California fruit grower for better transportation service.

S. V. Christerson of the apple inspection service is after apple pickers who have been careless in packing of damp apples which have a faculty of picking up quantities of dirt and lessening the attractiveness of the pack. The ruling has been made "virtually free from dirt."

Central California Wool Growers Association has been organized. It is to include the sheep growers of the San Joaquin Valley district and will endeavor to secure a fair price for the past season's clip. A meeting was held in Stockton November 27 to discuss ways and means.

Kern, Tulare and Kings Counties farmers met at Visalia recently and invited the farm bureaus of Fresno, Merced and Madera Counties to join in another meeting to be held December 7 at Visalia to discuss and possibly protest the increase in electric power rate asked by the Southern California Edison Company.

Southern California

It is estimated that the 1920 turkey crop of the Imperial Valley will return the raisers thereof more than \$200,000.

The California Growers Association last week distributed \$21,000 to the apricot and peach growers of the Hemet Valley.

Apple growers of Yucaipa Valley, San Bernardino County, report trees making better fall growth than they have ever seen.

The output of cotton for the Peris and Nucvo sections of Riverside County this year will range between 500 and 600 bales.

The International Cotton League of the West will open a "spot cotton" market in Los Angeles, January 1, the first one west of Texas.

Poultrymen of Hemet Valley met the evening of November 15 to perfect plan for cooperative purchasing of supplies in a local way.

The San Dimas Orange Growers Association reports shipment of 659 cars for the past year, with a net return to the growers of \$865,465.31.

More than 50 beet growers of San Luis Obispo County have organized for the cooperative marketing of their crop on a five year contract plan.

O. F. Cook and W. B. Camp, cotton experts with the United States department of agriculture, last week visited all cotton sections of Southern California.

Coachella Valley people are very much in earnest in their efforts to induce the state highway commission to pave the road between Indio and Banning.

The Yucaipa Apple Growers Association is making distribution to growers on the Delicious, Jonathan, King David and early varieties. \$10,000 is being distributed.

The bureau of markets of the United States department of agriculture is working to secure standard sizes of containers for shipping all California fruits and vegetables.

Santa Ana and Anaheim have a scheme on hand for building a joint outfall sewer to the sea, a project that, according to engineers, must be carried out in the near future.

The Los Angeles chamber of commerce has instituted, under the direction of Dr. Ford A. Carpenter, a thermometer testing department for the benefit of orchardists using field thermometers.

Residents of the Peralta section of Orange County are much disturbed over the great amount of "Christmas" berries harvested for Thanksgiving, fearing none will be left for Christmas decoration.

The Riverside County farm bureau will send an attorney to represent it at the hearing held December 12 in San Francisco by the railroad commission to inquire into rates of Southern Sierras Company.

From various parts of the south end of the state come statements that ten sacks an acre of Mariout barley has been obtained as against six sacks an acre of common barley on adjoining check plats, and others report as high as 19 and 15 an acre for the new variety.

The Coast and General

Wisconsin potato growers are generally holding for better market.

Fruit growers of Coxsackie, New York, have incorporated as a packing and marketing association.

Automobile registrations in Oregon during the period, January 1 to September 30, numbered 99,998.

Paisley, Oregon, 50 miles from nearest railway, has just been the scene of a successful county fair.

The Wenatchee Apple Growers Association, Washington, will ship 8,600 carloads of apples this season.

Arizona cotton gins are running to full capacity and handling the crop as fast as labor shortage will permit.

The Iowa Vegetable Growers Association held its annual convention at Council Bluffs, November 17 to 19.

Wisconsin beekeepers are receiving 20 to 25 cents per pound for No. 1 extracted. Retail price is 30 to 35 cents.

The American consul at Alexandria, Egypt, reports the 1920 cotton crop of that country at about 612,000,000 pounds.

The Texas Farm Bureau Federation and the Texas division of the American Cotton Association have been consolidated.

During October, Phoenix, Arizona, started two new school houses, four apartments, eight business buildings and 69 dwellings.

The Washington egg laying contest shows two hens owned by residents of Seattle and Tekoa which laid 213 eggs each in the year.

Jackson County, Oregon, leads the state in pear acreage, having 8,050 growing trees. It is also second in apples, with 5,694 acres.

The pear crop in the Medford, Oregon, district is equal to that of last year, but the apple shipments to date are but one-half as large as those of 1919.

The Western Royal Livestock Show at Spokane, Washington, brought out exhibits from Canada to Southern California. Unusually good weather prevailed during the show.

Apple shippers of Yakima, Washington, say that more apples will be stored this year than ever before. Growers are reluctant to sell at present prices.

Exports from Japan to the United States in 1919 were more than \$200,000,000 above the value of those of 1918. Raw silk sent here in 1919 was valued at \$276,000,000.

Late cotton fields in Arizona are developing in better shape than ever before. Light frosts have touched lower leaves in some low sections, but have been beneficial rather than otherwise.

United States Engineer Gault has completed his report on the irrigation project to furnish water to 900,000 acres in the Imperial and Coachella Valleys and it has been sent to Washington.

Train service on the San Diego and Arizona railway commenced on Thanksgiving Day with two trains each way daily. One goes to Chicago and return, the other plies between San Diego and Calexico.



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"The big Goodyear Cord Tires on our two motor trucks are helping us to reduce the high cost of farming. These pneumatics travel anywhere in the fields and, during threshing, enabled us to dispense with eight teams and eight drivers. We had had to pay the drivers of these teams up to \$8 a day, in addition to the cost of the teams and the outfits. Also we have sold pasture and bought farm land in place of it. There are many other savings—of labor, time and money. Due to the quickness of the big Goodyear Cord Tires, we now can make more hay while the sun shines."—M. W. Bever, Farmer, Colby, Kansas, Rural Route No. 1

IT is everywhere observable, as above, that the traction, cushioning and activity of Goodyear Cord Tires on motor trucks, effect large savings for farmers.

This traction overcomes handicaps of soft, slippery going, of weather and of grade which formerly caused hauling delay and added expense in all kinds of farming.

This cushioning safeguards loads liable to injury, shrinkage or waste when unduly jarred, and thus enables the sale of full quantity and quality at best prices.

This activity permits entirely economical hauling to and from motorized machinery, and by bringing more selling points within hauling range, often reduces marketing costs.

All these virtues of the big pneumatics are made most practical by Goodyear Cord construction which sinews them with unusual strength and endurance.

Farmers' reports on motorization and pneumatics will be mailed to anyone interested, by The Goodyear Tire & Rubber Company, Akron, Ohio, or Los Angeles, California.

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CORD TIRES



Ten Acres a Day Plowed Right Soon Pays for Your E-B Outfit

An E-B plowing rig is built to show you steady, economical work in 1921 and a profit that you'll welcome. For tools that save time and money are the quickest way to cut down cost of farm production now.

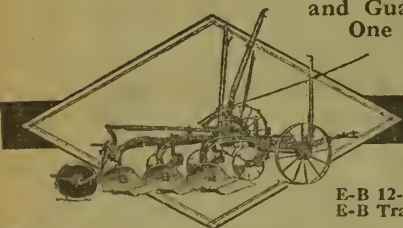
With an E-B 12-20 Tractor and an E-B Tractor-plow you can break ten acres a day in stubborn soil. A good day's work, but the tractor never hesitates. And an E-B Plow always does a clean job because it has strength, light draft and the construction that 68 years of experience has taught us is right.

An E-B Outfit bought now will help you save all year.

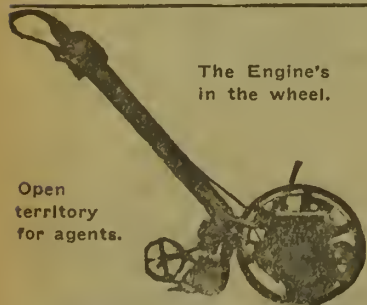
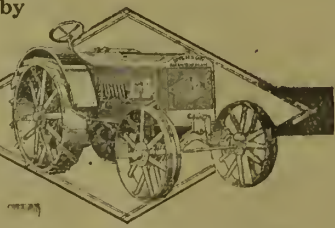
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Will do away with man power and make truck gardening easier — SIMPLE — POWERFUL — VERSATILE — WORKABLE.

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Fire Prevention on Watersheds

By Stuart J. Flintham, Los Angeles County Forester and Fire Warden



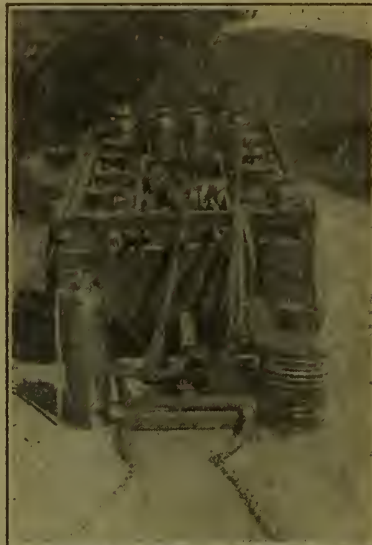
IT IS probably not possible to make every individual realize that the amount of water for irrigation and for domestic purposes depends almost entirely upon the amount of forest and brush cover growing in the mountains. But if a few responsible ones realize this fact, and after realizing it act in cooperation, it will mini-

water content will be lower the year and two years following and will remain subnormal until the brush cover has been returned by nature's slow but healing process.

It is upon this premise that the Los Angeles County board of supervisors has seen fit to base an ordinance recently adopted, which is of the most vital importance inasmuch as it defines the conditions under which fires may be started, if at all, and fixes a definite and stiff penalty for the violation of the ordinance. Under this new law, now in effect, it is unlawful to burn brush, slash, grass, etc., within 500 feet of lands covered with inflammable material, unless a permit is given by the county fire warden or one of his deputies.

The ordinance specifies that it is not necessary to get permits for the burning of trash in corrals, dooryards, on plowed ground, railroad rights-of-way or county roads, providing the fire is more than 50 feet away from lands covered with inflammable material. Permits issued by the warden or deputies will also specify exactly how the fires are to be governed by the party receiving the permit. The refusal of permits under any circumstances is within the power of the officials, and at all times the permits must be taken out by thoroughly responsible people who realize the great damage that can be done through the breaking away of fires in the lowlands that sweep off brush cover or devastate grain and hay fields.

The county is also taking definite steps to cooperate with citizens, communities and corporations, through providing fire fighting equipment in the form of an automobile trailer, loaded with six standard fire extinguishers, eight five gallon galvanized iron water containers, with shovels, mattocks and other material for fire control. This trailer is attachable to any automobile or truck with a chain wrap device. The outfit is built for heavy duty, with the two wheels fitted with pressed-on Goodyear tires, two inch steel axles substantially braced, and with a T-iron braced tongue. The body is of Oregon pine, with compartments to hold the equipment securely during trips over mountain trails. The trailer is being made in quantities for the board of supervisors at a cost of \$400, which is the amount of money asked by the county as reimbursement when the trailers are permanently placed in a locality. The reimbursement funds are turned into making more trailers. The first ten of these trailers have already been placed, or are being negotiated for, as a line of resistance along the Sierra Madre foothills, the Santa Monica mountains and other ranges that ramify from the main lines of hills. The supervisors say that the equipment cannot be bought singly by individuals for less than \$600.



For Fire Prevention on Watersheds

Deputy Fire Warden A. A. Lester is shown inspecting the equipment of the new county fire trailer. The receptacle he is holding is a galvanized iron water container, of which there are eight in the outfit, besides six fire extinguishers, shovels, mattocks and other fire control material.

mize the number of destructive fires.

It is an elementary fact to irrigators and water conservationists that where brush cover is denuded by fire the

Spot Cotton Market



THE most important step taken by the International Cotton League of the West in its meeting in Los Angeles was the endorsement, even the setting in motion, of a movement to secure storage facilities for cotton and the establishment of a spot cotton market. This step was requested by Dr. Geo. P. Clements for the Los Angeles chamber of commerce because of communication from the Los Angeles Cotton Exchange located in Los Angeles. The exchange stated the case in effect that:

"In the United States there are ten designated official spot cotton markets, namely: New Orleans, Galveston, Houston, Dallas, Memphis, Little Rock, Montgomery, Augusta, Savannah and Norfolk. Upon these ten markets the New York Cotton Exchange is forced by law to establish the difference in the price of the different grades above and below the grade middling, by taking the average of the quotations of the whole ten.

"Cotton placed in a bonded warehouse must be weighed by a licensed weigher and classed by a United

States licensed classifier. The two classifiers here are R. C. Rowland, secretary of this exchange, and W. F. Reich. The class and staple will be on every certificate issued from this warehouse by these two disinterested classifiers. This will mean that bankers will know absolutely on what their money is loaned. In loaning money on shoes they would desire to know whether the shoes were Hannan or Douglas and so they will also appreciate the information whether this cotton is good middling or low middling. The present difference in these two cottons in New Orleans is eight cents a pound or \$40.00 per bale. Certificates issued by U. S. bonded and licensed warehouses are as good as U. S. Liberty Bonds."

Under present conditions cotton can be shipped from Phoenix or other Salt River Valley points to Los Angeles and by water to Eastern manufacturing centers for less than it can be shipped by rail from Arizona directly East, in fact the rate is \$1.62 via Los Angeles and water transport as against \$1.82 direct rail cost. This gives opportunity for development of

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a great market for Los Angeles. It is understood that warehouses are available at Los Angeles harbor.

Reports from cotton producing sections indicate most serious condition confronting all cotton growers. In some sections Mexican laborers, weakened by starvation rations; in other cases, laborers arrogant because of necessity the grower is under to market his crop soon if it is marketed this season, and again the discouraging condition of the cotton market have made it impossible in many cases for the grower to harvest any of his crop. Some cotton will remain in the field unharvested, while a vast number of plantations will be given simply the once over. The securing of labor is so serious that resolutions were presented and unanimously carried, in effect that because of the need of the cotton grower and the "ill-advised and uncalled for interference with and unjust criticism of the operation of the Imperial Valley Growers Association in its work of importing and furnishing Mexican cotton pickers to the farmer in the Imperial Valley on the part of certain employees of the state of California, connected with the state housing and immigration committee and the state labor bureau, now therefore be it resolved by the International Cotton League of the West in executive session in the city of Los Angeles, November 19, 1920, that the governor of the state of California be requested to curtail the activities of the above mentioned individuals and that a copy of this resolution be sent to the governor."

In the matter of seed it was reported that there was sufficient Pima to plant 75,000 acres, which was sufficient for Arizona and San Joaquin Valley sections. The setting apart of certain sections for pure seed production was urged.

ALMOND VARIETIES FOR POLLINATING

The question often comes as to planting together of varieties of almonds so as to secure perfect pollination. It has long been observed that some orchards planted of various varieties bear much better than others. We have table prepared by the college of agriculture giving the following varieties as intersterile, interfertile and also giving order of ripening. These are the varieties:

Intersterile: Nonpareil and I. X. L.; I. X. L. and Peerless; Languedoc and Texas.

Interfertile: Nonpareil and I. X. L. with Ne Plus Ultra; Drake with Nonpareil, I. X. L., Ne Plus Ultra, Peerless, Jordan; I. X. L. with Drake, Jordan, California, Languedoc, Ne Plus Ultra and Texas; Ne Plus Ultra with California, Drake, I. X. L., Languedoc, Nonpareil.

Order of ripening: 1, Nonpareil; 2, I. X. L., Jordan; 3, Ne Plus Ultra; 4, Peerless, Princess, California, King, Silver; 5, Golden State; 6, Lewelling; 7, Drake; 8, Languedoc, Texas.

California is best pollinizer for varieties blooming at nearly same time.

SHORT COURSES

Short courses at Chaffey Junior College of Agriculture, Ontario, began last Monday morning with sessions which will last for two weeks. The classes on gas engine and farm mechanics continue up to and including December 10. There is also a general section covering matters of soil fertility, farm labor, pruning, insecticides and sprays and other studies of interest to orchardists. There is a citrus section with lessons on general orchard problems, fertilization, diseases of citrus trees, pruning of both oranges and lemons and even touching upon inarching for gophered trees. A. C. Hargraves is in charge of the gas engine and farm mechanic section, while in the general section the addresses and lessons are in charge of W. P. Kelley, M. E. Hill, E. H. Richardson, G. P. Weldon, Harry S. Smith, Geo. H. Hecke, G. P. Gray, Walter Mulford and A. D. Shamel. The citrus lessons are in charge of citrus specialists, including C. J. Booth, W. M. Mertz, H. J. Ramsey, E. L. Dreher, H. S. Fawcett, G. G. Laidlaw, E. S. Lewis, R. S. Woglum, H. J. Quayle, C. P. Wilson, C. S. Milliken. Addresses and lessons in the deciduous section are by G. P. Weldon, H. R. Stanford, J. A. Campbell, R. S. Valle, R. E. Smith, C. A. Perrin, E. L. Overholser, L. B. Scott.

AVOCADO OIL

At the branch United States Citrus By-products Laboratory in Los Angeles, E. M. Chace, chemist in charge, has expressed the oil from 50 pounds of the Chappelow avocado, contributed by W. H. Spinks, Duarte. It was found best to first partially dry the pulp before attempting extraction. The fruits analyzed but 14.58 per cent of oil and as eight to ten per cent is not recoverable, remaining with the cake, the amount obtained was not large. A pound will be collected by Mr. Chace and forwarded to Washington where its chemical constituents will be determined. In its raw or unrefined state the oil is a beautiful emerald green, rather tame to the taste, having none of the nutty flavor present in the better varieties of avocados. No probable or possible use is at present suggested for the oil except, "It may make a good salad oil," and while the present price of the fruits precludes its manufacture, a heavy drop of fruits may sometime furnish material for further experiment.

NEW CEREALS AT UNIVERSITY FARM

The field crop department at the university farm is to test a larger number of new cereal varieties this season and has recently received an extensive collection of new hybrid wheats and barleys from the Maple Grove Seed Breeding Farm in Saskatchewan, 11 wheat varieties from the Minnesota experiment station, 16 new wheats from India, 33 wheats from the Washington state experiment station, six hybrid wheats from Western Australia, 20 wheats from Perth, Australia, 13 wheats from the Longerenong agricultural college, Doon, Victoria, Australia, and numerous other lots of miscellaneous cereal varieties from the various state experiment stations. These will all be grown on the experimental plots at the university farm this season in competition with standard varieties.

Quality First

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Velvet Grip

Quality Always Wins
In every walk of life, doing something better than the other fellow spells Success. Boston Garter's success is just a matter of being ahead in quality and workmanship, giving wearers the greatest satisfaction. **GEORGE FROST CO., BOSTON, MAKERS OF Velvet Grip Hose Supporters** For Women, Misses and Children

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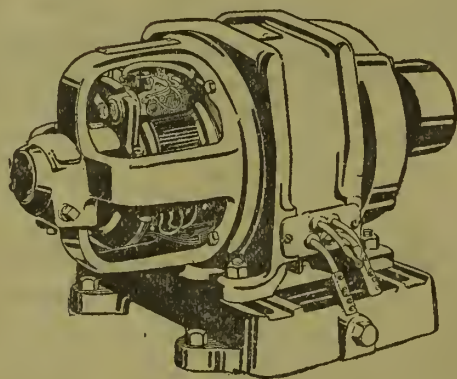


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California Olives, Purest of Food

By C. B. Messenger



THE tragedy of the olive is not entirely confined to the homes which were devastated because of the poison in the fruit which was sent East something over a year ago. There are homes in California which, depending upon olive orchards for subsistence, will suffer because of the campaign of the importers of green Mediterranean olives and the unfair attack of the Eastern newspapers on the industry, and for all of this the growers are entirely blameless. There is scarcely a form of loss in which the hotulinus poison has not at some time been found. It is not a question of the particular food but of the method by which it is handled. The olive curing plants have learned a lesson at fearful cost, though here again the loss has been because of momentary carelessness—or, perhaps, more correctly, lack of understanding, of the deadly poison which may enter any improperly sterilized food—on the part of a limited number of those engaged in the industry.

Of course, the industry cannot ask for entire exemption from the results of these cases which occurred something over a year ago, but the animus of the fight and the character of it is shown by the following, written by Alfred W. McCann in the New York Globe and printed January 20, 1920:

"Truth, justice and common decency demand that the reputation of the Spanish green olive be cleared of any stain put upon the olive family by the California ripe product."

We believe it may be said today that without question the safest food in the world to eat is the California ripe olive. Grower, packer and all are combining in restoring confidence in one of the most healthful and nutritious of foods. Any of the holdover crop which was not processed at the required 240 degrees has been reprocessed and sterilized so that there can be no question whatever as to its desirability as a pure food. The new crop now being harvested will amount to around twelve or thirteen thousand tons. Of course a large quantity of this will this year be made into olive oil, but during the month of September there was received at the port of New York a total of a half million gallons of Mediterranean produced oil, the import duty on which is now 20 cents per gallon, reduced from 40 cents under the former tariff regulations. Owing to this immense importation the price is rapidly dropping and the oil mills are not offering to buy in any large quantity of oil olives at any price, though it is said the limit price for olive oil manufacture is around \$50 or \$60. One sale has been reported around \$75, but this was for a small quantity of exceptionally fine fruit. The growers are hoping to receive around \$100 for pickling fruit. In fact, some sales have been made at that price. A ton of olives will produce about 38 gallons of oil.

The bulk of the California output at first was largely from south of Tehachapi, but that section now produces only about 20 per cent of the olives of the state, the greater proportion being produced in the eastern foothills of the great central valley. The San Joaquin Valley from Stockton south will produce approximately 38 per cent, while north of Stockton, largely in the foothills of Butte County, there is produced approximately 42 per cent. The increase will be more largely north of Tehachapi during the next two years, for the planting in the San Joaquin Valley has been much greater than in the southern portion of the state.

The question now arises: "What can be done with the coming crop of 12,000 tons of wholesome food?" We understand the packers are willing to go the limit in taking the risk of handling this crop, but there is so much uncertainty that it seems difficult to get definite decision as to disposal of crop now beginning to ripen. The manufacture of oil, which is today wholesaling around \$3.50, does not leave very much return to the grower. Disposal of the crop which may be pickled, or rather cured, on the ranch

is prevented by ruling of the state board of health which was made August 7 in effect that olives shall be deemed adulterated within the meaning of the California pure foods act unless the same shall have been sterilized at a temperature of 240 degrees Fahrenheit for a period of not less than 40 minutes by means of a heating device or autoclave which shall have attached thereto an automatic self recording thermometer or heat measuring device in proper working order and that the temperature records shall be available at all times to the representatives of the state board of health.

The board further orders that the director of the bureau of foods and drugs, California state board of health, be instructed to seize and quarantine all ripe olives which are not produced in conformity with the above regulations and to institute action for their condemnation and destruction.

It seems from this that there will be no possibility of disposal of bulk cured olives. The only escape will be to follow the "home brew" plan, buy fresh olives and cure at home. We believe there has never been a case of poisoning from olives processed by the lye-cold brine method when the fruit has been left in the open vessel and exposed to air. We hope this season's work will show advisability of sale of the bulk olive. Of course, the ruling does not affect sale of dry salt cured olives.

The industry means too much to California for us to allow it to be destroyed; the earnest thought which has been given to this problem must be continued and the next few years devoted to restoring it.

FALSELY ADVERTISED RODENT POISONS

That the reliable manufacturer of commercial squirrel poisons is subjected to unfair competition by his unscrupulous competitor and also by the careless or poorly equipped manufacturer is clearly shown in an article scheduled to appear in a forthcoming number of the Monthly Bulletin of the California department of agriculture, written by Geo. P. Gray and A. C. Wilher of the division of chemistry.

The tendency of some manufacturers to try to increase their sales through misleading and sometimes false advertising is pointed out in the article and an instance is cited in which the lives of children might easily be placed in jeopardy by a highly poisonous preparation falsely advertised as "non poisonous" and "harmless." The poison in question consisted of small, white pieces, closely resembling a popular kind of candy "chews" and strongly flavored with anise oil, a most excellent temptation for the average child. The advertising matter accompanying the preparation made the somewhat surprising and contradictory statements that it is "non poisonous"; contains "a scientifically prepared, tempting bait combined with a deadly chemical agent which affects the gastric juice of rodents only," and "is perfectly harmless when eaten by dogs, cats, fowl and even humans, as the chemical agent in the cubes affects only the peculiar gastric juices of rodents."

Examination of the sample disclosed the fact that it contained nearly one-third of its weight of barium carbonate, a poison rated by toxicologists as being violent poison to human beings even in small amounts. A case is on record where a woman was severely poisoned from taking two and one-quarter grains of the chemical.

The writer of this article urges that some means be provided for prohibiting by law the sale of such poisons advertised as "non poisonous," "harmless," etc., and maintain that the greater harm in allowing such preparation to masquerade under false and misleading labels and advertising matter lies in their menace to human life and not in their possible ineffectiveness against rodents.

ALMONDS: A BIT OF HISTORY AND METHODS OF CULTURE

(Continued from Page 719.)

ways an easy tree to grow where conditions are favorable, it is more particular in its requirements than most common orchard fruit, and the grower may find it difficult to produce a good, thrifty tree unless he chooses the proper location. Very often the almond tree will grow well and make a fine, healthy tree, but owing to unfavorable conditions will not bear regularly, if at all. There are only certain districts in California where the dangers of frost and extreme heat are minimized; therefore, we hesitate to recommend any particular district without scientific counsel and advice.

Having located in a proven district where proper soil and water conditions are favorable, the next step is tree selection—only healthy, hardy stock can produce almonds that will meet the high standard set by the Blue Diamond brand almond. Trees growing to a great height are unprofitable, for it costs more to harvest the crop after they are grown than market conditions warrant.

Almonds are not "picked" in the strict sense of the word, but sheets are laid under the trees and the almonds are knocked from the tree with long poles. So it is readily seen that trees of about 25 or 30 feet in height are more easily harvested than the old variety of trees that were planted in the early days by the pioneers, and grew to a height of 50 or 60 feet.

The almond grower of today must use scientific care in the production of Blue Diamond brand almonds. Nothing is left to chance. The study of variety is one that requires consideration. The public generally knows almonds by the terms hard shell and paper shell. Naturally, to meet the popular demand, soft shell varieties should be selected.

Plant hybridization and culture are very important. For pollination of almond trees, bees are placed in the orchard. In the setting out of trees distance and varieties are chosen according to district and location. Almond trees must have plenty of sunlight and air. In the setting of trees the utmost care is necessary to secure a uniform stand of vigorous trees. Pruning is one of the best means of securing and keeping healthy, productive trees, but it requires careful, thoughtful and systematic pruning throughout the entire life of the tree.

The almond is the first of all trees to bloom; the beautiful blossoms of white and delicate pink are the first to appear. They burst forth usually late in January or the early part of February, according to the district.

Blue Diamond almonds are produced and grown generally in the more northern parts of California. There is only one county in Southern California, Riverside County, that produces almonds in sufficient quantities to warrant the forming of a local association. This association is a member of the exchange.

The Almond in History

The almond is supposed to have found its way into California from Europe about 1853. It came to us after long centuries of existence, with many of the imperfections that characterized its early career. To a Californian, A. T. Hatch of Suisun, is given the credit of first having undertaken the improvement of the almond along scientific lines. So marked were the results obtained by Mr. Hatch that the leading commercial varieties of almonds grown in California today are designated as Hatch varieties. Chief among these are the Nonpareil, the I. X. L., and the Ne Plus. These are the leading and highest priced almonds produced in California at this time, and when marketed under the celebrated Blue Diamond brand are the choicest almonds produced anywhere in the world.

While Mr. Hatch greatly improved the quality of the almonds, the varieties originated by him, when planted in the orchard in solid blocks of a single variety rarely give a satisfactory yield. The quality of the product was improved at the expense of the output. To obtain cross-pollination and increased yield it has been found to be good practice to alternate the Hatch varieties with some harder tree. Years ago hard shell almonds

were used for this purpose, but now the Drake or other soft shelled seedling varieties are generally used because of their higher market value. Usually two rows of the soft shelled varieties alternate with four rows of the Hatch varieties. Planting in this manner is advisable to facilitate gathering, which will later be explained. The rows should run, as far as may be, at right angles to prevailing winds at the time of blooming, viz.: if the prevailing winds are from either the north or the south, run the rows by varieties east and west. This matter should be given the closest attention.

No general rule can be given for the distribution of the several varieties of almonds that will apply to all sections. Experience is the only safe guide as to what varieties should be planted in any given locality.

The almond is perhaps the oldest food staple known to man, being referred to in Genesis 43:11. Also the famous rod of Aaron mentioned in Numbers was taken from an almond tree. So, too, the rod cut by Moses, that afterwards became a serpent

when cast down, was an almond branch. There are many Biblical references to the beautiful pink bloom of the almond. It has long been a favorite of the Jewish people, being used extensively by them in the decoration of their synagogues.

Old as the almond is, it is grown on a commercial scale today only on the shores of the Mediterranean Sea and in California. Attempts have been made to produce almonds in Arizona and Mexico, but the output in these, and numerous other sections, is consumed by the local demand.

The almond is a tree that requires thorough cultivation. One must not lose sight of the fact that the period of almond growth and activity extends over the greater part of the year. If the tree is to have vigorous buds from which to mature profitable crops, conditions must be such that the moisture nature intended for the trees shall be available at the proper time. In the wild state, in most instances, the trees find sufficient moisture to maintain their existence. With the domestic tree, however, additional

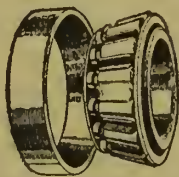
burdens are added. It must not only maintain its existence but it must produce profitable crops.

One of the best means of securing and keeping healthy, productive trees is by careful, thoughtful and systematic pruning. Before the California Almond Growers Exchange was organized, the usual treatment given most of the almond orchards would indicate that the growers considered pruning to be one of the least important of the cultural practices. This has been overcome by cooperation, education and the strict and careful attention to grade Blue Diamond brand almonds up to the highest standard.

KIND THOUGHTS AS TONIC

When you find yourself ready to put the worst construction on the acts of others, when it is easier to believe that an acquaintance passed you without speaking because she wished to cut you than it is to assume that she failed to see you, it is high time to take yourself in hand. Suspicious people need the tonic of kind thoughts and generous judgment.

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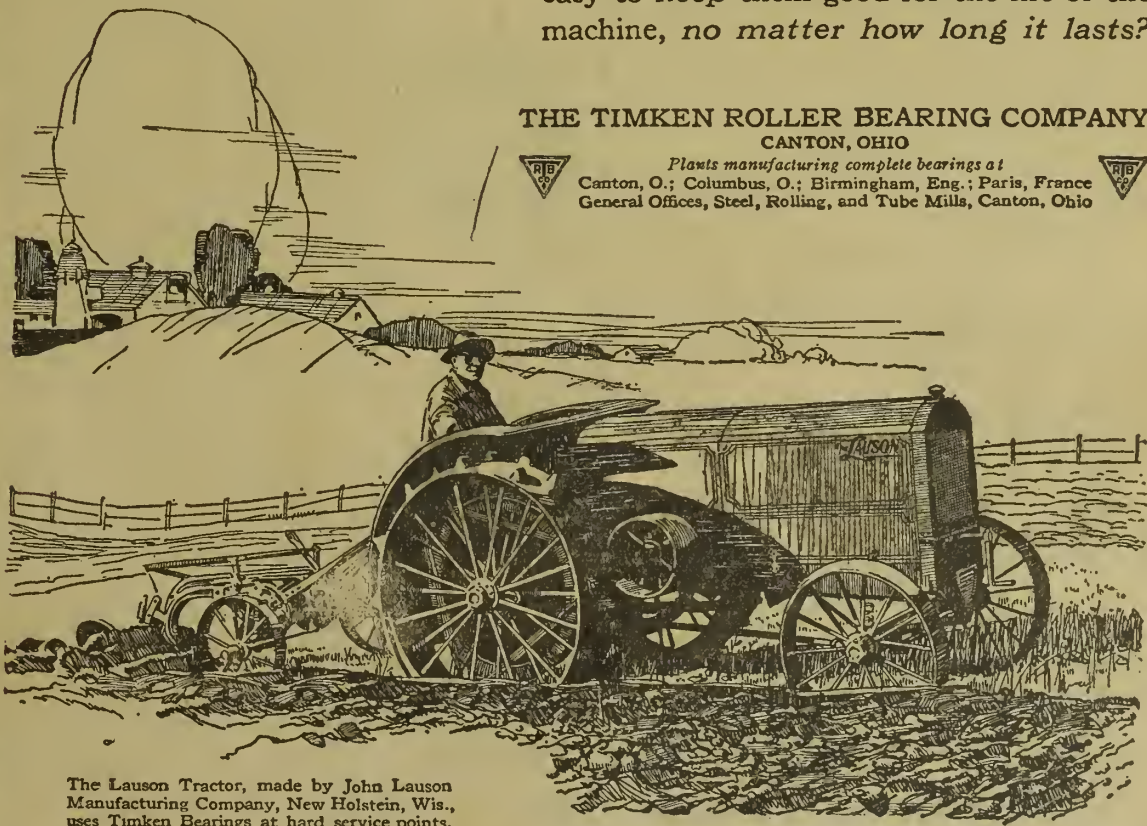
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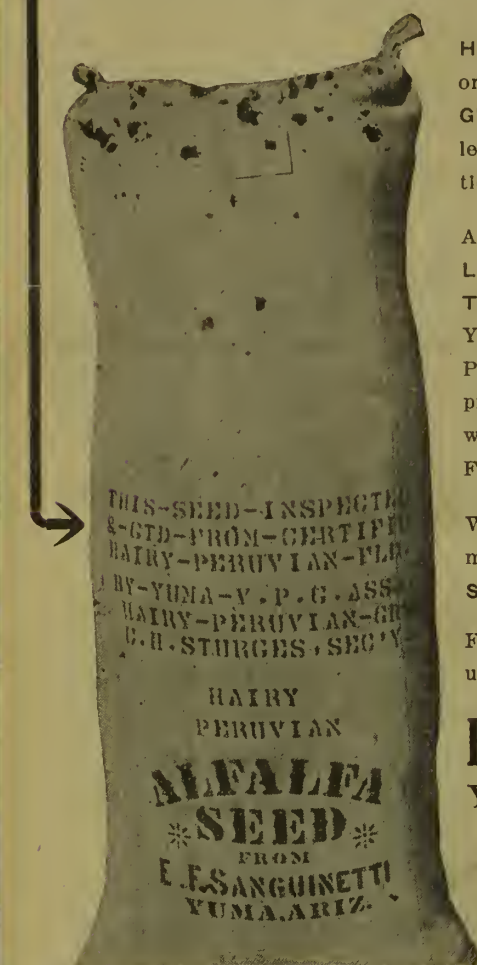


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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Dates Near Coast

Kindly give me information as to what varieties of the date palm would do best at Anaheim. About what would offshoots and rooted trees cost and where may they be secured? Would want only a couple of trees for home use. Have room for a couple of palms and thought they might as well bear fruit as not, although they might not be of commercial value.—Subscriber, Anaheim.

We fear there are none of the named commercial varieties of dates which would do well so near ocean influences. The date is understood to do best "with its feet in the everlasting waters and its head in the blazing desert sun," and this has proven true as to growing dates in the Southwest. The Coachella Valley, where intense summer heat prevails from June to September, has grown some of the finest dates produced in the world. The commercial favorite there is Deglet Noor. Offshoots from plants of this variety, however, are practically impossible to secure, in any case for no less than \$15 each. Likewise a seedling, which has been grown to bearing age to determine whether it is a pollen bearer or fruit bearer and of a good variety, is high priced. One may plant seeds, however, from high quality of commercial dates, and if large number are planted they may be grown in nursery row until they bloom and it is determined which are male and which are female. Then the fruit bearer may be separated and set where it is desired. More specific information may be had by writing Superintendent of Documents, Government Printing Office, Washington, D. C., and asking for Farmers Bulletin 1016, "Propagation and Cultivation of the Date Palm," by Bruce Drummond. This bulletin contains a list of other bulletins touching upon date culture and also the Year Book of the department of agriculture for 1900 contains nearly 40 pages on the date palm and its culture. W. R. Nutting is making a test of a vast number of seedling dates on his ranch near Fresno, and in his investigation has found several palms in the valley which he has taken pains to pollinate and which are producing attractive fruit this year. In a few years we will know more about dates than we do now and perhaps varieties may be developed which will succeed in Orange County or other near coast sections.

Killing Out Bermuda

I notice in last issue of the Cultivator inquirer wanting to know how to kill Bermuda grass. I will tell you how to do a good job. Plow the land this winter (not too deep) and sow to grain and the grain will do as well as if no Bermuda was there, as Bermuda does not grow in the winter. Harvest your crop for hay or grain and you can pasture and get the feed until August, then dry plow and don't miss any roots (that is, make the plow cut all the land), and in four or five weeks after plowing dry the job is done. Do not harrow or work land after dry plowing; let it dry out well. The land must be dry when you summer plow and do not irrigate until roots are perfectly dead. The plowed surface will soon dry so no sap roots will start. I have done a perfect job on two pieces of land in this manner, killing out Bermuda, salt grass and rag weeds.—I. D. Reinhart, Tulare.

Does Eat Young

Could you inform me through the Cultivator what is the matter with does when they eat their young? The little ones are three weeks old.—Subscriber, Los Angeles.

Does, prior to and at time of kindling, have unnatural appetites. The system, owing to great drain upon it, requires elements that are not obtained in their regular feed. It is wise to supply these. Most all of the weeds and grasses contain these and feeding them prior to kindling will

overcome these appetites. Again, putting a piece of fat pork in cage at time of kindling helps. There are, of course, some cannibals, and where they persist in doing this it is best to make a potpie out of them. The writer feeds a variety of weeds and roots all the time as the "ounce of prevention" is worth more than the hour of vain regrets. Would advise the subscriber getting a good hook on the raising of rabbits and thus obtain a list of the various feeds and remedies.—W. D. W.

Pumpkins for Milk Cows

Kindly tell me if pumpkins are good feed for milk cow?—Subscriber, Puente.

Without question pumpkins are a valuable addition to the ration of milk cows. Henry's "Feed and Feeding" states: "Two to five tons of pumpkins, including seeds, equals one ton corn silage for dairy cows. The seeds contain much nutriment and should not be wasted." It must be borne in mind that pumpkins, beets and similar feeds are more conditioners and appetizers than carriers of protein, that is, such feed should be fed with abundance of alfalfa or other feed rich in protein.

Walnuts in the Great Central Valley

Which is the best walnut for planting in Tulare County, especially which is the best of the four varieties—Eureka, Franquette, Mayette, and Payne? What is the best time for budding walnuts?—Subscriber, Tulare.

Please give information regarding English walnut planting in Colusa County. Would you recommend setting Vrooman Franquette? Are the Franquettes and Mayettes good stock when grafted on Black? Does the seedling bear well? We have heavy north winds at times, but have plenty of water, fine sandy loose soil, and no hardpan.—Subscriber, Williams.

One of California's most experienced walnut growers, J. B. Neff, has given us of his experience in answer to the points raised in the above questions. First answering a general question as to the adaptability of the Sacramento and San Joaquin Valleys to walnuts with good soil conditions (such as our Williams subscriber has), with abundance of water and in favorable years, it is probable the Franquette and perhaps the Eureka will give fair crop of exceptionally fine nuts. It must be borne in mind that there must be sufficient water available to apply at any time the trees may need it. The walnut will not tolerate drouth when it is maturing nuts. Besides, if water shortage is allowed at any time the abundance and luxuriance of the leaves are affected and then a few hours of intensely warm sunshine burns and seriously injures the nuts. Thus far planting of walnuts in the interior valley has been more largely in the Bay counties or at least within reasonable distance of the Golden Gate, or ocean, influence. It must also be borne in mind that local conditions often affect the success of a crop such as walnuts, and hence the best answer for each locality is the orchards of the same kind which have been given proper care in the same community. Besides looking over these established orchards which give the wisest answer, we would use great care in planting too extensively. In other words, experiment according to your means and ability to lose. There is no finer walnut grown in the world than the California grown Franquette. With our limited information as to walnuts in the two sections referred to in the above questions, we would recommend for Northern and Central California experimental use first the Franquette, second the Eureka; other good ones are the Concord and Mayette. As to grafting it is usually done in February or March, according to location, care being taken to set the scions about the time of the beginning of the spring flow of sap as shown by the swelling buds. The stock usually preferred is the wild Northern California Black. The Royal and Paragon are sometimes preferred, especially for damper soil conditions. Re

(Continued on Page 745.)

Drouth Injured Orchards Attacked by Borers

By E. R. de Ong

ORCHARDS in the interior valleys which have been exposed to drouth and high temperatures have in many instances suffered from sunburn, followed by attacks from flat headed borers. Peach, plum, prune, cherry, apple and almond are all being attacked. This insect does not usually attack sound, healthy trees but seems to prefer those which are in a weakened condition. Trees suffering from drouth cannot evaporate sufficient moisture to cool their surfaces, hence they sunburn on the sides where the sun's rays are hottest. These areas harden, the sap ceases to flow freely, and growth is checked. This is the condition which favors the development of the flat headed borer, and here they thrive and multiply until the branch of tree dies and hardens. Other borers may attack in the last stages of injury, or even after the wood is dead and dry, but it is the flat headed borer that usually begins the attack.

The borer, when full grown, is about five-eighths of an inch long, light yellow in color, and with the fore part of the body flattened and very wide in proportion to the remainder. They are found in shallow burrows, a little way under the bark or in young trees they may bore directly into the heart of the wood. The winter is spent in the worm or pupal stage, the adult beetle appearing in spring or early summer. The beetle deposits eggs underneath the rough flakes or barks or any part of the tree, and the larva

or borer which hatches from this egg burrows down to the cambium layer. As already indicated, the beetle prefers to deposit eggs on weakened trees only, but if they have become very abundant in an orchard they may be found attacking healthy trees. Hence the necessity of giving careful attention to the orchard through the winter.

Control

Weakened limbs on trees, that show signs of borer work, should be cut out carefully through the fall or winter and burned. Avoid leaving the brush or limbs piled in or near the orchard until spring. Sunburned areas or patches of dead bark on the trunk, large limbs, and even small twigs, should be examined for borers. If only a few are found, it may be possible to kill them in their burrows with a knifeblade or wire. The wound should be covered with asphalt or grafting wax.

Prevention

Prevention lies more in keeping the trees healthy and with the sap circulating vigorously in all parts of the tree than in applying repellants such as soft soap or carbolic acid, although the latter may be of some value if applied at intervals through April and May or possibly June. The use of a good adhesive whitewash is also desirable for trees just after they have been planted or the stumps of top worked trees or any part of a tree that is not shaded and is exposed to the hot sun.

December in the Vegetable Garden

Southern California

By D. F. Reichard

IT is beginning to look as if we would have to do some irrigating in order to get the ground wet enough to work up for early planting, or even to keep cover crops growing. The rains we have had up to the last of November have soaked in only to a depth of six to ten inches. This is not enough moisture for the dry farmer, but by properly working his ground and with what rains come during the next three months, even though it is but six inches, if he thoroughly cultivates and stirs his ground after each rainstorm he will have retained enough moisture to make a crop of beans, corn, sorghum or grain. For the vegetable grower more moisture will be required, because to make good succulent produce there must be a vigorous growth, and that requires an unstinted amount of moisture. So to the persons intending to start their garden early the suggestion would be to soak up the ground thoroughly during this month before working it up.

Although quite a list of items can be planted with success in the frostless or thermal districts, as a general thing it is not advisable to plant very heavily during December. It is not good growing weather; one will gain more by applying his energies to getting his land in shape for planting a few weeks later.

For succession one may put in a few beets, carrots, turnips, radishes, lettuce, spinach and pea seeds and set out cabbage, cauliflower and kale plants, also get established the permanent plants such as asparagus, artichokes, rhubarb, horseradish and berries.

Your growing crops of peas, cabbage and so on will need a little water, also cultivation, as the rains of last month started the weeds and grass to growing and now is the time to kill them.

Prune the trees and bushes and spray them with Bordeaux mixture or lime-sulphur solution to destroy any fungus bacteria that might be on them.

Northern California

By Albert R. Gould

UTO this date the rains have been somewhat liberal in our northern section. Some of the land should now be in good shape for garden operations. Between the rains every opportunity should be taken to get the various plots ready, and many of the early spring crops will need attention by cultivation, etc. Seeds of many others may now be sown. This will be cleaning up month, and all refuse, weeds, etc., should be trenched in or plowed under as it is all of value to the soil. We have often advocated rotational cropping in these notes for several reasons. This method checks the devastation of insects and fungus diseases by moving the locality of the crop which they affect. Again, the advantage of planting a leguminous crop, such as peas or beans, and following it up on the same plot with beets, potatoes or cabbage, is that the later crops have the benefit of the nitrates left in the soil by the first named crops. To get good results therefore it is advisable to practice this system.

Radish

Winter varieties such as Rose winter, White winter and Black Spanish may still be sown in rows 18 inches apart. Thin out to six inches in the row.

Lettuce

Sow Los Angeles and Big Boston, two large heading varieties. They require a fairly rich soil. Sow the seeds in rows 18 to 20 inches apart. Later thin the seedlings to six inches apart in the row. A hardy crisp variety is White Paris Cos, often called Romaine. This may also be sown now.

Onions

Much cultivating will be needed through the plots of the early varieties as these will be now making rapid growth. On the plots prepared for main crop varieties sow Ailsa Craig, Prizetaker and Australian Brown. A good white variety is Southport White Globe, a fine keeper. Sow in rows 24 inches apart to allow for using the wheel cultivator. There is

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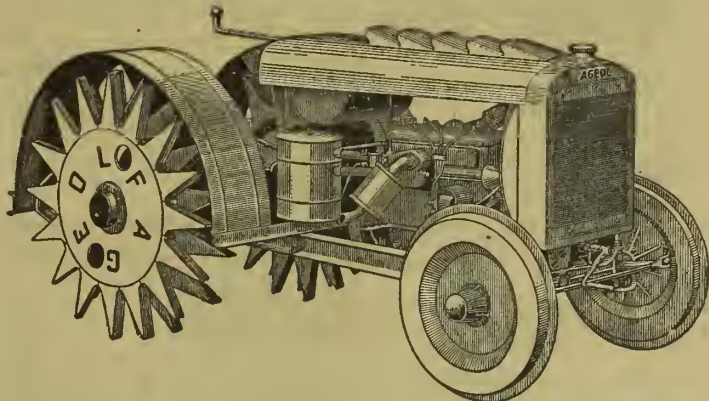
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still time to plant onion sets for early onions.

Spinach

This is an excellent spring crop. Seeds sown now of the New Zealand variety will furnish a lasting supply of green vegetable as this may be cut frequently. Bloomsdale Savoy is also a very fine variety for early spring use. Sow in rows 18 to 24 inches apart.

Peas

Sow for succession Little Marvel, Laxtonian and Blue Bantam, all early varieties. These should be sown in fairly rich soil in rows two feet apart. Dust those previously sown with arsenate of lead to prevent the birds from destroying them as they are fond of the young shoots.

Asparagus and Rhubarb

Plant strong roots of Palmetto and Conover's Colossal, two of the best varieties. Plant the roots in trenches well manured 6 inches below the level of the bed with the rows 3 feet apart. Rhubarb should be treated the same, and the best varieties of these are Myatt's Victoria and Crimson Winter. The latter produces throughout the season.

Turnips and Kohl Rabi

Sow these in rows 12 to 18 inches apart in rich soil. Both crops mature quickly and successional sowings should therefore be made throughout the season. They require plenty of

water. Sow Early Snowball and Early White Flat Dutch turnips and Early White kohlrabi thinly. The tops of these may be used as a green vegetable.

Southern Arizona

By M. E. Bemis



THE garden work for December, so far as the seeds which may be planted in December, is not materially different from the plantings made in November. These include beets, carrots, lettuce, parsley, parsnips, peas, radishes, spinach and turnips. Also the following plants may be put out: cauliflower, cabbage, strawberries. Unless the weather is quite cool, germination of above mentioned seeds is likely to be more satisfactory than in the early month's plantings. I find that my plantings in the latter part of September of such seeds as beets and lettuce are very irregular in germination, only a small percentage coming up, while plantings in October and November show a very much larger percentage of plants. As a rule radishes, turnips, mustard and sometimes beets are of a higher percent germination than some other vegetables. Liberal use of seeds under irrigation conditions is advisable. Notwithstanding advantages of irrigated gardens, we have to admit that germination is one of the serious problems. In planting at this season of

the year it is well to remember a little kale and Swiss chard for the chickens.

Some who have had considerable experience with strawberry plants put out at this season of the year say they will do just as well as at any other time of the year. The well known variety, Arizona Everbearing, has proven as desirable and probably has more friends than any other variety grown here. A sandy, loamy soil, if well fertilized, so that there is humus to lighten it, produces well, and, as is well known, such soils are stronger in fertility than lighter soils. The strawberry bed should be ridged

and for horse cultivation 30 to 36 inches apart and ridges six to eight inches high from the bottom of furrows, and plants 12 to 14 inches apart on the sides of the ridges. Only strong young plants should be used and these should be set a little deeper than from the soil from which they were taken, although not deep enough to cover the crowns. The Blue Ribbon and Texas, also the Lady Thompson, do well.

Although the growth of gardens planted for December is ordinarily slow, by cultivation a moderate root growth at least is induced and earlier maturity hastened.

December in the Ornamental Garden

Northern California

By A. R. Gould



THE active planting season for shrubs and other ornamentals is at hand and nurserymen are busy filling orders. We have given from time to time in this column a large selection of choice subjects which will be found suitable for our northern section of the state. It is always a wise plan to make special note of anything you may admire in the way of trees, shrubs or flowers and as the proper

planting season arrives you may have the joy of adding this to your own garden. Roses and the climbing vines such as wistaria, jasmine and honeysuckle are all favorites and may be seen on the porch a wealth of bloom. Some may be anxious to establish a garden which will require the least attention and yet provide some flowers to cut, and there are perennials and flowering trees and shrubs which one may use to attain this end. Trees coming under this heading are: *Acacia baileyana*, *A. cultriformis*, *A. floribunda* and *A. dealbata*; *Eucalyptus crebra* and *E. saligna*, both very ornamental trees, are not such rampant growers as others of this family. The catalpa is also a very beautiful tree when in flower. Other trees to select from are the Lawson cypress, Monterey pine and Coulter's pine (having the large cones), *Sequoia gigantea* and *S. sempervirens*, the redwoods, *Abies excelsa*, *A. pinsapo* and such handsome cedars as *C. deodara*, *C. atlantica glauca* and *C. libani*. The purple plum tree gives a touch of color and the weeping birch is attractive. Of the flowering shrubs one may use *Spiraea Van Houttei*, *Philadelphus inodorus*, *Genista juncea* (Spanish broom), *G. monosperma*, *G. andreaeanus* and *G. canariensis*, all worth planting. Then we have *Berberis Darwini* and *B. Thunbergi*, *Abelia grandiflora*, *Deutzia gracilis rosea* and *D. Lemoinei*, and lilacs in variety. For shady places or the north side of the house you may plant fuchsias, of which there are a variety of colors, and hydrangeas in white and pink. For the flower borders for early spring flowering plant bulbs of course, snowdrops and crocus to flower early, also daffodils, hyacinths, narcissus, iris and tulips, early and late varieties. *Ranunculus* and anemones are also useful for cut flowers. For edging the borders use English daisy, violas, pansies, dianthus or pinks. Other flowers to give a succession of bloom are Shasta daisy, geum Mrs. Bradshaw, campanula, helenium, heuchera, sunflower hollyhock, forget-me-not, lupine, phlox, primula, verbenas, candytuft, marigold, petunias, delphinium, godetia, ageratum, antirrhinum, stock, lobelia, zinnia, aster, gaillardia, gerbera and foxgloves. Many of the above flowers are perennials, that is they last from year to year and require subdividing of the roots every three years or so. Most of these may be secured and planted this month and the annuals a few months later. However, the ground must be prepared by thorough cultivation and manuring and the flower beds laid out.

General Work

The dead wood must be cut out of the rosebush, whether climbing or dwarf types, and all flower beds clean weeded and dug, applying manure liberally at this time. Hedges should be trimmed, such as cypress, box and privet, cut well back to keep them in good shape. Cut off all dead flowering shoots from hypericum, escallonia, etc.

Propagation

Cuttings of box, privet, euonymus and hydrangea may be inserted in sandy soil to root.

Winter Flowering Sweet Peas

These should now be coming into

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flower and will require feeding with liquid manure. Another sowing may be made at once in well prepared soil if a succession of bloom is required. There are now quite a number of very fine waved varieties to choose from in a wide range of color.

Wall Climbers

Many ask, "What is the best climber that clings?" There are several. Ficus repens, once established, is a fairly rapid grower; Ficus minima gives delicate tracery on wall or rocks; Big-nolia tweediana for the warm side of the house has fine yellow flowers and Ampelopsis veitchii (Boston ivy) will solve the question for many who have bare walls to cover.

Southern California

By Ernest Branton

DECEMBER is of all months the best one for planting roses. While one may get them balled or potted or canned, dormant bare root plants are preferable. Secured in this condition one has a field grown free rooted plant that is ready at once to assert itself in an extensive feeding zone with a large and vigorous root system which promises much in large fine blooms. Potted, canned, or even balled plants are of lesser value.

December is the last month in which Holland or autumn bulbs should be planted and is a little too early for the planting of spring bulbs. Aside from native Californians, other bulbs should be left out of the month's planting list. But all hardy trees, shrubs, plants and vines may now be set out, though this month is no better than January for such work. It is merely a matter of when you have the most time, taking time by the forelock, or not putting off for tomorrow what you may do today. If you have occasion to turn soil up at this season, let it lie and weather in the rough for a time. At no season is such treatment more needed. Then, when rains beat it down, spade up again and pulverize. Such soil stirring is profitable, but do not forget to turn down some fertilizer at the first spading. Never work with but one end in view when you may have two.

Sweet peas bring a glorious spring crop when planted in December; if planted later the blossoms appear with the first hot weather and that is fatal to size of blossom, length of stem, also clarity of color in the dark red shades. This is the month for sowing seeds of early spring flowering annuals as well as of hardy biennials and perennials. Native flower seeds, alyssum, calendula, candytuft, coreopsis, forget-me-not, foxglove, grassflowers, larkspur, mignonette, pansy, salpiglossis, snapdragon, stocks and verbenas are a general list for present planting.

If you wish the occupied space between now and April take up bulbs or dahlias, roots of cannas, elephant's ears, ginger lilies and other tropical plants and store in a cool, protected, shaded spot where they may remain dormant until the appointed time. Get the soil ready for the big summer flowering gladioli for they thrive as well from January planting as from any. If stable manure is worked into the soil it should be thoroughly rotted for fresh manure is not good for any bulbs or plants if it comes in contact with them. If pansies are planted the soil should be most thoroughly pulverized; they will not thrive in rough soil.

December is a season of some don'ts. Do not prune any plants except it be mere thinning of fruit trees. Shears cut away spring flowers in both deciduous and evergreen plants. If heavily pruned now, and warm weather comes, new growth or premature blossoming may result and frosts following will destroy. Neither shall you fertilize lawns yet, for plant food will be washed away or below the root zone, leaving nothing but the organic matter to benefit the soil through slow decay, if indeed decay comes to matter lying on the surface. After excessive rains have ceased (granting they will come) plant food will largely remain in the soil, and not till then does spring growth begin, so why fertilize earlier? Then, too, is the best time to make new lawns or renovate old ones.



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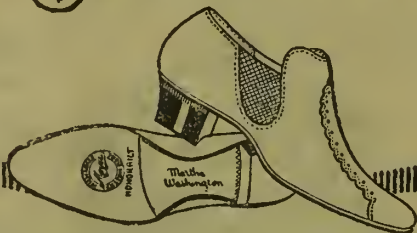
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Household Department

THE PHONE BELL

She ran to bake his pancakes,
And the phone bell rang.
She rushed to start the coffee,
And the phone bell rang.
Breakfast—he went without it;
"Good-bye," they had to shout it;
She would have wept about it,
But the phone bell rang.

She tried to dress the children,
And the phone bell rang.
She went to wash the dishes,
And the phone bell rang.
The parlor needed dusting.
The chafing dish was rusting,
And the silverware disgusting;
But the phone bell rang.

The grocer stopped for orders,
And the phone bell rang.
A neighbor came for gossip,
And the phone bell rang.
She thought by being hasty
She could make some biscuits tasty;
Her hands with dough were pasty
And the phone bell rang.

All day the housework waited,
While the phone bell rang.
No time for rest and labor
When the phone bell rang.
At last he came to fold her
In his arms, "Poor girl," he told her,
And the phone bell rang.
—Newark News.

THE RENUNCIATION OF CLAIRE

By Margaret A. Condon

WHEN Peter Norton's health became impaired and his physician indicated outdoor life as the remedy, Peter invested the bulk of his financial resources in the purchase of a ten acre ranch, where he and his pretty young wife, Claire, settled down to make their home. As both were intensely interested in agricultural pursuits, their apprenticeship in farming methods was along pleasant lines.

"I love it, Peter," Claire said, slipping her hand into Peter's, as they stood one evening on the tiny veranda of their very small house, viewing their little domain. "I love every bit of it. It is our very own, and best of all, Peter, you are growing strong and well. If—" and this was an "if" of tremendous import to Claire—"we only had a better house."

Peter acquiesced cheerfully, in fact, he usually did acquiesce in all that his winsome Claire propounded, for they were lovers true.

The venture was a success from the beginning, and with the aid of his two Mexican helpers Peter had accomplished wonders during this first season. Well content was he to be freed from the thralldom of city life, and happy in his improved health.

Beautiful in its setting was the little ranch, lying on a slope between the foothills and the sea, with a wonderful outlook over the valley. Several acres were well stocked with fruit trees, and a tall fringe of eucalyptus extended across the entire rear of the property, as well as across a one acre lot adjoining their land on the north, thus protecting the ranch from the vagaries of the sea breeze when it swept too strenuously up the valley. In front of these tall sentinels stood several magnificent live oaks, and from a little ravine rose three gnarled old sycamores. Altogether they formed a wonderful little grove. In among the openings beneath the trees Claire had planted violets, narcissus and many vines and shrubs that seek a partial shade. Here was a veritable birds' paradise, with saucy mockers much in evidence. At times even a few shy quail ventured down from the hills, to flit about in the friendly shelter of the grove and marvel at its loveliness. When the sun went low, the sky crimsoned, and the red gold filtered through the great trees, it made of the little ranch a picture with a marvelous background.

To the grove Claire beguiled Peter in his leisure moments, to rest beneath the trees and breathe their pungent healing odors. Here, too, came "Johnny-jump-up," Claire's snow white kitten, who usually preceded them, his tail standing straight up in a manner peculiar to himself, and waving as he ran. His name was derived from another of his peculiarities, which was to jump without warning into the lap of anyone who was seated and gave evidence of friendly feelings for his kind. Taking him all in all, "Johnny-jump-up" was a most lovable cat.

Summer was crossing the threshold—not creeping, but striding in as its wont in California. The silvery

sheen of oats and barley undulated in the breeze. Never was alfalfa of so emerald a tint, never fruit trees gave promise of so abundant a harvest, or so it seemed to Peter and Claire, and Peter's cheery whistle through the long sunny hours said that all was well.

One day there came to the acre lot adjoining the ranch two men, who paced and measured the land and discussed some matter at length. Soon afterward lumber, brick and other building paraphernalia began arriving. Workmen came, and the foundation and framework of a roomy modern bungalow arose as if by magic.

Peter came in to luncheon one day to find Claire greatly excited.

"I have found out all about the new house, Peter," she said. "The agent of the owners drove out today and I talked with him. They are building it for a Mrs. Walford and her invalid daughter, who are coming here to live. They are in comfortable circumstances, and he said we would find them very pleasant neighbors."

Peter returned: "It'll be jolly for you to have pleasant people near when you are alone in the house so much, and make things less lonely for you."

Claire's interest in the prospect was intense. Quickly the house was finished complete, but the owners had not yet appeared. The furnishings began to arrive, and everything was made ready for occupancy. The interior was beautifully finished, dainty curtains hung at the windows, pastel colors predominated in the pretty rugs that matched the delicately tinted and figured wallpapers, and everything indicated refined and artistic temperament on the part of those directing the work.

Poor Claire! She watched the development day by day. Several times she had been through the house, knew every room and its fittings as intimately as if it were her own, and could not help comparing it with the inadequate three room house that she and Peter occupied. Jealousy or envy had no part in Claire's character, but she was saddened by the contrast.

The brown summer was well advanced and so far nothing had been seen of the expected occupants of the new house, when one morning a motor car drew up at the gate and Claire recognized the agent who had first spoken to her about the house. He came up to her door, greeted Claire courteously, and said:

"I have sad news, Mrs. Norton, of your prospective neighbors. Miss Walford, the invalid for whom this little home was prepared, died about ten days ago."

Claire looked up with a startled exclamation as he continued:

"Since she is alone now, Mrs. Walford has given up the idea of coming to the country and will offer the place for sale."

"Dead! For sale!" Claire echoed. "How sad! They never had an opportunity to see their beautiful little house, and now it will go to strangers," and Claire's blue eyes were misty with sympathy for the erstwhile expected neighbors, whom now she was never to know.

"Yes, it is very sad," the man of business returned perfunctorily. "Mrs. Walford feels her daughter's death intensely, and prefers not to visit the place. It is in my hands for sale. Might I intrude upon your goodness, Mrs. Norton, by leaving a card with my business address? Of course I shall placard the house, and some prospective purchaser might happen along and wish to inquire of you about it. I might say it will be sold at a very reasonable price—only five thousand dollars, with all furnishings included."

"I shall be pleased to do anything I can," Claire returned mechanically, for her thoughts were elsewhere. A wild hope had sprung up in her heart. "If only—if only—but what was the use? They had not the money to spare. At any rate she would suggest it to Peter," and she waited impatiently for him to come after the agent took his leave.

"What's up, Claire?" Peter queried, as he noticed her flushed cheeks and excited manner when he came in to luncheon. "I see you had a visit from your friend the agent."

"Oh, Peter!" Claire cried. "Miss Walford is dead. Her mother will not come here to live now, and the place is for sale."

Peter whistled softly. "Hard luck," he said. "Poor ladies! They never had a chance to enjoy their little home."

"I'm so sorry for the mother, who does not even want to look at the place now, she feels her daughter's death so deeply," Claire continued.

"The place is to be sold, you say, Claire? I wish we had the money to buy it."

(Continued next week.)

HINTS FROM HOUSEKEEPERS

Escalloped Oysters

As the holiday season draws near we naturally turn to recipes for something different from the usual menu. Here is a recipe that I have never seen in print and which many think delicious:

One quart oysters, butter 2 ounces, milk 1 pint, 2 eggs, salt and pepper, crackers 1 pound.

In a baking dish place a layer of cracker crumbs, a layer of oysters, a layer of cracker crumbs, etc., placing bits of butter in between layers, with pepper and salt to taste, placing crackers on top. Beat eggs, mix with milk, pour over all in baking dish. Bake about 30 minutes in moderate oven.—Mrs. L. M. Huhbell, Woodland.

Hard Soap

In the Cultivator of November 6 a Bakersfield subscriber asked what caused her soap to turn rancid. A Thermal housekeeper who has had much practical experience writes just how she secures satisfactory results:

Add one can of lye to 3½ pints of water in enamel container. Stir lye until dissolved, as lye will make the water hot, and let it cool while you dissolve 5½ pounds of beef fat or pork fat that has been clarified. Do not let the grease get too hot. Break up the fat in small pieces; it will melt quickly. Remove grease from stove and with a wooden slab stir grease as you gradually pour the lye water into it. If one should get the mixture too hot, just keep stirring until it cools and it will soon thicken like honey in summer time. Stop stirring when you see it is going to set. Cover with cloth until firm enough to crease. Cut in oblong pieces.

I have a ready sale for any surplus soap. I note some recipes call for too much fat for amount of water used, as I experienced by following one recipe. I afterwards broke the soap into pieces and added more water and boiled until the right thickness.—Mrs. A. Waknitz, Thermal.

TO RENEW GILDED PICTURE FRAMES

Picture frames become soiled and shabby as do door and window frames. If they are gilded frames they are more delicate than the trim of rooms and become soiled even more easily.

Washing frames sometimes freshens them up, but the best way to do it is to go to the paint or drug store and buy a little package of bronzing liquid.

For some reason these liquids do not come mixed ready for use as does paint. The solution or liquid is in one compartment of the can and the bronze powder in another. It's a very simple matter to compound them when ready to do some gilding.

It takes but a few moments and costs but a few cents to re-gild a frame and you've no idea how it brightens up a room to have the gilt picture frames treated as suggested.

CANNY FINANCE

A man from the north of Scotland was on holiday in Glasgow. On Sunday evening he was walking along Argyll Street when he came upon a contingent of the Salvation Army, and a collection bag was thrust in front of his nose. He dropped a penny into it.

Turning up Queen Street, he encountered another contingent of the Salvation Army, and again a smiling "lass" held a collection bag in front of him.

"Na, na!" he said. "I gied a penny tae a quad o' your folk roon' the corner just the noo."

"Really?" said the lass. "That was very good of you. But then you can't do a good thing too often. And besides, you know, the Lord will repay you a hundred fold."

"Aweel," said the cautious Scot. "jist wait till the first transaction's feenished before we start the second."—London Tit-Bits.

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NE taste of a good ripe avocado does it! It has that haunting, delicious, come-again taste that promptly forms the avocado habit.

The most enthusiastic avocado lovers say the fruit can't be improved by addi-

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Pound can of Calumet contains full 16 oz. Some baking powders come in 12 oz. instead of 16 oz. cans. Be sure you get a pound when you want it.

Calumet Gold Cake Recipe

Yolks of 8 eggs, 1¼ cups of granulated sugar, ¾ cup of water, ½ cup of butter, 2½ cups pastry flour, 3 level teaspoons Calumet Baking Powder, 1 tablespoon of vanilla. Then mix in the regular way.

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tion of any other flavor—unless it is a dash of salt. But for those who like a little variety we are giving some hints published by the California Avocado Association. Secretary R. Agnes McNally of the association informs us that she is now gathering together a book of recipes which will soon be available for distribution.

Avocado In Shell

Cut fruit in half and remove seed. Serve a half to each person with any of the following dressings, as personal taste directs: Lemon or lime juice, salt, sugar, tomato catsup, mayonnaise, French dressing.

Avocado on Toast

Remove flesh with a spoon and mash with a fork. Spread thickly on small squares of hot toast. Add a little salt and pepper. This is one of the nicest ways of serving avocado.

Avocado With Caviar

Prepare as the above recipes direct. Spread a small quantity of caviar on top of each piece. This is a very delicious appetizer.

Avocado Cocktail

Cut fruit into dice. Place in small cocktail glasses, cover with a good cocktail sauce. Tomato catsup with lemon juice and salt and pepper is excellent. Serve very cold or packed in ice.

Celery and Nut Salad

Fill seed cavity of a half fruit with chopped celery and nuts mixed with a small quantity of mayonnaise.

Apple and Celery

Take equal parts of chopped celery and apple. Heap in a lettuce leaf, cover thickly with avocado meat well beaten with a little mayonnaise. Lemon juice may be used if preferred.

Combination Salad

Make a good combination salad of green vegetables—peas, beans, tomatoes, cucumbers, celery, hard boiled egg, lettuce. Mix with one-half as much avocado meat. Season with French dressing.

Avocado on the Half Shell

This is only practicable with the thick skinned variety. Divide fruit in half, carefully remove meat, add yolk of a hard boiled egg and one tablespoon French dressing for each fruit. Press through sieve and pile back in shell of avocado. Garnish with boiled whites, finely chopped with parsley.

Cuban Salad

In the cavity of a small fruit place three stuffed olives, add lime or lemon juice. A teaspoon of sugar dissolved in the lime or lemon juice is very nice.

If You Care for Onions

Cut flesh of avocado in cubes, mix with chopped onions, lime or lemon juice and salt. A finely chopped boiled egg sprinkled on top makes it very pretty.

Aspic Jelly Made With Avocado

One-half box gelatine, one-half cup cold water, one cup boiling water, two cups mashed avocado, juice half a lemon, salt, cayenne. Soak gelatine in cold water one-half hour. Dissolve in boiling water. Strain and add avocado meat which has been flavored with salt, cayenne and lemon juice. Place on ice to harden. Serve with mayonnaise.

With Banana and Apple

Take one chopped apple, one sliced banana and three medium sized avocados. Mix in bowl with either French dressing or mayonnaise. Serve on lettuce leaf.

Sandwiches

A good hostess appreciates the value of an original and delicious sandwich. Mash flesh of three large or six small avocados, season with lemon juice, salt and pepper. Spread between very thin slices of rye bread. A lettuce leaf may be used in the sandwich if desired. This makes about 20 sandwiches.

With Chili Pepper

Chop fruit with chili pepper. Season carefully and spread between buttered bread, with or without lettuce leaf. The above recipe can be used with nuts or olives in place of the pepper or onions.

Christmas Time

The Auto-Wheel Coaster



Try out the Auto-Wheel Coaster Christmas morning. See what a fine wagon it is. Spin the wheels. You'll say it has "Roller-Bearings"—and you'll be right, for the

Auto-Wheel Coaster

has genuine Roller-Bearings. Test its strength. Load it with as much cord-wood as it will hold. Then notice how easy it is to pull. You'll hardly know the wagon is loaded. Then hunt up your pal and have a race. Give him a head start. He'll need it, for the Auto-Wheel Coaster is the fastest boys' wagon in the world. It's a real speed hound, and just naturally eats up distance. Right now is the time to make arrangements to get an Auto-Wheel Coaster for Christmas. Send today for our catalog. It shows all styles and sizes. Pick out the kind you want and tell your Dad about it.

Send us names of three coaster dealers, in your neighborhood, telling which sell wagons with the name "Auto-Wheel" on the sides. With the catalog we will send you a FREE six months' subscription to "The Auto-Wheel Spokesman", our magazine for children.

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3354. Girl's Dress—Cut in 4 sizes: 8, 10 and 12 years. A 12-year size requires 4½ yards of 38-inch material. Price 10 cents.
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Avocado With Sea Foods

A most appetizing form of serving the avocado is to mix equal parts of cold salmon or lobster with the diced fruit and serve with mayonnaise.

In Soups

The avocado is used extensively in the tropics in all kinds of meat soups. Cut in small cubes and add to the soup just before serving.

For Invalids

The avocado is recommended by physicians as a most desirable form of food for invalids. It is highly nutritious, containing as high as 25 per cent of fat in the best varieties, according to government statistics, and yet is very easily digested, so that the most delicate person can eat it freely.

WOMEN FIND FARM LIGHTING PLANT ESSENTIAL

By N. C. Wilson

THE advent of power implements, simplifying the routine work of the modern farmer, has brought to light the fact that in many cases his wife is drudging under old fashioned conditions in the farm home.

Without an attractive home where up to date conveniences have been installed, farm women naturally are discontented. The contrast between their ceaseless exertion with antiquated appliances, and the easier lot of sisters in the city often becomes the incentive for the whole family to finally desert agriculture.

The working hours of the average farm wife, according to a recent survey of the department of agriculture, are 11.3 all the year, while during the hottest months of the summer she works on an average 13.12 hours.

While the burdens of field labor have been lightened by the inventions of reaper, binder, tractor, tillage and harvesting machinery, the farm wife slaves with comparatively few more improvements than the farm woman of 50 years ago had.

This state of affairs, however, need no longer exist. By installing a farm lighting plant which furnishes an application of power to household tasks, economically, farm life can be made a hundred fold more attractive.

According to the department of agriculture survey, farm women on 79 per cent of the farms in America average one-half hour a day in filling, cleaning and trimming kerosene lamps.

The washing is done at home in 96 per cent of the farms. Only 43 per cent have washing machines to make the task easier, and those who have machines usually own those operated by hand.

Sewing machines on the average farm are run by foot power, and yet the average farm wife must do sewing for five people.

The activity of farm women in the majority of cases is not confined to household duties alone. There is milking to be done, poultry to be taken care of. Usually it is the farmer's wife who operates the cream separator.

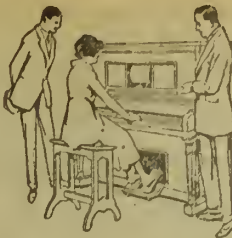
On 61 per cent of the farms in the United States the pump or spring is about 40 feet from the house. The farm women carry all the water into the house.

No home needs a vacuum cleaner more than a farm house does. Yet only 24 per cent of the farm women of America have the services of a vacuum cleaner.

While 48 per cent of the farms have power for operating stationary machinery, in only 22 per cent of the farm homes has this been connected with household equipment. This condition does not seem to be in keeping with modern ideas of labor saving.

The expense of the installation of a farm lighting plant is not as much as many other power investments. And it is not only a boon to the housewife but a source of illumination for all the farm buildings, a power which can drive the stationary machinery, pump water, provide power for the shop and make itself useful in a hundred different ways.

The application of power to farm household work is the solution for keeping the women on the farm.



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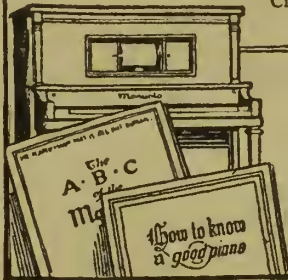
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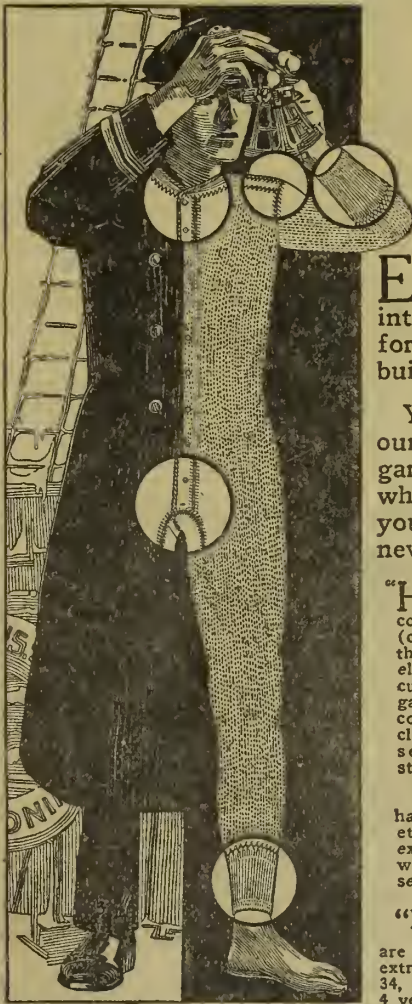
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The offering includes 30 spring gilts, 10 fall gilts, 10 tried sows and 10 young boars sired by Long Jumbo, Glenn Chief, Yates Big Orphan, Young Hadley and bred to Yates Big Jones, Y. C. 4, Reformer, and Black Bob. Send for catalog.

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ASK YOUR DEALER

The Gray Dawn of a Better Day

By A. L. Spellmeyer



ISTRIBUTION of food has become more important and more profitable than its production. Complicated marketing makes high prices, high cost of living, high railroad freight rates, the greatest factor in today's cost of manufactured goods, and high taxes. A man with assets six times his liabilities goes into bankruptcy. All of us are handicapped for money to stand the overhead no matter how solvent our affairs may be. The boasted declines don't exist retail.

Silk is cheaper than for years but what are advertised as bargains would be considered high a few years ago. Shoes are around the \$12 mark with hides unmarketable. Wool clothes are up around the moon with wool almost a presentation. The retailers are kidding us, the government prosecutors, supposed to rectify profiteering, playing to the gallery, the politicians ignoring the fact that the general, first, and only issue now before the people of this nation is the high living cost.

Where are the farmers going to meet the \$200 mortgages on their Middle Western land due next year or thereafter? Where are the mechanics, who have been laid off, going to rustle the coin to pay those installments on thousands of \$4,000 homes they bought with a first payment on terms? Where are the factories employing those men going to sell their goods with loans unobtainable, and most farmers and cattlemen losing money every day? Retrenchment high sounding word, but the Japs still peddle the vegetables; the packers still make those enormous dividends; and county and city tax officials josh us by telling what a low rate we have when they have greatly raised amounts assessed.

It's time for us all to wake up, and the thing to do to establish general confidence and prosperity is to protect our production, making farming and livestock profitable, and the nation

will then prosper and meet its issues. Glve the farmer and the cowman, the sheep raiser, the hog man, the wheat grower and the cotton raiser a living profit, and make the business worth while, and our food, soil and clothes needs will take care of themselves. We are piling disaster upon disaster with our present policy of ruin. A little more of it and sad times will be upon this nation. Stop economic experiments and get down to fair prices for an honest day's work, and food in proportion.

Bread lines are bad. Idle men in these times, aggregated into millions, will coordinate and are as dangerous as T. N. T. The specter of starvation is still worse. Russia back to harharism, millions dying, all Europe in turmoil, production languishes, and this rich country temporizes with irritations. If we raise our products, make our food and meat supply safe, raise our leather and wool for our shoes and clothing, we will get along all right.

Gold merely represents commodities and in itself has no value. Gold is the fetish hung up to our worship, and though we have a hundred times its value unless we realize or are able to sell for gold we are declassed. As Baldus tells us the present condition doesn't come from the war. It started with watered stock many years ago, and the war was one result. Now the tail is wagging the dog. Those lanes and instruments designed to assist production, to make it easier to handle and save expense have become bloated dictators of finance and in their own importance far overshadow the very industries of production on which they exist.

Make farming and livestock profitable, and the rest will work out. Food will come down when supply reaches the limit set by demand, if it's not manipulated. The auto people can sell cars, the broker will find many customers and the retired farmers will make the cities prosper.

California Wins at Portland

By Jack Klein



ALIFORNIA was well represented in a number of breeds at the great Pacific International Livestock Exposition held in Portland recently. This was by far the largest livestock show ever held in the West with 11 acres under cover and over 4,000 animals crowded into the stalls and pens. The quality of the stock was wonderful and the classes usually numbered 10 to 40. Tenth place in a class of 30 is not so bad and when one gets a blue it is very gratifying. California was there strong with Shorthorns. The Pacheco Cattle Company of Hollister sent a number of its excellent young animals, a couple of firsts and a lot of others.

Little Sweetheart repeated her winnings of all other shows and was grand champion. Glide was generally in the money in the other classes also as was Wm. Bond and R. H. Parsons of Hilts, and the University of California won a blue.

In the milking Shorthorns T. T. Harrison, Chas. L. Weaver and J. D. Rowe furnished a good share of the show. Weaver's aged bull, North Star, was senior champion but Harrison's junior champion beat him for the grand championship. Rowe won all the honors in the female championships.

The Holsteins were a part of the 250 which gathered there and they more than held their own.

California Guernseys were represented by a single entry, Veda's May King of Edgemoor, which Winsor Ranch recently bought from Dupee. This wonderful young fellow was the wholeshow and repeated his record of the Los Angeles show. In the Ayrshires E. B. McFarland won eight firsts and junior champion bull.

The University of California made a wonderful record on its fat stock and won championships on its Shorthorn and Angus steers and the grand champ-

ion of the show. It also won grand champion wether of the show.

From the lengthy prize list we have culled the winnings made by the Californians and they are given below.

Shorthorns

Bull 2 and under 3, 13 in class: 4, Glide on Imp. Scottish Lord; 5, Pacheco Cattle Co. on Dalmeny Count; 8, Wm. Bond on Cumberland Closter.

Bull senior yearling, 10 in class: 6, Glide on Cheerful Count.

Bull junior yearling, 23 in class: 5, U. of C. on Memory's Champion.

Bull senior calf, 31 in class: 1, Pacheco on Pacheco Lad; 8, Glide on King's Count; 15, Parsons on Mountcrest Sultan.

Bull junior calf, 23 in class: 8, Parsons on Mountcrest Senator; 9, Bond on Cumberland Goods; 11, Pacheco on Pearl Pacheco.

Cow 2 and under 3, 16 in class: 3, Glide on Village Lassie; 7, Glide on King's Countess; 8, Bond on Amondale Maid 2nd.

Heifer senior yearling, 13 in class: 2, Pacheco on White Pacheco; 3, Glide on Village Rose; 9, Pacheco on Pacheco Bloom; 10, Bond on Cumberland Goldie; 11, Glide on King's Countess 2nd.

Heifer junior yearling, 25 in class: 2, Pacheco on Pacheco Doris; 7, Bond on Cumberland Maid; 10, Glide on Village Girl; 12, Bond on Cumberland Sunrise.

Heifer senior calf, 29 in class: 3, Pacheco on Sultan's Dale; 7, Glide on Hillcrest Flower 3rd.

Heifer junior calf, 35 in class: 1, U. of C. on Mary Ann Rush; 4, Pacheco on Pacheco Doris 2nd; 6, Pacheco on Pacheco Lass 213th; 9, Glide on Lady Sweetheart.

Cow and calf, 15 in class: 1, Glide on Little Sweetheart; 6, Parsons on Glosters Roseleaf. Senior and grand champion female Glide.

Aged herd, 9 entries: 2, Glide. Young herd, 10 entries: 3, Pacheco Cattle Co.; 7, Glide.

Calf herd, 20 entries: 1, Pacheco Cattle Co.

Produce of dam, 19 entries: 5, Pacheco Cattle Co.; 8, Glide; 10, Bond.

Get of sire, 20 entries: 5, Pacheco; 11, Parsons.

Milking Shorthorns

Aged bull, 5 in class: 1, Chas. L. Weaver, Tulare, on North Star.

Bull 1 and under 2, 7 entries: 1, Thos. Harrison, Santa Rosa, on Count Tuckford; 6, Harrison on Santa Rosa Type.

Bull under 1 year, 10 entries: 1, Harri-

son on Santa Rosa Pioneer; 2, J. D. Rowe & Sons on Dick; 4, Harrison on Santa Rosa Victor; 5, Weaver on Golden Star; 6, Rowe on Innisfall Trickster; 7, Weaver on Champion Royal; 9, Rowe on Innisfall Lad; 10, Harrison on Frantle's Pioneer.

Aged cow, 13 in class: 2, Harrison on Silver Lassie; 5, Harrison on Imp. Bessborough Curlew 2nd; 6, Harrison on King's Memory 19th; 8, Harrison on Naomi 2nd; 9, Harrison on Imp. Bessborough Lady 28; 10, Weaver on Idicwood 12th.

Cow 3 and under 5, 5 entries: 2, Weaver on Lucy Queen; 3, Harrison on Ramona Lee.

Cow 2 and under 3, 4 entries: 2, Weaver on Bonnie May; 3, Harrison on Welfare's Naomi.

Heifer senior yearling: 1, Harrison on Helarita Lee; 2, J. D. Rowe on Valley Bell 6th; 3, Harrison on Santa Rosa Queen.

Heifer junior yearling: 1, Rowe on Gipsy Girl.

Heifer senior calf: 1, Harrison on Lovey Perfection; 2, Harrison on Dolores Lee; 4, Harrison on Patsy Purdy; 5,

Baldwin on Anoakla Burke Cornucopia Walker.

Heifer senior yearling, 19 in class: 3, Baldwin on Anvacka Burke Cornucopia; 9, Geo. Jr. on Lady Dechuter Juliana.

Heifer junior yearling, 20 in class: 4, Baldwin on Burbank Aaggle Lincoln; 10, Baldwin on Anoakla Moorland Cream-elle.

Heifer junior calf, 39 in class: 9, Baldwin on Anoakla Princess Helena.

Aged herd, 11 entries: 5, Baldwin.

Produce of dam, 12 entries: 8, Baldwin.

Get of sire, 24 entries: 8, Baldwin.

Guernseys

One entry from California won first senior yearling, junior and grand champion. Veda's May King of Edgemoor shown by Winsor Ranch.

Ayrshires

E. B. McFarland of San Mateo won 8 firsts and junior champion bull.

FAT HOGS

Berkshires
Single barrows: 1, U. of C. Pen of 3 barrows: 1, U. of C.

CALVES BY CALIFORNIA SIRE SELL HIGH IN EAST

The following telegram has just been received from Edward Cebrian, manager of the Caledonia Farms, West Sacramento:

"In the Harding Shorthorn sale at Waukesha, Wisconsin, the average price was \$1,616. The calves sired by our bull, Imp. Caledonia, that were from nine to 12 months old, averaged \$2,470. All others, excluding the Caledonia calves, averaged \$1,515. A nine months old son of Caledonia sold for \$6,250."

Weaver on Sequel's Milkmaid; 6, Weaver on Brighton Lady.

Heifer junior calf: 1, Rowe on Buttercup's Beauty; 2, Weaver on Belle Star; 5, Harrison on Diana Lee 2nd; 6, Harrison on Betty Lee 2nd.

Senior champion bull, Weaver.

Junior grand champion bull, Harrison.

Junior, senior and grand champion cow, J. D. Rowe & Son.

Aged herd: 1, Rowe & Sons.

Young herd: 1, Rowe & Sons.

Calf herd: 1, Rowe & Sons; 3, Harrison.

Get of sire: 1, Rowe & Sons; 2, Harrison.

Produce of dam: 1, Harrison; 2, Rowe & Sons; 3, Weaver; 4, Harrison.

Holsteins

Aged bull, 12 in class: 2, Anita M. Baldwin on Mercl Lad Korndyke Burke; 4, Geo. Jr. Republic on Dichter Spofford Korndyke Lad 5.

Bull 2 and under 3, 10 in class: 5, Stalder on Rosamaines Pontiac Ormsby.

Bull senior yearling: 1, Higdon on Prince Bonnie Walker.

Bull senior calf, 19 in class: 9, Baldwin on Prince Walker Cornucopia 19th.

Bull junior calf, 18 in class: 8, Higdon on King Korndyke Leda Pontiac; 9, Stalder on Nueva Colantha Ormsby.

Aged cow, 26 in class: 5, Burr Farm on Amella Bona De Kol; 9, Burr Farm on Bess Creole Belle 3rd.

Heifer 2 and under 3, 22 in class: 8,

Durocs

Single barrows: 1, U. of C. Pen of 3 barrows: 1 and 2, U. of C.

Hampshires

Single barrows: 1 and 2, U. of C.

FAT STEERS

Shorthorn

1, senior yearling, U. of C. on California Majestic. Champion Shorthorn steer U. of C.

Aberdeen-Angus

1, senior yearling, U. of C. on U. C. Jock. Champion, U. of C. Grand champion of show, U. of C.

Fat Sheep

FAT SHEEP

Down Breeds

Wether 1 and under 2: 1 and 2, U. of C. Pen of 3 yearling wethers: 1, U. of C. Champion wether, U. of C. Grand Champion wether of show, U. of C.

FEEDING THE DAIRY COW

Too many cows are underfed. A cow weighing 1,000 pounds needs each day, for the maintenance of her body, an amount of food equivalent to that supplied in eight pounds of alfalfa hay and 20 pounds of good corn silage. She must have this food regardless of whether she produces any milk. Food used for milk production must be in addition to that required to keep the cow's body. A 1,000 pound cow producing 20 pounds of four per cent milk a day, if properly fed, devotes about half of her feed to maintenance and half to milk production. Obviously, when a dairyman has gone to the expense of supplying that half of the food required for maintaining the cow's body, it is poor economy to withhold any of the other half, all of which goes to produce milk. A cow then requires feed in accordance to the amount of milk she is able to produce. The heavy producer needs the most feed.

Farm grown roughages (silage, hay, etc.) furnish the cheapest food nutrients. However, a good dairy cow cannot eat enough roughage to supply her needs for milk production. She must have some grain. Therefore, to feed with the most economy the following rules must be observed, says the Missouri college of agriculture.

Feed all the roughage a cow will eat. She will eat more if fed three times a day instead of twice.

Feed grain in proportion to the pounds of milk produced.

To a Jersey or Guernsey cow feed one pound of grain for each three to 3½ pounds of milk produced.

To a Holstein, Ayrshire or Shorthorn feed one pound of grain for each four to 4½ pounds of milk produced.

Reports from Arizona indicate that the cotton farmers of the Phoenix district will be heavy buyers for California dairy cows during the coming winter, and estimates as to the number required run into the thousands. During the last few years hundreds of dairymen turned from dairying to cotton and now, with financial ruin staring them in the face, they look to the dairy cow to pull them out.



Own Champion Duroc-Jerseys

Heading the great Diamond Bar herd of Duroc-Jerseys is the famous sire, Ace of Pathfinders, Grand Champion boar at the Los Angeles Livestock Show, 1919, and head of the World's Champion Aged Herd at the National Swine Show, 1919.

His pigs have made phenomenal records, winning an extensive list of "Firsts" at all the large California stock shows.

In short, the Diamond Bar herd with its 1,200 head of pure bred Duroc-Jerseys, has set a new standard for the hog breeding industry of the West.

For greater pork production and breeding profit, build up your herd with this blood.

Place your order this week for registered bred sows and gilts and registered herd boars, sired by the Ace of Pathfinders and our other renowned sires.

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Tulare, Cal.

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While primarily a medicine for treating sick cows, the recognized tonic and strengthening effect of Kow-Kare on the organs of production, have caused it to be widely used as a preventive of disorders such as are common to cows.

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Finnell Herefords in Snappy Sale

Notwithstanding a bad day and muddy roads, the 63 head of Hereford cattle offered by the Finnell Stock Farm, Galt, November 18, were readily absorbed by one of the smallest crowds that has attended a recent sale, and the values that were established were entirely satisfactory to all concerned. The average price paid was \$240. The cattle were presented in splendid condition. But few had ever been handled at the halter, consequently they were put through the ring loose.

The fact that this was the fourth Hereford sale to be held this fall is strong evidence of the strength of the demand for Hereford cattle in California. As with former sales, the event served to start new men in the business, a remarkable feature of the sale being that nearly the entire offering was divided between two new buyers. I. L. Borden, extensive land owner and a member of the state board of agriculture, was the heaviest buyer and secured 32 lots. G. F. Silliman of Watsonville laid the foundation for a new herd by the purchase of 20 females. Other buyers at the sale were: Geo. P. Robinson, Sacramento; Welty Bros., Vernalis, and Lafe Ward, Galt.

The sale was managed by C. L. Hughes of the California Breeders Sales and Pedigree Company, Sacramento. Ben A. Rhoades of Los Angeles was the auctioneer and he was assisted by John A. Davis of Manteca.

A complete list of sales follows:

1. Being, April, 1914; Geo. P. Robinson, Sacramento, \$250.
2. Bevey, June, 1914, I. L. Borden, San Francisco, \$245.
3. Bemask, May, 1914, I. L. Borden, \$250.
4. Beware and c. c., June, 1914; I. L. Borden, \$350.
5. Bespeak and c. c., June, 1914; I. L. Borden, \$255.
6. Gretchen 2nd, April, 1919; G. F. Silliman, Watsonville, \$180.
7. Ethel 2nd, March, 1919; I. L. Borden, \$230.
8. Mabel M. 2nd, February, 1919; Geo. P. Robinson, \$160.
9. Victoria 2nd, March, 1915; Lafe Ward, Galt, \$275.
10. Phyllis 2nd, March, 1919; I. L. Borden, \$170.
11. Helen 2nd, April, 1919; G. F. Silliman, \$145.
12. Wilhelmine 2nd, April, 1919; Geo. P. Robinson, \$190.
13. Octavia, June, 1918; G. F. Silliman, \$195.
14. Rosa, April, 1918; Geo. P. Robinson, \$160.
15. Virginia, April, 1918; G. F. Silliman, \$245.
16. Belle, May, 1918; G. F. Silliman, \$250.
17. Emer, June, 1918; I. L. Borden, \$240.
18. Tabitha, June, 1918; G. F. Silliman, \$195.
19. Atalanta, May, 1918; I. L. Borden, \$235.
20. Fussie, October, 1918; G. F. Silliman, \$195.
21. Clarissa, October, 1918; G. F. Silliman, \$205.
22. Lorle, March, 1918; I. L. Borden, \$280.
23. Ellen, March, 1918; G. F. Silliman, \$175.
24. Althea, March, 1918; I. L. Borden, \$240.
25. Lenora, September, 1918; I. L. Borden, \$225.
26. Lela, October, 1917; I. L. Borden, \$235.
27. Bad, February, 1914; I. L. Borden, \$160.
28. Bernice, January, 1917; G. F. Silliman, \$255.
29. Offie and c. c., November, 1917; G. F. Silliman, \$285.
30. Phyllis and c. c., May, 1913; I. L. Borden, \$315.
31. Flora, June, 1913; I. L. Borden, \$215.
32. Oma, October, 1917; Geo. P. Robinson, \$150.
33. May Bell and b. c., December, 1917; I. L. Borden, \$350.
34. Lisetta and c. c., April, 1914; I. L. Borden, \$355.
35. Della, June, 1913; I. L. Borden, \$230.
36. Magda, May, 1915; I. L. Borden, \$260.
37. Ettie and b. c., May, 1914; Welty Bros., Vernalis, \$300.
38. Winnie, August, 1917; I. L. Borden, \$240.
39. Osie and c. c., November, 1917; I. L. Borden, \$355.
40. Noma and b. c., October, 1917; I. L. Borden, \$330.
41. Victoria and b. c., July, 1913; G. F. Silliman, \$295.
42. Ula, December, 1917; I. L. Borden, \$225.
43. Luna and c. c., December, 1916; G. F. Silliman, \$365.
44. Mignonette, February, 1917; G. F. Silliman, \$235.
45. Lady B. and c. c., January, 1917; I. L. Borden, \$315.
46. Magnolia, January, 1914; G. F. Silliman, \$210.
47. Bertha, January, 1917; G. F. Silliman, \$250.
48. Heliotrope, February, 1917; I. L. Borden, \$230.
49. Pansy, April, 1917; I. L. Borden, \$275.
50. Hazel, January, 1917; I. L. Borden, \$250.
51. Geranium, March, 1917; G. F. Silliman, \$295.
52. Primrose and b. c., January, 1917; Geo. P. Robinson, \$350.
53. Matilda, August, 1917; I. L. Borden, \$210.
54. Tillie, August, 1917; G. F. Silliman, \$165.
55. Arcadia Belle Flower, March, 1902; Geo. P. Robinson, \$110.
56. Franchon, March, 1916; I. L. Borden, \$210.
57. Irene and c. c., May, 1916; I. L. Borden, \$325.
58. Louise, March, 1916; G. F. Silliman, \$235.
59. Catherine, March, 1916; I. L. Borden, \$210.
60. Extra, I. L. Borden, \$205.
61. Extra, G. F. Silliman, \$215.
62. Extra, (bull), Geo. P. Robinson, \$150.

U. C. MAKES A GREAT RECORD AT PORTLAND

The department of animal husbandry at the University of California made an enviable record at the tenth annual Pacific International Livestock Exposition at Portland, exhibiting the grand champion and reserve grand champion steer and grand champion wether at this show, in addition winning nine first prizes and four second prizes.

U. C. Jock 4th was grand champion steer of the show. As a calf, in 1919, he won first at the California International Livestock Show, was champion Angus steer at the same show and later was first prize calf and reserve champion Angus at the International at Chicago.

California Majestic was reserve grand champion at the Pacific International Livestock Exposition, and in 1919 he was first prize Shorthorn calf at the California International, and champion Shorthorn steer and reserve champion steer at the same show. At the International in Chicago in 1919 he was first prize Shorthorn calf and reserve champion Shorthorn.

Mary Ann Rush was first prize junior heifer Shorthorn calf at the 1920 Pacific International at Portland. This heifer was dropped April 1, 1920. She was sired by Champion Junior 3d and out of Moon Beam 8th, and was presented to the university by Senator Benj. F. Rush of Suisun.

Memory's Champion won fifth prize as the young yearling Shorthorn bull at the Pacific International this year, and in 1919 was first prize junior calf and reserve junior champion at the 1919 Los Angeles Livestock Show, and first prize junior bull calf at the California International in 1919.

In the hog classes the university won first and second on Duroc-Jersey singles and first and second on pen of Duroc-Jerseys. The first prize pen was a uniform lot of under-year hawks that weighed 500 pounds. The second prize pen were under six months barrows. In the Berkshire classes the first prize barrow was a deep bodied thick under year barrow, and was one of the first prize pen of Berkshires in the show. Two Hampshire barrows were shown and stood first and second respectively in the Hampshire classes.

Owing to the impossibility of taking to the exposition more than one carload of livestock of all classes, only three sheep were shown. Three yearling wethers, two of them Southdowns and the third a grade Shropshire, walked away with the grand championship in the fat sheep classes and won first, second, third and pen. The showing was made more creditable by the fact that two of these three wethers were fitted as lambs and won their respective classes at the 1919 International Livestock Exposition at Chicago.

Much credit is due to the untiring energy and ability of Alex McDonald, George Philip and Ralph Dunham, the men who fed and fitted these animals.

ILLS OF THE YOUNG CALF

Success in dairy farming depends to a great extent upon the careful rearing of the calves. Carelessness in breeding and calf raising is bound to result disastrously to a herd or at least keep it at a standstill, as far as improvement is concerned. Without raising calves from which to replace discarded animals it is almost impossible to raise the average production of the herd. Purchasing cows for this purpose is a very unsatisfactory method. Cows placed on the market are almost certain to be of very ordinary grade since a good cow whose value as a milk producer is known is not

offered for sale at market price. Therefore the dairy farmer should take every precaution in handling the young calves which are to be placed in the herd.

Even though a young calf establishes respiration and gets its first meal without difficulty, it is still subject to many ills, chief of which are digestive disorders of some kind. These troubles are likely to be more numerous among calves that are weaned while young and fed from pails. Indigestion, or scours, as it is generally known, is the most common trouble in raising calves by hand. The chief causes of this trouble are: Over-feeding, feeding cold milk, old or sour milk, and the use of dirty pails, troughs or stalls. By keeping the conditions right all the time these troubles might be avoided. Each calf should be watched closely for signs of indigestion. Foul smelling dung is often the first sign of the trouble. When such indications are present the ration should be cut down to one-half the usual amount. When a severe case of scours is noticed the feed should be reduced and the calf given two or three ounces of castor oil in one pint of milk. For a few days following this treatment it is well to add one teaspoon per pint of milk fed of a mixture of one-half ounce of formaldehyde in 15½ ounces of water.

White scours, or calf cholera, is quite common with calves. This is a violent and deadly form of diarrhoea. It may appear immediately after birth and is likely to show itself the first or second day. The calf is very sick from the beginning; the eyes are sunken, the belly retracted, the breathing short and rapid, the temperature very low and the calf soon becomes unconscious. The discharge from the bowels is rather profuse, of a white color and very offensive odor. As a rule the calf dies within 24 to 36 hours. This is a contagious disease which gains access to the calf's body through the navel soon after birth. An animal once affected rarely recovers. There seems to be no treatment, therefore we must rely upon prevention. The trouble may be avoided by making sure that the calf is dropped in a clean stall and that it is not allowed to come in contact with dirt or manure until the cord is dry. If the herd is on pasture it is best to allow the cow to remain there until the calf is born. Infection is not likely to occur in the pasture. If the calf is dropped in the barn the surroundings should be free from filth.

Occasionally young calves suffer from constipation, notwithstanding the purgative effects of the colostrum or first milk. This may be due to unthrifty cows or the feeding of dry innutritious feeds during the later periods of pregnancy. Whatever the cause, if the calf is costive, showing signs as in colic and failing in appetite, no time should be lost in giving relief. First remove the cause if it can be located. To stimulate the bowels administer one to two ounces of castor oil.

"LUMPY JAW"

Actinomycosis, commonly known as "lumpy jaw" or "wooden tongue," occurs quite frequently in cattle and is sometimes found in horses, swine and man. The condition is produced by a fungus which causes an inflammatory reaction in the tissues, characteristic of the disease. At first there is produced a dense tissue with a characteristic breaking down of the infected area and formation of pus. Such changes at times produce very serious injury to important structures.

Observations have demonstrated that the infection is carried to the parts invaded by beads of grain which contain the fungus, penetrating the tissues. The disease is most frequently found affecting the head and neck but other parts may become affected through abrasions. In the early stages the tumor like formation is rather firm and not very sensitive to pressure. The growth gradually continues to enlarge until all the surrounding parts are involved. After a time the dense tissue becomes soft in places and abscesses are noted. When the pus from these abscesses is examined it will be found to contain small granules resembling sulphur. When examined microscopically they are found to be clumps of the fungi causing the disease. The abscesses

may form to a considerable size and after the disease has existed for some time formations of exuberant tissue (known as proud flesh) may be found in the pus cavities and around their openings. When the fungus invades the jaw the bone may become affected and deformed considerably. The affected portion of the bone when examined after death presents the appearance of a honeycomb.

Actinomycosis of the tongue renders it difficult for the animal to manipulate this organ owing to the chronic inflammatory processes. The common term for this condition is "wooden tongue." The jaw and the tongue are the most common seats of the disease; it is not unusual, however, to find the throat, salivary glands and other parts involved.

The treatment of lumpy jaw at times requires surgical procedure together with medicinal treatment, while at other times, in the early stages of the disease, medicinal treatment alone will effect a cure. Potassium iodide is very effective in treatment of this disease. Advice from a veterinarian

regarding medicinal or surgical treatment of this affection is advisable.

The meat of an animal other than the parts affected may be eaten without danger to the consumer, provided the carcass is in good condition otherwise. In the way of prevention, it is well to feed bearded cereals finely ground. Feeding hay that contains foxtail may produce the disease.—S. O. T.

FORTIFY AGAINST ANIMAL DISEASES

Just recently we experienced a concrete example of what preparedness means when confronted with war. The division of animal industry advises that the same is true with persons who engage in the raising of livestock. The health of the animals must be fortified against the ravages of diseases.

Here are some of the essential factors which assure a reasonable amount of safety:

Barnyards and pens should be well drained and kept clean.

All covered buildings in which animals are housed require good ventilation and drainage. Concrete floors improve considerably the sanitary conditions.

Animals, like people, require a certain amount of exercise, and provision should be made to supply it.

Extreme precaution should be taken to prevent animals from coming in contact with diseased or exposed animals.

It is an enjoyable, if not a profitable, pastime to the owner to exhibit his best animals at fairs and shows, but when they are returned to the farm, as well as others that may have been purchased, they should be segregated for a period that will insure their freedom from contagious diseases to which they may have been exposed.

Periodic disinfection of yards, pens, and buildings should be resorted to whether or not contagious diseases have existed on the premises.

Such procedure, together with careful selections of rations, will as a rule produce gratifying results.—S. O. T.

80 Registered Holsteins 80

At Public Auction Thursday, December 16

State Fair Grounds, Sacramento, Cal.

The sale list contains some of the most highly bred and highest record cows and heifers offered in California this year, and carrying the services of some of the foremost bulls in the state.

In the offering the entire herds of R. F. Fisher, Carlotta, and J. McKindley, Acampo, will be dispersed, the balance of the sale being made up of consignments from five leading breeders.

THE LIST OF FEMALES INCLUDES:

A 1,038 POUND YEARLY RECORD GRANDDAUGHTER OF KING OF THE PONTIACS, out of a daughter of King Hengerveld that was junior champion at 1911 California State Fair. This record was recently completed, and she will freshen again before sale as a 7 year old.

FOUR DAUGHTERS OF THE ABOVE COW, including a junior 4 year old sired by a son of De Kol of Valley Mead, on yearly test with 650.87 lbs. butter to her credit in 298 days. TWO DAUGHTERS AND ONE SON of the above mentioned 4 year old.

A GRANDDAUGHTER OF KING OF THE PONTIACS, with 764.86 lbs. butter from 19,040.3 lbs. milk in 305 days. She is due to freshen again in January.

THREE DAUGHTERS AND ONE SON of the above cow, one of a 25.56 lb. junior 3 year old with 424.53 lbs. butter from 10,283.3 lbs. milk in 148 days.

A 32 POUND GRANDDAUGHTER OF COLANTHA JOHANNA LAD, heavy with calf to the three times Grand Champion bull Segis Alcartra Prilly.

A 27.87 POUND 3 YEAR OLD daughter of the great 28 lb. cow Locust Terrace Gold Drop, and sired by Prince Gelsche Walker Korndyke, the \$4,000.00 son of Prince Gelsche Walker. She is due in January to King Segis Alcartra Prilly.

A 23 POUND 3 YEAR OLD daughter of Sir Rag Apple Korndyke, out of a 26 lb. 4 year old granddaughter of De Kol 2nd's Butter Boy 3d, heavy with calf to King Segis Alcartra Prilly.

A 2 YEAR OLD DAUGHTER OF KING SEGIS ALCARTRA ABBEKERK, due with first calf in January to a 35 lb. yearly record son of King Segis Alcartra Prilly.

TWO 21 POUND DAUGHTERS AND ONE 21 POUND GRANDDAUGHTER of Tidy Abbecker Prince, all of them bred to Sir Aaggie De Kol Acme, son of the world's official yearly butter record cow Aaggie Acme of Riverside 2nd.

A DAUGHTER OF THE TWICE 34 POUND COW GERBEN ABBEKERK MAID, with 25.77 lbs. butter in 7 days as a 3 year old. She will be fresh before sale.

A 23 POUND DAUGHTER OF CHANGELING BUTTER BOY, out of a 26 lb. daughter of a 26 lb. cow. Bred to a son of Sir Aaggie De Kol Acme.

A DAUGHTER OF SEGIS PONTIAC DE KOL BURKE, out of a 26 lb. 3 year old daughter of King Mead of Riverside that made 644 lbs. butter in one year as a 2 year old. Bred to a son of Sir Aaggie De Kol Acme.

A GRANDDAUGHTER OF ARLA DE KOL, out of a 768.29 lb. yearly record daughter of a 1,025 lb. yearly record cow, whose dam in turn made 1,008 lbs. butter in one year. Bred to a son of Sir Aaggie De Kol Acme.

There will be only a few bulls in this sale, but they are such as should attract dairymen who want bulls of substantial breeding, and besides the two youngsters in the big group in the Fisher herd, already referred to, include

A SON OF PRINCE GELSCHER WALKER, out of a 20 lb. 4 year old granddaughter of Aralla De Kol, second dam a 21 lb. 4 year old granddaughter of King of the Pontiacs, third dam the 1,008 lb. yearly record cow Miss Blaney.

DON'T MISS THE MANY BARGAINS THAT ARE SURE TO RESULT IN THIS SALE! THINK OF THE SPLENDIDLY BRED YEARLINGS AND HEIFER CALVES!

THINK OF THE WONDERFULLY BRED CALVES THE FEMALES IN THIS SALE WILL DROP TO THE SERVICES THEY NOW CARRY!

CONTRIBUTORS TO SALE:

TOYON FARM ASSOCIATION, San Francisco
BRIDGFORD HOLSTEIN CO., Patterson
ANDERSON & FOGARTY, Sacramento
E. D. BARRY, JR., Daggett

R. F. FISHER, Carlotta
FRED W. KIESEL, Sacramento
J. MCKINDLEY, Acampo

Every animal positively guaranteed to be a breeder; no tuberculin test certificates furnished.

PLEASE NOTE—On account of the large number to be sold, the sale will open promptly at 10:00 A. M.

CATALOG FREE ON REQUEST TO MANAGEMENT

Management

California Breeders Sales and Pedigree Company

C. L. HUGHES, Sales Manager, Sacramento, Calif.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
December 16-17, Consignment Sale, Sacramento.

Poland Chinas
February 17, Bassett, Ross & Crawshaw, Hanford.

Berkshires
February, Italian Vineyard Co., Guast.

Durocs
February, Falfadale Farm, Perris.

Percheron Horses
February 17, M. Bassett, Hanford.

Sundrie Sunbeam Girl, the great Holstein cow of the Santa Anita Rancho, who started this year's test by dropping triplet calves, has finished her work with 29,533.6 pounds of milk and 1,124.3 pounds of butter. This fine record was made at nine years of age. Marken Louise has increased her seven day record to 607.3 pounds of milk and 35.55 pounds of butter, and the three year old, Anoakia Gelsche Pontiac Walker, has increased her seven days to 27.75 pounds and her 30 days to 113 pounds.

Hollow Hill Farm, which is reducing the size of its herd of Guernseys, has sold to W. E. Bush of Covina the cow, Grace of Neshannock, who has a four year old record of 485 pounds butterfat, also Della Lang-

don of Hollow Hill Farm, who was first senior yearling at the state fair and at Phoenix, and Violet Langdon of Hollow Hill Farm, another excellent daughter of King of Hollow Hill. Mr. Bush, who is establishing a small private dairy, also bought a bull calf by Effie's King out of Imp. Brittleware Mistletoe, the great cow whose showing and production records have kept in the limelight for years. Her record of 751 pounds butterfat as a four year old was one of the highest in the United States when made. This young bull is richly bred and his two nearest dams average 15,017 pounds milk and 743 pounds butterfat as four year olds. Hollow Hill Farm also sold to Alfred Peterson of El Centro a young bull out of Capelle's Jessie, who has a three year old record of 556 pounds of fat.

Alex Willson of the Italian Vineyard has chosen February 1 as the date for his sale of bred Berkshire sows and gilts. His offering will be a choice one, being the tops of the Italian Vineyard herd combined with the tops of the herd purchased recently from the Sandercock Land Company.

Dr. E. Avery Newton, owner of the Arenal Ranch at Lankershim, has sold to the university farm a spring Hampshire boar sired by Admiral Tipton and out of Parole Lady. This pig was

a winner in the shows and was chosen by Prof. Hughes after he had judged him a number of times.

Frank Foster of Clements has purchased from Caledonia Farms, West Sacramento, two young Shorthorn bulls sired by Spicy Champion 2d and out of well bred dams.

Little Sweetheart, the remarkable Shorthorn cow owned by Thornton S. Glide, Davis, was again grand champion at the Portland show. In ten of the leading shows of America during the last two years Little Sweetheart has met defeat but once.

Reference was made recently to the new world's milk record being established by the Holstein cow, Carnation Segis Pietertje Prospect, owned by the Carnation Stock Farms of Seattle, Washington. In 318 days she produced 33,499 pounds of milk and it is expected that she will average over 100 pounds per day for the entire year. She is a daughter of King Segis 10th and her dam is Beauty Pietertje Clothilde, a daughter of Beauty Pietertje Prince. Her dam is therefore a half sister to Prince Gelsche Walker.

The Holstein cow, Pabst Virginia Johanna, owned by Fred Pabst of Wisconsin, has just established a new world's record in the ten months di-

vision by producing 744 pounds of butter from 15,340.5 pounds of milk in 298 days.

Toyon Farms, San Francisco; A. W. Morris and Sons, Woodland, and the Bridgford Holstein Company, Patterson, expect to contribute consignments to the Brentwood sale to be held at Philadelphia the last three days in March.

Fifteen farmers in the vicinity of Wendell, Idaho, plan to import 30 head of Guernsey cows direct from the Island of Guernsey.

Andy Simpson, in charge of the Caledonia Shorthorns, is preparing ten heifers, most of them carrying the service of Imp. Caledonia, for the American Shorthorn Congress sale to be held at Chicago in the spring.

J. B. Newsome of the California state department of agriculture has announced that brand inspectors have been instructed to refuse to inspect cattle for marks and brands when such cattle are loaded in cars prior to inspection. All inspectors have been told to notify railroad agents that inspections must be made in the loading corrals and that no certificates will be issued unless inspection has thus been complied with.

Guy H. Miller of Modesto recently sold to Hugh F. Richards of Denair the Jersey bull calf Almonoll Jap Owl, sired by his senior herd sire, Jap's Perfection Owl, and out of the great cow, Pearl of Venadera, Register of Merit test 702 pounds of butterfat in a year. Mr. Richards is founding an excellent herd of pure bred Jerseys at Denair, having secured a number of high class females from the Jersey Queen Farm at San Jose. Another sale by Mr. Miller was to H. H. Wallis of Crows Landing, the yearling Jersey heifer, Sapphire of Venadera, a full sister to the bull calf sold to Mr. Richards. This is a promising helper of the best breeding in producing line. She should make a great cow. Mr. Wallis has been dairying with a herd of high grade Holsteins for some years but has recently decided to try pure bred Jerseys.

Kern County is coming to the front with pure blood Holsteins-Friesian cattle. J. L. Sebastian of Wasco has on test Zamva Aurelia Segis Pontiac, a very promising three year old. The first seven days after freshening she gave 25.23 pounds butter from 542 pounds milk. The second week under official test she gave 24½ pounds butter from 623½ pounds milk. Some interesting figures are looked for at the close of 30 days.

Owing to weather conditions the sale of Poland China hogs scheduled by Marshall & Son, Sebastopol, for November 15 had to be called off. Just at present the firm is undecided when they will be able to sell. Meanwhile they are breeding most of their females to their good boar, Headlight, reserve grand champion at Sacramento, and may possibly announce their sale for some time after the first of the year.

Santa Anita Rancho has sold the young bull, Prince Walker Cornucopia 22d, who is out of the 22 pound three year old, Anoakia Lyons Butter Boy, to Ernest Lordo of Camarillo, Mexico.

WHAT ARE VITAMINES?

Vitamines have been classified into three different types, depending upon the functions which they have in promoting well being and growth. The first type is known as water soluble vitamins, and these are necessary in order to obtain growth from food. Lack of these causes beri-beri, which manifests itself by disease of the nervous system and by other symptoms. These vitamins are found in seeds, in green plants, in certain bulbs and fleshy roots and fruits, and in milk and eggs, as well as in certain organs in the animal body. The seeds referred to include beans, nuts and the various cereal grains. When cereals are very highly milled in order to obtain a very fine white flour, a large part of the vitamins may be removed. Vitamins are also lost when rice is polished in order to remove the outer layers which contain most of the vitamins. It is



International 8-16 The Adaptable Farm Power

ON sun-baked slopes, in rain-soaked valleys, on rolling uplands and level plains—everywhere you will find **International 8-16 Kerosene Tractors** working efficiently, converting cheap kerosene into valuable farm power.

Plowing, disking, seeding, cultivating orchards, hauling heavy loads on road and farm, pulling stumps, dragging roads, drawing mowers, hay loaders, grain harvesting machines; threshing grain, baling hay, cutting ensilage, sawing wood—on all heavy farm tasks where dependable power is required either at the drawbar or belt pulley **International 8-16 Kerosene Tractors** are rendering satisfactory, year-'round service.

The **International 8-16**, because of its light weight, snug compactness, ease of control, generous reserve power above its rating for emergency pulls, three speeds forward, economical operation and general fitness for diversified service, is highly popular with farmers in every branch of agriculture.

Fifteen years of tractor building experience and over three-quarters of a century of general farm machine success, backed by a broad-as-agriculture reputation for fair dealing, good quality and dependable after-sale service—these factors are your assurance of satisfaction when you buy an **International 8-16 Kerosene Tractor**.

INTERNATIONAL HARVESTER COMPANY

OF AMERICA

Billings, Mont. Cheyenne, Wyo. Denver, Colo. Helena, Mont.
Los Angeles, Cal. Portland, Ore. Salt Lake City, Utah
San Francisco, Cal. Spokane, Wash.

for this reason that a diet consisting mainly of polished rice may cause beri-beri, while unpolished rice does not cause this disease.

The second type is known as fat soluble vitamins, and these are found in butter, eggs, milk, and in certain animal organs such as the heart, kidneys and liver, and to some extent in other fats as well as in green vegetables. They also exist in smaller quantities in certain seeds. When fat soluble vitamins are absent from the diet animals and man are subject to a disease of the eyes, which appears to be related to xerophthalmia and which, if prolonged, may produce blindness.

The third type is known as anti-scorbutic vitamins, that is, those which prevent scurvy, which manifests itself by disease of the bones as well as in other ways. These vitamins are found in oranges, grapefruit, lemons and other citrus fruits, and in green vegetables such as tomatoes, spinach and lettuce, and in eggs and raw milk. The drying of vegetables frequently destroys the activity of the anti-scorbutic vitamins. The best source of vitamins is in the leafy parts of vegetables, and this is one of the reasons why spinach, lettuce and cabbage are valuable foods.

THREE YEARS PROFITS LOST BY NOT TESTING COWS EARLIER

The following letter is typical of the experience of the average pure bred breeder of dairy cattle who starts testing in his herd. C. M. Walbridge, a Jersey breeder of Missouri, started testing last December. Already he has found the work extremely valuable. If you have a number of pure bred cows freshening this fall, start them on test as they freshen. Read what Mr. Walbridge says.

"Nine years ago I purchased one grade Jersey cow and have gradually worked up to 12 registered females and have Majesty's Oxford Financier as my herd sire. In seeking purchasers for my bull calves I was repeatedly asked for the records of their dams and the dams of their sires. My private records were not as exact as they should have been and I found each year more buyers were asking for official Register of Merit records. Last December we started official Registry of Merit test and have developed facts that have been most valuable to us. One large promising young cow that we thought was a bread winner proved a joke. She milked fairly well for 90 days with a good butterfat test, but gradually dwindled down to almost nothing. Another cow that was, and had been, a consistent milker for us and one that we raised showed a marked lack of butterfat for a Jersey. They are both out of our herd now. We started a junior two year old on test April 25. She has been in the 50 pound class now for five months and stood fifth in rank of junior two year olds for June. We would never have known what we had in this heifer unless we had had her on Register of Merit test. You can readily see what her record will do to the value of her handsome bull calf sired by a bull that took the blue ribbons in four different states.

"We find ourselves studying balanced feeding and individual attention to our cows on Register of Merit test to a much greater degree than we ever have before, at the same time only according them good farm care. I feel that I have lost three years by not taking up this work three years sooner, which I could have done just as well as this year and could have eliminated several head that never would make good. I now feel that every cow on my place must be a Register of Merit cow and make that showing for me with an opportunity to beat her own record."

Life of cotton duck, used for protecting farm machinery, sacked grain, market fruits, field crops, etc., may be prolonged and the cloth made more serviceable by simple methods of water proofing and mildew proofing worked out by the United States department of agriculture.

Several California breeders of beef cattle made long winnings at the recent Portland show.

RATIONS FOR DRAFT HORSES, BROOD MARES AND COLTS

Experimental and demonstration work by the Missouri college of agriculture shows:

That draft horses averaging in weight approximately 1,600 pounds and which did 4.8 hours a day average farm work required an average daily ration of 14.91 pounds of grain and 17.12 pounds of timothy hay.

That brood mares may be used efficiently for farm work, but the yearly feed required by them is 26 per cent greater than the cost of feed required by gelding or "dry" mares doing the same work.

That brood mares working and nursing foals required 47 per cent more grain and 32 per cent more hay daily during the suckling period than dry mares.

That foals during the suckling period consumed an average daily ration of 3.58 pounds of grain and 1.35 pounds of hay, in addition to their mothers' milk.

That draft colts consumed an average daily ration of 6.68 pounds grain, 7.42 pounds hay daily, from weaning time until they were turned in pasture in the spring, a period of 219 days, during which time they gained 330 pounds and weighed at the close of the period 836 pounds.

That it required 4.40 pounds of grain and 4.83 pounds of hay to produce one pound gain on draft colts from weaning time until turned on pasture the next spring.

That 15 pounds of corn silage, eight pounds oat straw, fed with eight pounds grain, is a satisfactory ration for horses doing light work during the winter months.

TALKING OF PRICES!

Here is one reported to the United States department of agriculture:

A man bought a mink-lined overcoat for \$500 in 1915. Two years later he sold the mink lining for \$1,000 and

replaced it with nutria for \$150. He wore it two years and sold the nutria lining for \$250, putting in a muskrat lining that cost \$55. In 1919 he sold this lining for \$300, and still has the shell and \$845 clear profit.

TREAT YOUR OWN LIVE STOCK PROMPT FIRST AID IS VERY IMPORTANT

You never know when an animal is going to be sick, or some accident occur, requiring quick action to prevent loss or permanent injury. If you know what to do and have the necessary medicines on hand you can save a valuable animal that otherwise may be lost.



There is a Dr. David Roberts Prescription for Every Animal Ailment

Study the *Practical Home Veterinarian*. Get our medicines of your local druggist. You can successfully treat Calf Cholera, Constipation, Abortion, Udder Troubles, Colic and dozens of other ailments common to livestock. If no dealer near you, write us direct. Veterinary advice free. Ask for free copy of the "Cattle Specialist" with full information pertaining to abortion in cows. Tells how to treat your own herd at small expense.

Dr. DAVID ROBERTS VETERINARY CO., Inc. 212 Grand Ave., Waukesha, Wis.

Reduced Price on Roofings



We have made a big cut in the price of our well known "Woodrow" and "Woody" Roofing—

Our splendid quality "Woodrow" sanded roofing \$2.00 per roll in one ply, \$2.50 in two ply.

Our guaranteed "Woody" smooth face roofing 25 cents more—These are both the best values in roofing we know of.

WOODHEAD LUMBER COMPANY

5800 So. Main St.

Phone 3592 South 50

LOS ANGELES

Is Your Herd Linked Up With the Big Yearly Producers?

The yearly test for milk and butterfat production as worked out in our herd has gradually resulted in making this a herd of descendants of a few clearly defined families of outstanding producers and reproducers.



King Korndyke Pontiac Acme

To produce this bull we made one of the strongest matings possible to make at that time in our herd, by breeding Miss Aaggie Acme Burke to King Korndyke Pontiac 20th, the latter owned by Mr. W. J. Higdon at the time the mating was made.

The sire, KING KORNDYKE PONTIAC 20TH, who sold for \$6,500 as a calf and later sold to Burr Farm, Los Angeles, for \$12,000 is almost too well known to require description here.

The dam, MISS AAGGIE ACME BURKE, with the world's record in class of 24,338.8 lbs. milk in one year as a first calf junior 2 year old, and with 1,034.44 lbs. butter in one year, which is third highest in class, ranks as the greatest heifer of milking age that we have yet produced.

We owned and developed all of the seven nearest dams of this bull, the seven, including the 2 year old record of the dam, averaging 1,058.16 lbs. butter and 22,775.2 lbs. milk in one year.

We also owned six of the seven nearest sires of this bull, and developed most of their daughters that have freshened to date.

With this first hand knowledge of thirteen of his fourteen nearest ancestors, the fourteenth being King of the Pontiacs, we have the utmost confidence in his ability as a sire, and consider that the rare mating which produced him more than justified the \$41,000.00 price which he commanded at the St. Paul National Sale.

He is now at the head of the splendid herd owned by

ANITA M. BALDWIN

Santa Anita Rancho

Santa Anita, Cal.

In this series of announcements, which will appear every other week in the CULTIVATOR, we will feature each time a sire heading some breeding or dairy herd, that links that herd up closely with our greatest producing families.

To summarize at the beginning a few facts in relation to the tremendous dairy production which these families have demonstrated through the yearly test, we submit the following data:

**149 Yearly Records in This Herd Show
a Total Production of 2,605,217.1
Pounds Milk, and 113,129.28
Pounds Butter**

8 records average over 1,200 pounds butter in one year.

20 records average 1,149.33 pounds butter in one year.

38 records average 1,002.25 pounds butter in one year.

73 records average 901.04 pounds butter in one year.

123 records average 802.99 pounds butter in one year.

The entire 149 records average 759.25 pounds butter and 17,464.5 pounds milk in one year.

Included in the 149 records are 52 records made by 2 year old heifers with first calf, the 52 averaging 639.97 pounds butter in one year.

Naturally the matings in our herd at present show the greatest combinations of these great proven producing families, and every indication leads us to expect a continuation and even an increase of production in the blending of these families.

Is your herd linked up with such production as this through your herd sire?

We price our bulls reasonably, from the highest class sires to head registered breeding herds, down to well bred bulls to head grade dairy herds. Write us your needs, we may have just the bull to fit your herd.

A. W. Morris & Sons Corporation Woodland, California

NEVADA HEREFORD RANCH

We always carry a large herd of high-class Herefords and at the present time we are offering:

A splendid lot of young cows with Harris Standard 2nd calves at foot, and many of them rebred.

A nice selection of young cows and heifers bred to our herd bulls.

A choice collection of open heifers.

A lot of good rugged range bulls. These are the real money making kind, and they are priced to make money for the buyers. We will sell them in car lots or in lots to suit buyers.

We also have some choice young bulls of herd-header caliber that we will sell well worth the money.

We invite your inspection.

John H. Cazier & Sons Co.

Otis Cordell, Herdsman

Wells, Nevada

Our ranch is on the main line of both the S. P. and W. P. railroads and only a twenty minutes drive from Wells.

JERSEYS

The Cows Without a Fault

TWO HUNDRED years of careful breeding, with the milk-and always in view have made Jerseys the ideal dairy breed. Truly they are the cows without a fault.

Jerseys milk earlier and longer—have the shortest "dry" period—thrive anywhere—breed true to type—are willing workers. Write to the Jersey Information Bureau for the facts about *The Profit Breed* and stories of farmers who are making good with Jerseys.

The American Jersey Cattle Club
West 23d St., New York



King Korndyke Pontiac Mead

Average of his Dam and Sire's Dam (Both Former World Record Holders)

At Average Age of 4 yrs. 2 mo. 10 dys.
Semi-Official, 365 Days

Official Test, 7 Days

1062.64 lb. Butter
21173.75 lb. Milk
31.91 lb. Butter
615.60 lb. Milk

His Sire—King Korndyke Pontiac 20th

His Dam—De Kol of Valley Mead 2d

Four of his seven nearest Dams have held World's Records

LOS ANGELES COUNTY FARM

Hondo, Cal.

3 miles south of Downey on Downey-Long Beach Boulevard

Maxwell Farms' Holsteins



The fountain head of the Ormsbys with over 50 daughters of Sir Ormsby Skylark in the herd which has two sons of Sir Pietertje Ormsby Mercedes at its head. Write for our sales catalog of service bulls.

D. G. Maxwell, Owner

Garden Court, Hollywood, Cal.

Sir Ormsby Skylark
Sire of the World's Champion Cow

Sunny Side Farm



where efficiency is our watchword and the production of extra heavy milking Holsteins and big type Poland Chinas is our specialty. A few choice animals of either breed or sex for sale at all times at reasonable figures. Write for information.

R. F. Guerin

Visalia, Cal.

Fine General Farming, Dairy & Stock Ranch For Sale

We are in a position to offer for sale, one of the best irrigated ranches in Southern California, consisting of 4,000 acres; about 1,800 acres rich bottom land; over 1,200 inches gravity water, twelve flowing wells and three fine pumping plants.

Can be bought at a very attractive figure on easy terms at six per cent.

Inquire

Campbell-Joralmon Company

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SHEEP LICE

By E. R. de Ong

Small outbreaks of sheep lice in Solano and Yolo Counties have occurred during the last two years, 1919 and 1920. These are new insects to many of our stockmen, but something which should be guarded against. Lice have been reported from Solano County since 1912, but from the frequency of recent attacks it would seem that they are on the increase. Two distinct species have been recorded, one a biting louse, light amber in color, much resembling the common body louse of the chicken. This louse is usually found on the body, in the wool. The second species is more like the blue cattle louse, of a distinct bluish color. This is a sucking louse, feeding on the blood of the host. They are found mostly on the hairy part of the leg from the point of the shoulder blade down to the hoof.

There has been no opportunity as yet of dipping sheep for the biting lice on the body, nor do we know how severe an attack may be. The sucking lice have been found very abundant on one flock. Two young rams which were very heavily infested died, apparently from the attack. The flock has been dipped twice with Kresol, 1 to 70. The first treatment was almost a failure as the alkaline water broke the dip, but by softening the water with one pound of lye to 100 gallons of water a good solution was secured for the second treatment, which has proven quite successful. As yet the life history of the louse is not known well enough to state positively how many dippings are necessary to eradicate it, and how often. This is something which it is hoped the experiment station may work out in the near future.

HORSE COST LESS THAN COMMONLY SUPPOSED

In the exact cost accounting studies carried out by the bureau of farm management of the University of Illinois, covering a period of five years, work horses required annually but 25.3 bushels of corn, 37.8 bushels of oats, 1.7 tons hay and 170 days access to pasture, at 1.96 acres of pasture per horse. This is an allowance of 2,626.4 pounds of grain, 3,400 pounds of hay and 1.96 acres of pasture per year for each working horse. The horses observed were working regularly on Illinois farms under usual farm conditions.

With these figures as a guide it is not difficult to compute the cost per horse per year. Manure produced by horses and colts is valuable to the farmer and offsets feeding costs at present grain prices to the extent of approximately \$39 per year for a drafter and \$30 per year for a draft colt. This is placing its worth at \$3 per ton. At present, figuring corn at 90 cents, oats at 60 cents, hay at \$25 per ton and \$15 per acre for pasture rent, the total board bill for a working horse comes to \$117.35 per year. The farmer subtracts from this the value of fertilizer contributed, \$39, leaving but \$78.35 expense for a year's feeding.

These exact figures explode the high cost of feeding theory. The recent drop in hay and grain prices is also an economy argument for city users of draft and wagon horses. Nor has it disturbed the balance between cost of production and income on farms where horses and mules are used, for with the decline of feedings stuffs the cost of maintaining farm power likewise drops.

THE FIRST JERSEY CALF CLUB

The Stanislaus Jersey Calf Club has been organized by the Stanislaus Jersey Breeders Association ably assisted by Prof. O. P. Palestine, agricultural instructor in Modesto high school. The members of this calf club are 12 boys and three girls as follows: Marguerite Conant, Barbara Campbell, Jewel Campbell, Jordan Campbell, Elmo High, Dwight Hackett, Jesse Henry, Max Henry, Clifford Daniel, Vernon Hayworth, Ervin Hayworth, Clifford Lanterman, Herbert Lanterman, Cecil Lambert, S. Leigh Howard.

The committees of Jersey breeders in charge of the work secured the consent of the Modesto Bank, the California National Bank of Modesto and the Sacramento San Joaquin Bank of

Modesto to finance the club, the banks advancing the money for the purchase of the calves and taking the boys' and girls' individual notes in payment. Fifteen registered Jersey heifer calves from six to 11 months old were selected by the Jersey breeders committee for this club from the herds of the following Jersey breeders: J. J. Cornwell, Orland; J. H. Sawyer, Galt; A. A. Jenkins, Tulare; J. E. Wherrell, Riverside; Geo. W. Thomas & Sons, Riverside; W. J. Hackett, Ceres; D. F. Conant, Modesto; J. A. Goodall, Keyes; C. D. Hayworth, Modesto; Guy H. Miller, Modesto.

The calves from outside Stanislaus County were shipped in by express November 12; the others arrived by wagon and truck November 13. All were collected in a barn near the high school in Modesto and were distributed to the boys and girls before noon of Saturday, November 13. The calves were each numbered and the numbers placed in a hat. Each member of the club drew out a number and secured the calf corresponding to his number. A photograph of the boys and girls holding their calves was then taken and they all loaded their calves into wagons and trailers and started for home to embark as future Jersey breeders of California.

These calves are all to be exhibited at the Stanislaus County fair at Modesto next fall and prizes will be awarded to the boys and girls that have made the best showing in caring for them and keeping an account of the cost of feed consumed. I think that I am correct in stating that this is the first strictly pure bred Jersey calf club organized in California.—Guy H. Miller, Secretary Stanislaus Jersey Breeders Association.

MEXICO COMES TO CALIFORNIA

Many Californians have thought of Mexico as a land of romance and revolutions and overlooked the real economic possibilities down there. In consequence the Mexicans have gone to the East and Middle West for their livestock, as well as other things. Lately certain firms have been making a bid for business in Mexico and the Diamond Bar Ranch has just made a sale of two carloads of Duroc sows and gilts, together with some boars and a dozen Hereford bulls to Cipriano Jaimes of Calzada Nacional de Ixtacalco, Mexico, D. F. In the lot were 30 registered sows bred for March litters, 13 fall gilts and 30 spring gilts, a spring boar by Ace of Pathfinders, one by Great Pathfinder and a two year old boar by Orion Cherry King 5th. At the same time Raoul C. Campillo of La Casita, Sonora, Mexico, bought a spring boar by Great Pathfinder and out of Model Maude, who was a member of the world's champion aged herd in 1919. He also took one fall and two spring gilts.

CHEAPER MEAT ANIMALS

Meat animals have been selling by farmers for a whole year ending with September, 1920, at prices that were lower than they were in the preceding year by 14 per cent. The fall in prices, compared with the former years, began in September, 1919. These statements are based on prices ascertained by the United States bureau of crop estimates.

Prices of these animals were gradually increasing to the calendar year 1914, but they fell eight per cent in 1915, followed by a gain of 17 per cent in 1916, of 49 per cent in 1917, when the peak of gain was reached, of 17 per cent in 1918, and of less than one per cent in 1919. Now, for the last four months of 1919 and for 1920 to September, there has been a recession of price movement with a drop of 14 per cent.

Veterinary

Goat With Cough

I purchased two milk goats a year ago and one recently commenced coughing. I gave it nine or ten drops of liniment and after this she stopped eating. I later put her on green grass and she is not so severely bothered at this time. She seems to be bothered when fed dry alfalfa or other dry hay.—Subscriber, San Luis Obispo.

The trouble you mention with your

goat is rather hard to diagnose from the information you give. It might be possible that she has a chronic inflammation or a cold which dust from

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H. H. Gable
Esparto, Cal.

dry feed would irritate. The liniment you administered probably caused some digestive disorders. The liniment might serve as an anti-ferment but probably this was not what the animal needed. I would suggest that you administer about 1 pint of raw linseed oil which will act as a general purgative, after which you might feed some bran mash and green feed which would bring the animal up in condition, after which it might be able to throw off the cough. If she does not get rid of the cough with improvement in physical condition I would suggest that you consult a veterinarian who could look over the animal and no doubt could suggest a remedy.
—G. E. G.

Horse Coughs
Horse has a cold, won't eat anything and coughs all the time. What should I do to remedy the trouble? — Subscriber, Brawley.
The horse probably is troubled with a chronic catarrhal inflammation. I would suggest that you give him plenty of good fresh air although you should be careful that he does not stand in a draft. It might be necessary to put a blanket on him at night. You might give a mild laxative consisting of ¼ to ½ pound of Epsom salts in a pint of lukewarm water. If the cold continues you should give him about 1 teaspoon morning, noon and night of the following mixture: ½ pound saltpeter or nitrate of potash, ½ pound sulphur and ½ pound ground gentian. This can be given with the regular feed. He should also be fed good, soft food such as bran mash in addition to his hay.—G. E. G.

Mineral Matter for Pigs
What causes young pigs to wobble on their hind legs and sometimes drag them? What is the remedy? It does not seem to affect the appetite or to prevent growth. — Subscriber, Chula Vista.
The trouble you mention with your pigs is probably due to lack of proper nutrition. The pigs may be growing too fast for the strength of their bones, which makes it impossible for the bones of the legs to hold them up. The factor contributing to trouble of this kind is insufficient mineral matter in the feed, which, of course, does not give the bones an opportunity to grow and strengthen properly. I would suggest that you give them lime water to drink and as soon as they are able to eat mixed feed mix bone meal in with the other feed at the rate of 2 or 3 per cent by weight.—G. E. G.

Period in Cow and Sow
Will you kindly tell me how many days from calving before a cow comes in heat and at what periods following? Do they ever skip? Also how long does a sow go after farrowing before coming in heat, also at what periods following? What are the signs in a sow?—Subscriber, Turlock.
The answers to the questions above would depend somewhat on the care given the animals. If the cow is allowed to suckle her calf she seldom comes in heat sooner than six or eight weeks from calving although if the calf is taken away from her immediately she usually comes in heat about three weeks after parturition and every three weeks thereafter. Oftentimes the periods may be skipped although if all conditions are normal this is not usual. A sow ordinarily comes in heat from three to five days after her pigs are weaned and about every two or three weeks thereafter. The indications or signs of heat in these animals differ considerably with individuals. Ordinarily it consists in general restlessness and one who is acquainted with the animals can usually detect this restlessness without difficulty.

To The Holstein Breeders of California

Gentlemen:
We have bought Sir Ormsby Skylark Rauwerd and will accept a limited number of cows for service. To you who are well versed in Holstein pedigrees and records we need say no other word. But to those of you who possibly may be young in the business or who are not fully aware of what the Ormsby strain has done and is doing, we would suggest that you do not waste valuable years by raising calves from inferior bulls. Sir Ormsby Skylark Rauwerd is the best son of old Sir Ormsby Skylark who sired amongst other notable cows Dutchess Skylark Ormsby 1,506.36 lbs. butterfat in one year which is the world's record for any breed.

The dam of Sir Ormsby Skylark Rauwerd is Beauty Rauwerd Hengerveld 2nd a 34.5 lb. cow whose sire Prince Segis Korndyke had 59 A. R. O. daughters; and her dam was a 29 lb. cow.

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QUESTIONS AND ANSWERS
(Continued from Page 728.)

garding stocks, which were quite fully discussed in the issue of the Cultivator of March 23, 1916, by Dr. Fitzgerald of Stockton, he made comparison of Paradox and Royal hybrids. He said the Paradox hybrid root is sometimes seriously affected by oak root fungus and recommended that where planting was to be done in land formerly occupied by oak trees that the Royal, which was more resistant, should be planted.

VEGETATION IN RELATION TO ENVIRONMENT
(Continued from Page 721.)

ences in the vegetation. The application of nitrogen promotes the growth of grasses at the expense of legumes, while mineral fertilizers without nitrogen, particularly potash, enable the legumes, such as clovers, to make headway against the grasses. These conclusions are not exactly hasty, seeing that the experiments have been going on for considerably more than half a century. Grasses are perforce obliged to get their nitrogen from the soil, but legumes can take it from the air with the aid of bacteria. Consequently, land that grows good crops of legumes is apt to be well supplied with mineral plant food. On the other hand, the legumes, which might otherwise thrive, may be crowded out by other more vigorous plants. In taking stock of the vegetation this possibility of crowding out must always be considered, as well as the feeding powers of different plants, their habits of growth and susceptibilities to weather, pests and diseases. Then, aside from the kind of soil, the physical condition of soil and subsoil, the moisture, drainage and alkali content and lay of the land all have their effects. Regarding feeding powers, E. Truog found that buckwheat could make much better use of raw rock phosphate than certain other plants experimented with.

Among the weeds common in some California orchards are three which are high in nitrogen, namely, malva, mustard and nettles. These contain from three to four per cent of nitrogen, based upon the dry weight, and get their nitrogen entirely from the soil. Hence such plants are not apt to thrive on land decidedly low in nitrogen, in fact, in some instances good stands of malva have been grown only after applications of nitrogenous fertilizers. However, many weeds have great feeding powers and the application of nitrogen may benefit fruit trees and various crop plants in spite of the presence of high nitrogen weeds. Chickweed (Stellaria media) may have possibilities as an indicator plant of some kind as, in the citrus districts of Tulare County, it is commonly much more in evidence in orchards on dry bog soils and on other soils derived from basic igneous rocks. The same thing is true of a pretty pale blue phacelia (Phacelia ciliata). On the other hand, Shepherd's Purse, which is a weed that has followed man round the world, seems to grow under practically any and all conditions, which is also the case with Prckly Lettuce and many other weeds.

In eastern Riverside County the creosote bush may be seen growing rather sparsely on solid beds of gypsum, but it was noted that the other plants associated with the creosote bush in the vicinity largely avoided the gypsum beds. To one who has come under the spell of our southwestern deserts this creosote bush inspires much the same feeling as does the pine, beloved of the mountaineer.

Some striking illustrations of the effects of slight differences in environment are mentioned by E. J. Russell in his excellent book, "Soil Conditions and Plant Growth." For instance, in Romney Marsh there are pastures with rye grass, white clover, crested dog's tail and agrostis, easily capable of fattening sheep in summer without any other food. All round these pastures are others with the same type of vegetation, but the plants grow more slowly, produce more stem and less leaf, are less nutritious and are incapable of fattening sheep. Again, the grass on Lower Lias pastures in Somersetshire and Warwickshire causes acute diarrhoea or "scouring" in cattle, while grass on adjoining alluvial pastures does not. Finally, potatoes grown in the Dunbar district are remarkable for their quality and will stand boiling and subsequent warming up without turning black. The same varieties of potatoes grown in the same way in the Fens, blacken badly under the same treatment and consequently command a much lower market price.

Suffice it to say in closing that the study of plants in relation to their environment is of great scientific and practical interest and adds much to the pleasure of driving through the country.



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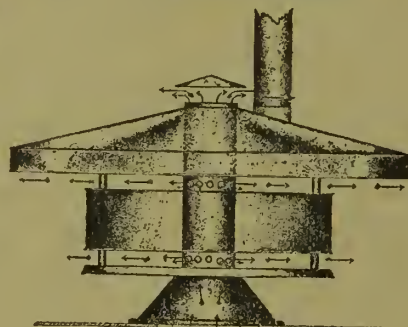
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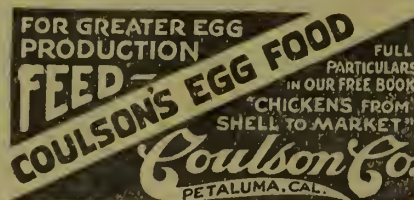
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Poultry Queries

Conducted by J. A. Koethen

Concrete Floor

Is it advisable to put a concrete floor in a brooder house, and if so what sort of floor covering or litter would be best?—Subscriber, San Diego.

The concrete floor is used in many of the most up to date brooder houses and is the best there is if properly covered. It should be covered with a thick layer of clean sand—not less than six inches—and the sand covered with straw or chaff or hay for the chicks to scratch in. Leaves from dry alfalfa hay make the very best litter for chicks, but any clean straw will answer.

Fattening Turkeys

I have a flock of young turkeys ranging from five to seven months old. They are getting greens and all the whole corn they will eat. What sort of fattening ration would you advise?—Mrs. B. J. W.

Whole corn is a very good fattening ration in itself, but you might keep both corn and barley before the birds. The barley gives variety and induces them to eat a little more. A dish of dry bran or of bran moistened with clabbered milk might be given once

dampness, and poor ventilation are the chief causes of roup. After keeping hens nine years on a steep south slope, with granite soil and open front houses, and never seeing a case of roup in all that time, either among my own hens or those of my neighbors, I am inclined to think drainage, both of water and of air, is more important than is sometimes supposed. Here on this hillside the ground is never muddy and the damp air falls away from us. My hens have waded in water in a sudden storm; they have roosted in front of cracks, and been wet through leaky roofs, but never a case of roup. To be sure, they always have fresh air and are never crowded, but I believe drainage counts most. Put your henhouses in a hollow where the dampness settles toward them instead of away from them, and you will have roup, no matter how perfect conditions are otherwise. Roup can be cured permanently only by removing the cause. If your houses do not admit as much fresh air as you would like yourself, if the hens are so crowded on the roosts that they come out into the morning air hot and ready to chill, if your runs are on ground so low that puddles stand in them for several days after a rain, if your houses are so constructed that they admit drafts and do not admit the sun, do not expect to cure roup permanently. Hens like dry air and dry roosting quarters and dry ground under their feet. An attack of roup can often be relieved by what is called the permanganate treatment. Buy ten

POULTRYMAN'S CALENDAR—DECEMBER, PREPARING TO HATCH

Plans for hatching should be formulated by the first of December or earlier. How many chicks are to be hatched the coming season? Of what breed? What sort of stock is desired, fancy or utility? The commercial poultryman has little choice. He keeps White Leghorns, and will either hatch them in his own incubators or engage them from a reliable hatchery. In any case brooder houses must be cleaned and disinfected and runs filled with succulent green ready for the little chicks. On these two factors depends a large measure of his success.

The case of the sideline is less simple. He may wish to buy a male bird to mate to hens of tested worth. He may plan to buy eggs from which to hatch young stock to improve what he already has. The fall shows have shown him where he can get vigorous stock of standard quality and he should have his eggs engaged before January and his new breeders in the runs early in December.

a day, but moist mashers must be very carefully fed and the droppings watched for any hint of diarrhoea. Most turkey people find corn and barley sufficient. The turkeys should not be shut up for fattening. Let them range as before. They are restless in confinement and apt to lose flesh rather than put it on.

Cannibalism

This is our first season with poultry and we find it no fool's job. Our first batch of chicks did well. Our second of 1,100 did better up to four weeks of age, then all in a day it seemed the whole flock had become possessed of a legion of unclean spirits, bent on devouring each other. This kept up for four weeks, and only perpetual vigilance saved the flock from complete annihilation. As it was, we lost but three. We are in a poultry community, but nobody could explain the attack. Do you know any cause or cure for such diabolism?—Subscriber, Sebastopol.

These attacks of cannibalism nearly always begin, I think, with some slight injury to one of the birds, an injury that may pass unnoticed by the caretaker. The chicks, which are naturally carnivorous, get a sight of blood, then a taste, and then go wild for it. The best cure is to get them out onto the ground where they will be kept busy scratching for bugs and worms, but every bird that has an abrasion of the skin must be kept away from the rest or they will attack it. Some authorities have thought additional animal food, in the shape, perhaps, of cooked meat, would check this craving for blood, and it probably will, if there is no temptation to attack other chicks, but no chick, it seems, can withstand the sight of blood.

What Causes Roup?

Please tell me what causes roup. Is there any cure for it? If so, what is it?—Subscriber, San Juan Bautista.

Dampness, poor drainage, which is frequently the underlying cause of

cents worth of permanganate of potash crystals at the drug store, and twice a day put a few of these crystals in a lard pail of warmish water, just enough to turn the water purple. Dip the hen's head in this solution, after massaging the nostril just below the eyes to loosen up the secretion, and hold it there a few seconds. Repeating this treatment morning and night, always with a fresh solution, for the permanganate loses its strength if it stands, often has quick and satisfactory results.

Soft Shells

My hens frequently lay soft shelled eggs. Can you suggest cause and cure?—Subscriber, San Juan Bautista.

Lack of oyster shell may be the cause. Hens must have lime to make shells, and oyster shell provides this in most convenient form. Sometimes pullets that are laying before they are quite mature lay a good many soft shells, and sometimes old overfat hens do the same. In the case of the pullets, stop forcing them and give them time to learn to make a perfect egg. In the case of the overfat hen, try to reduce her by cutting off most of her scratch grain. As I am not told the age of your hens nor their breed I can only hope that one of these suggestions may fit.

Blue Ointment

Is there any truth in the statement that blue ointment is fatal to a chicken if the chicken gets wet after it has been applied? It is the only effective remedy I have used for lice, but it has been raining here so long that I hesitate to apply it. — Subscriber, Arhuckle.

In a bulletin issued by the Storrs experiment station, entitled "Some Lice and Mites of the Hen," I find these words: "Mercurial ointment (blue ointment) sometimes causes a slight burning, shown by a reddening of the skin, which happens more commonly on young chickens. It is thought by some that this is brought about by

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H. CLAY GLOVER CO., Inc.,
118 West 31st Street, New York

S.C. White Leghorns

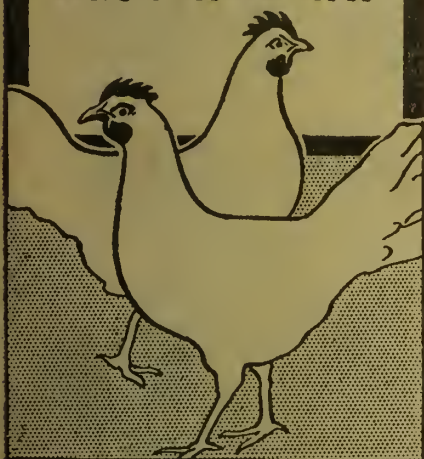
Early Maturity OAK DALE BIRDS

Are noted for laying early in life. Frequently early-hatched pullets lay at five months of age and they lay well throughout the winter and summer months. Many records of more than two hundred eggs per year from single birds are known. The eggs are noted for their uniform size and pure whiteness.

Every OAK DALE (WHITE LEGHORNS) carries the blood of great winners.

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OAK DALE FARMS AUSTIN-MINN.



EGGS—EGGS—EGGS

Increase Your Egg Production
100% By Feeding EmRoCa
Egg Builder

Mr. Geo. Thompson, Alameda, Calif., writes: Have never had my hens lay coming through a molt until I fed EmRoCa Egg Builder; some of my hens were naked of feathers and still laying. Was also of great value to my pullets in bringing them into laying. Would not be without EmRoCa EGG BUILDER.

A \$1.00 Trial Package, Postpaid, for \$5.50

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Hearst Building San Francisco, Cal.

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Supply Houses

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No more Spraying
No more Lice
No more Mites
Complete and permanent eradication of Mites and Lice.

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RAISE GUINEA PIGS FOR US

We supply stock and buy all
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DR. J. A. ROBERTS LABORATORIES
6634 Sunset Blvd HOLLYWOOD, CAL. — Dept CC

the bird becoming wet after the treatment. We have never had any serious permanent effects from this burning." This bulletin recommends the use of blue ointment very highly, but says it should be mixed with vaseline, one part ointment to one or two of vaseline, and should be applied just beneath the vent, a bit the size of a pea being used for each bird.

Mash for Layers

I am mixing my own dry mash by the following formula: 6 parts mill-run, 3 parts coconut oil cake meal, 2 parts barley meal, 1 part beef scrap. I think of adding corn meal and alfalfa meal. Can you make any suggestions regarding this ration? My hens get sprouted barley (sprouted eight days) in the morning and Egyptian corn and cracked corn at night. I plan to add milo maize and kafir corn to this scratch ration.—Subscriber, Oakdale.

Your mash, as you are feeding it, is far too rich in coconut oil cake meal, and your scratch feed, as you plan it, will be all corn as it is now. The addition of corn meal and alfalfa meal to the mash will be an improvement, but you should omit part of the oil cake. As a rule, no more vegetable protein is used than animal protein. This is one of Professor Jaffa's formulas: Bran, 6 quarts; shorts, 2½ quarts; corn meal, 1½ quarts; coconut oil cake meal, 1 quart; beef scrap, 1 quart; coarse bone meal, ½ quart. As you wish to use the barley meal, you might make your formula 6 parts bran, 1 part corn meal, 2 parts barley meal, 1 part alfalfa meal, 1 part each of coconut oil cake meal and beef scrap, and ½ part bone meal. Then instead of two or three kinds of corn in your scratch, make equal parts corn and wheat or corn and barley. You can use both cracked corn and milo or Gyp corn if you wish, but do not make corn or sorghum, which is not very different, more than half the grain ration.

Swellhead in Turkeys

Some of my turkeys have a swelling between the nostril and eye, sometimes on one side, sometimes on the other. After a time it breaks and runs. I have found no remedy that does any good. What would you advise?—Subscriber, San Joaquin.

Your turkeys have swellhead, which is a form of roup. The simplest remedy is the permanganate treatment. Get ten cents worth of potassium permanganate crystals at the drug store. Fill a lard pail or quart measure with warmish water and drop in just enough of the crystals to give the water a deep pink color. Into this dip the head of the affected bird and hold it under for from ten to 20 seconds. I usually dip twice, ten seconds at a time, but the books advise 20 to 30 seconds at once. You can tell when your bird has had all it will stand. Before dipping, massage the nostril and swelling gently with thumb and finger to loosen the secretion. The purpose of the treatment is to thoroughly cleanse the nasal passages, and it should be repeated twice daily, always with fresh solution, till the bird is well. You do not say how old your turkeys are nor where they roost. Turkeys that roost out of doors, as all turkeys over three months of age should, ought not to have roup. Try to find out what is causing the trouble. Removing the cause is the only real cure.

Catarrhal Cold

My chickens seem to have a cold. They sneeze and run at the nose. They roost in an open front coop facing south. Please give remedy.—Subscriber, Ojai.

The open front coop and south front are all right as far as they go, but they will not keep chickens from taking cold if they are crowded or if the coop stands in a low, damp place where water settles after a rain or the air is damp and chilly. Remedy conditions first, then try the following treatment, which is recommended by Dr. Salmon: Pulverize and thoroughly mix the following: 4 drams gentian root, 4 drams ginger, 2 drams sulphate of iron, 1 dram hyposulphite of sodium, 1 dram salicylate of sodium. The dose is 3 to 4 grains daily for a medium sized bird. If the eyes are sticky or there is a good deal of dis-

charge from the nostril, wash once or twice a day with a 3 per cent boracic acid solution or a 2 per cent carbolic acid solution. Remember, however, that doctoring does very little good unless the cause of the trouble is removed.

STORRS EGG LAYING CONTEST

Storrs, Connecticut, October 30, 1920.
Final report for the year ending October 29.

A pen of barred Rocks from New York won the ninth annual egg laying contest conducted by the Connecticut agricultural college at Storrs. This is the first time in the history of the laying trials that the same breeder with the same variety of hens has been able to win two years in succession. The winning pen was entered by Jules F. Francis from Westhampton Beach, Long Island. These ten pullets laid 2,234 eggs, or an average of more than 220 eggs for each hen in the pen. Steady laying during the last half of the year won this pen its place and the blue ribbon for the year. It first took the lead in the twenty-ninth week of the contest, dropped back into second place in the thirty-fourth week, regained its lead three weeks later and held out until the end. This is the third time that Barred Rocks have outlaid all competitors, as can be seen from the following list of winners and their records in the contest at Storrs during the past nine years:

1912, White Leghorns (5 birds), 1,071. 1913, White Leghorns (5 birds), 1,190. 1914, White Leghorns (10 birds), 2,088. 1915, White Wyandottes (10 birds), 2,072. 1916, White Wyandottes (10 birds), 2,265. 1917, Barred Rocks (10 birds), 2,119. 1918, Oregon (10 birds), 2,352. 1919, Barred Rocks (10 birds), 2,022. 1920, Barred Rocks (10 birds), 2,234.

There were 1,000 hens in the contest of 14 different breeds and varieties and from 13 states and three of the Canadian provinces. They laid a grand total of 161,455. The following shows the number of birds in each of the four principal classes, the average individual egg yield for the year, and the general average for all varieties that participated in the contest:

500 White Leghorns, 161.8; 200 Plymouth Rocks, 163.5; 140 Rhode Island Reds, 162.4; 90 Wyandottes, 165; 70 miscellaneous, 145.6; 1,000 average of all breeds, 161.5.

High individual records interest every pedigree poultry breeder in the country. The most remarkable performance of the year in this respect was the record of Barred Rock hen owned by Rock Rose Farm at Katonah, New York. This hen laid 77 eggs without a miss, skipped one day and laid 26 more. In other words, she laid 103 eggs in 104 days. This record has not been equaled in any of the previous competitions at Storrs. Two Barred Rock hens, Nos. 54 and 58, both from Westhampton Beach, Long Island, tied for highest individual yield for the year with scores 281 eggs each. In the Wyandotte division hen owned by Langford Poultry Farm from British Columbia, finished first with a yield of 267 eggs. The best Rhode Island Red hen had record for the year of 269 eggs. White Leghorn from Hollywood, Washington, outlaid every other Leghorn in the contest and scored 254 eggs.

The following list shows the 20 leading pens in the order of their production, also their record for the year:

Jules F. Francis, Barred Rocks, 2,334; Oneck Farm, Barred Rocks, 2,182; Pinecrest Orchards, Rhode Island Reds, 2,162; Hollywood Farm, White Leghorns, 2,119; E. A. Ballard, White Leghorns, 2,048; Chicatawbut Farms, White Rocks, 2,035; W. Edgar Baker, White Leghorns, 1,998; C. Rasmussen, White Leghorns, 1,979; Deer Brook Farm, R. I. Reds, 1,962; George Phillips, White Leghorns, 1,935; Harry D. Emmons, White Wyandottes, 1,915; Ingleside Farm, Barred Rocks, 1,904; A. E. Hampton, Black Leghorns, 1,859; Rock Rose Farm, Barred Rock, 1,874; Jacob E. Jansen, R. I. Reds, 1,866; Small's Poultry Farm, White Leghorns, 1,856; T. J. Enslin, Columbian Rocks, 1,853; A. P. Robinson, White Leghorns, 1,845; A. L. Anderson, R. I. Whites, 1,844; W. H. Bassett, White Rocks, 1,841.



4,200 Eggs From 48 Hens

Simply write me and I will send you a big triple size box of my famous Buttermilk Compound Tablets by return mail, postpaid. I want you to know that you can double and treble your poultry profits by doubling or trebling your egg yield—perhaps get five to seven times as many eggs as did many of my friends last winter by using these wonderful tablets. Fed in drinking water or feed. Because I want these tablets known in every township in America I say: Try them at my risk. If you like them, tell your friends. If not, you are not out a cent.

Over 10,000 People Wrote Me Last Year

Here are a few samples of the kind of letters I get from all parts of the United States.

4,200 Eggs.

I used two boxes of your tablets. Before using them I got only 6 eggs a day. Within two weeks I was getting 12 to 15 eggs a day. In seven months I got about 350 dozen (4,200) eggs from my 48 hens. I did not have any Roup. I give your tablets the praise.
MRS. ARTHUR TUCKER, Wilkeson, Ind.

75 Eggs Instead of None.

I found the tablets were fine to start hens to laying. Before using the tablets I wasn't getting any eggs. Within 10 days after using tablets increase started. I was finally getting 75 eggs a day and fed the tablets until spring.

MRS. R. H. TULTZ, Scranton, Kans.

Makes 'Em Lay in Coldest Weather.

Last winter I fed two boxes of your tablets mixed with feed. Before using tablets got only 12 eggs a day—afterward 30 to 36 eggs a day. This was within three weeks. After feeding the tablets six weeks got 60 and 60 eggs a day and in the coldest weather in winter.

MRS. ELMER HOTTMAN, Ridgeway, Wis.

Best Tablets Made.

The Buttermilk Compound Tablets I think are better than the common tablets. I got more eggs within two weeks after using them. I have some other tablets but the "Buttermilk" are the best. I fed three boxes last winter. My flock did not have the Roup. Will send for more tablets.

MRS. WALTER ELLIS, Gypsum, Kans.

FREE

Because I want one million new users of these wonderful tablets I am willing to send you a big triple size box if you will just write me. Your name and address is all I need. Use a postal card if you wish—I'll send the tablets by return mail, post paid. You use the tablets 30 days then report results to me. If you are not satisfied in every way—if you are not more than pleased—the tablets are to cost you nothing. But if you do find that you get many, many more eggs—probably three to five and even seven times as many—and your flock is healthier than ever before—full of pep and strutting around with healthy red combs—the tablets cost you only \$1.00. No matter what you have tried before, I want you to remember that my secret formula is absolutely different from anything else—that it has been known to succeed where others failed. Not only that—you must remember that I send you a big triple size box—nearly three times as big as the ordinary box of tablets.

At any rate, the risk is all mine. You can't afford to pass up this Special Introductory offer a single minute—it may never be made again.

Send No Money—Just Write Me, That's All.

All I need is your name and address—just put it on a postal card or use the coupon below—I'll understand and send you the tablets post paid by return mail.

R. C. COMBS, Gen. Mgr., Milk Products Co.
660 Creamery Bldg., Kansas City, Mo.

As per your offer send me your big triple size box of Combs' Buttermilk Compound Tablets. I understand I may use the tablets in a 30 days' test, and if satisfied they cost me \$1.00, otherwise they are to cost me nothing.

Name

Address

E. F. D. P. O. Box.

Los Angeles Markets

Los Angeles, December 1, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 57 cents.

CHEESE

Brokers' prices:
California Mats, 30@32.

EGGS

Fresh extras (case included): Produce Exchange closing price 76 per dozen case count, Produce Exchange closing price 73 per dozen; pullets, Produce Exchange closing price 68 per dozen; pewee pullets, 60.

Dairy Exchange price last week on extras:

Nov.	17	18	19	20	22
'20	88	87	85	..	76

POULTRY

Price to producers: Hens, lt., 30; heavy 31; colored, 22; broilers, 40@47; roasters, 32; old roosters, 14; fryers, 40; ducks, old, 23; ducklings, Pekin, 3½ up, 25@28; others 23; geese, 25; turkeys, live, young tom, 45; dr., 50; old, live, 40; dr., 41; hens, live, 45; dr., 50; squabs, 45@47. Belgian hares, live, 16@21; old, 9.

LIVESTOCK

Los Angeles, Nov. 30—Weighed and delivered off cars without food or water: Hogs (hard grain): 125 to 175 lbs., 12.50; 175 to 225 lbs., 13.00.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, November 30, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market firm; Stockton: Burbanks, best, 2.40@2.65 sacked. Idaho Russets, 2.25@2.40 mostly. Sweet mostly 25@1.00 per lug.

Onions: Supplies heavy, market weak. Stockton: Whites, 1.50@1.75; Browns

mostly 1.10@1.25 per 100 lbs. sacked; Yellows, 1.00@1.15, cwt.
Garlic, lb., 12@14.

VEGETABLES

These are the actual prices obtained November 30 by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, Refugee mostly 10@12; Limas, 8@10.

Beets: Doz., 35@45; sk., 2.00@2.25.

Cabbage: Supplies heavy, market weak, wide range in quality. Best mostly 1½ @2 per lb.; per field crate, best, 1.00@1.10.

Carrots: Doz., 25@35; sack, 1.00@1.25, 1.00@1.25.

Cauliflower: Supply liberal, field cr., 90@1.10 according to quality.

Celery: Dozen bunches, 90@1.10; cr., 2.00@2.50; Northern or., 3.50@4.00.

Cucumber: Market firm; local, best, lug, 1.25@1.75, few high as 2.00.

Egg Plant: Lo., 40@6.

Lettuce: Field crate, best, 50@75; few high as 1.00.

Peas: Local, lb., 10@12.

Peppers: Bells and Chills, lb., 3@5.

Rhubarb: Crimson Winter, best bx., 80 @1.00.

Squash: Local summer, lug, 85@1.10; Hubbard, lb., 1½@2.

Tomatoes: Local lugs, mostly 40@60; few best, 85.

Turnips: Per doz., 25@35; sk., 1.10@1.35.

DECIDUOUS FRUITS

These are the actual prices obtained November 30 by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal; market firm. California bushel boxes Bellefleurs, 4 tiers, mostly 1.85; 4½ tier, 1.60@1.75; Jonathans fy., 3.00@3.25; Delicious, fy., 3.25@3.75.

Bananas: Lb., 10½@11.

Cranberries: Bbl., Late Howe, 19.00@20.00; Oregon, bx., 5.50@6.00.

Grapes: Supplies liberal, market strong. Muscats, 12@14; Tokays, 10@12; Cornichons, 10@12; Malagas, 12@14; poorer, all varieties, 5.

Pears: Bartletts, northern, lb., 9@11; local various varieties, 7@8.

Persimmons: Lb., 6@12.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.75@3.00; special packed brands,

3.50@4.00.

Lemons: Market dull, wide range in prices: Local stock: Packed, box, 2.75 @3.25; loose, 1.00@1.50; lug, mostly 50@60. Oranges: Supplies increasing, market dull. Valencias, supplies practically cleaned up. Navels, new crop, local packed, mostly 3.50@4.50, small sizes low as 2.75, special brands mostly 5.00@5.75, few high as 6.25. Grove run 1.75@2.50 loose.

HONEY

Movement slow. Carloads f. o. b. usual terms: per lb. 5-gallon cans White Orange and White Sage, 16½@20; extra Light Amber Orange and Sage, 19; Light Amber Orange, 18½; Light Amber Sage, 12@18½; Light Amber Alfalfa, 11@17. Beeswax: sacked, in less than car lots 40@42 per lb. Prices given represent quotations; practically no sales being made. Wide range due to extremely unsettled market conditions; low prices are considered possible in near future.

NUTS

California Walnut Growers' Association announces prices in 1920 walnuts: No. 1, soft shell, 2½; No. 2, 18½; Budded, 25½; standard budded, 22½ per lb.

GRAIN AND FEEDS

Grain Exch., prices bid November 30: Milo: Carlots, 1.91¼@2.05; No. 3 Eastern blk., 1.72½.

Corn: Bulk, No. 2 Yellow, 1.95; No. 3 White, 1.75.

Bran: Kansas, 39.50.

Kafir: Eastern, 1.82½.

Wheat: Mixed feed 39.00@41.50 per ton.

HAY

Alfalfa Growers of California, report under date of November 30:

The market for alfalfa hay continued throughout the week under good demand which was met by adequate supplies at unchanged prices. The alfalfa situation is inherently strong as far as production and requirements are concerned; the market is therefore in a healthy condition in decided contrast to most other general farm products at present.

There were 1,000 tons received on the tracks in Los Angeles the week ending November 27 as against 750 tons the week before.

Rabbit Alfalfa41.00

No. 1 Dairy Alfalfa32.00

Standard Dairy29.00

Stock Hay25.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:
Tame Oats22.00@26.00
Barley16.00@22.00
Alfalfa22.00@30.00
Barley straw6.00@10.00

San Francisco Markets

San Francisco, November 30, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations:

Extras52

Dairy Exchange prices extras this week and year ago:

Nov. 23 24 25 26 28 29

'20 ... 58 57½ .. 54½ .. 52

'19 68 68

CHEESE

Dairy Exchange quotations:

Jack, full cream22@26

Jack, half skimmed17@20

Ore. Y. A.36

Cal. Flats33

Oregon Trips29½

Cal. Y. A.35

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras79½

Extra Pullets65

Undersized64

Dairy Exchange prices, extras this week and year ago:

Nov. 23 24 25 26 28 29

'20 ... 83 81 .. 81½ .. 79½

'19 88 89

POULTRY

The turkey market is showing weakness due to arrival of turkeys from Australia and promise of more to come.

Wholesale prices are:

Broilers, 15 pounds per dozen, 60@65.

Colored fryers—2 to 3 lbs., 37@38.

DISSOLUTION SALE OF IMPLEMENTS

Discs, Sulky Plows, Pumps, Harrows, Walking Plows, Fruit Trucks, Sprayers, Wheelbarrows
AT GREAT REDUCTIONS TO CLOSE OUT STOCK

On January 1st, E. N. Warr and R. M. Davenport, doing business as the Davenport Implement Co., will dissolve partnership. In the meantime, we desire to sell our entire stock of implements. In order to close the stock out quickly, prices are cut, in many instances, below the cost of manufacturing. Every implement will be sold at a great saving to the purchaser.

	Regular Price	Sale Price
Power lift 3 bottom 12in. plow.....	\$275.00	\$172.50
3-in. steel wheel orchard trucks	72.50	56.75
¾-in. steel wheel orchard trucks	75.00	58.25
Riding attachment for walking plow.....	32.50	21.45
Fruit Press	26.50	16.75
9-ft. farmers favorite grain drill.....	290.00	186.30
10-ft. farmers favorite grain drill.....	300.00	198.65
No. 4 pilot sulky plow	105.00	75.00
12-in. Casaday sulky plow	100.00	57.50
2 bottom Captor plow	225.00	156.00
Walking plows various sizes, steel & wood beam on sale from \$8.50 up		
3 bottom vineyard gang plow	75.00	37.50
Myers hay carrier.....	12.50	6.75
Myers hay truck, per foot.....	.30	.22
Force pumps	16.00	8.15
Benecia Hancock Reversible disc plow.....	125.00	87.50
Large garden wheelbarrow	9.50	7.15

Entire Line of California Made Farming Machinery at Greatly Reduced Prices, as

Triumph buck rakes	\$100.00	\$78.25
Orchard cultivators	75.00	56.85
Bean harvesters	45.00	29.75

Singletrees, Lead Bars, Furrowers, Middle Breaker Bottoms, Cultivator Shovels at Reduced Prices—All New Stock.

Cast Anvils at 10c per pound. Mixed Bolts at 10c per pound.

This stock is too large to enumerate here. If you want a price on anything not listed here, please write us. Courtesies to Dealers.

Davenport Implement Co.

110 North Los Angeles Street

Los Angeles, Cal.

FRUIT TREES

CITRUS and DECIDUOUS

STOCK SCARCE

Order Now for January Delivery

ORNAMENTAL TREES and SHRUBS

The Old Reliable Seed House. Main Store 211 S. Main St. Nursery, 49th and Main Sts., Los Angeles, Cal.

Winsell-Gibbs Seed Co.

When Writing Advertisers Mention California Cultivator

Solve the Labor Problem

No Pushing
Runs Itself
Boy or Girl
Can
Operate It

The Merry Garden Auto Cultivator enables one man to do the work of four. No pushing or pulling—and simply guide it. Travels 120 to 200 feet per minute and cultivates four to five inches deep and within one-half inch of plants.

Equipped with Evinrude 2 H. P. motor and costs but three to four cents per hour to operate.

PRICE, \$230, F. O. F. CLEVELAND
Deliveries made from Los AngelesManufactured by
ATLANTIC MACHINE AND MFG. CO.,
Cleveland, Ohio.

Southern California Distributor

FRED A. BENNETT

223-225 North Los Angeles Street, Los Angeles

PLANT FIG and PEAR TREES For PROFIT

Order Fruit Trees NOW—Stock Scarce

Write For Price List—Full Line—Good Stock

CITRUS, TROPICAL and Full Line of ORNAMENTAL PLANTS

PIONEER NURSERY OF MONROVIA

Good Barnyard Manure

ALFALFA FED

\$3.75 per Ton F.O.B. Cars

E. F. SANGUINETTI
YUMA, ARIZONA

For Sale—Mariout Seed Barley

Good strong seed and free from foreign seeds or dirt. Price \$5.00 per hundred pounds. Send Cash with order.

FALFADALE FARMS
RFD 1
Perris, Cal.

Colored young roosters (smooth), 3 to 4 lbs., 38.
Old roosters (colored), 20@23; market firm.
Leghorns, young, 15 lbs. to 24 lbs. per dozen, 45@48.
Leghorn hens, 3 lbs., 35@37; under, 25; Eastern, 31@35.
Large colored hens, 83@40.
Young Pekin ducks, 30; old ducks, 23 @25; young geese, 27@30; market easy.
Live Belgian hare, 23@25; dressed, 28 @30.
Squabs: Large, 75@80 per lb.
Pigeons: 3.00@4.00 per dozen; market firm.

LIVESTOCK
Western Meat Company prices are:
Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 9@10; second quality, 7½@8½; thin, 6@6½.
Cows and heifers: No. 1, 7½@8; second quality, 6@7; thin, 3@4.
Calves: Light weight, 9½@10; medium, 8@9; heavy, 7½@8.
Lambs: Mlik, 9½@10½; yearlings, 8 @8½.
Sheep: Wethers, 7½@8; ewes, 4@5.
Hogs: Weighing 100 to 150 lbs., 11; 150 to 225 lbs., 12; 225 to 300 lbs., 11½; 300 to 400 lbs., 10½.

POTATOES AND ONIONS
Wholesale prices on street:
River, 1.70@2.00 for No. 1, 1.25@1.50 for No. 2; do. Oregon Burbanks, 2.25@2.65; Salinas, 3.00@3.50; Idaho Gems, 2.65; sweet potatoes, 3¼@3½ per lb.
Onions: Yellow, 65@85 per cental; Australian brown, 65@85; do, white 1.50@1.75.
Garlic: New, 6@8.

VEGETABLES
Wholesale selling price:
Beans: Lb., garden, 10@12; Italian, 8 @10; Limas, 12@13.
Beets: Sk., 1.00@1.25.
Brussel Sprouts: 5@7 lb.
Carrots: 1.00@1.25 sk.
Cauliflower: Doz., 1.00.
Cucumbers: Cr., 2.50@3.00.
Cabbage: Lb., 1.
Celery: Cr., 1.50@2.50; doz., 15@25.
Corn: Sk., 2.00@2.50; fy., 3.00@3.50.
Egg Plant: Southern, 8@10 lb.
Lettuce: Cr., 2.00@2.25.
Onions: Green, per bx., 75@1.00.
Peas: Lb., 13@15.
Peppers: Lug bx., Stockton Bells, 75@1.00; Chili, lb., 5@6.
Spinach: Lb., 6.
Squash: Hubbard, 75@1.00 sk.; Marrowfat, sk., 75@1.00.
Tomatoes: Bx. fy., 1.50@1.75.
Turnips: Sk., 1.00@1.25.

FRESH FRUITS
Apples: Bellflower, 1.30@1.50; choice, 1.15@1.35; C grade, 1.00@1.15; Spitzenberg, 2.00@2.75; Jonathan, 2.50@3.00; Hoover, 1.50@2.00; Newtowns, 3½ tier, 2.20@2.50; 4 tier, 2.35@2.50; King, 1.75 @2.50.
Avocado: Case, 5.50@6.00; small black, 1.00.
Cranberries: Per bbl., 20.00. Oregon, 4.50@5.00 box.
Grapes: Cr., 3.00@3.50.
Bananas: Lb., 10½@11; red, 12.
Olives: Lb., 10@12½.
Pears: Winter Nellis, 3.00@3.75.
Persimmons: Bx., 1.50@2.00.
Pomegranates: 1.50@1.75 per peach box; 2.00@2.50 per half orange box.
Quinces: Bx., 1.50@2.00.

CITRUS
Valencia Oranges: 5.00@6.00; Lemons, 3.25@3.75; Grapefruit, 3.75@4.00; Arizona, 4.25@4.75.
DRIED FRUITS
California Associated Raisin Co. prices:
Muscats: Package seeded, Sun Maid, 25 pound boxes, 20½ cents a pound.
Loose, 25 pound boxes, one crown, re-cleaned and floated, 20½ cents a pound; two crown, re-cleaned and floated, 23½ cents a pound; three crown, re-cleaned and floated, 24 cents a pound.
Layers, three crown flat pack, 20 pound boxes, \$4.40 box; ten pound boxes, \$2.40; five pound boxes, \$1.30 box.
Cluster, four crown pack, 20 pound boxes, \$4.70; ten pound boxes, \$2.55 box; five pound boxes, \$1.40 box.
Six crown flat pack, 20 pound boxes, \$5.50 box; ten pound boxes, \$2.95 box; five pound boxes, \$1.60.
Sun Maid, 20 15-ounce net cartons to

box, \$5.20 box.
Sun Maid, 12 two-pound cartons to box, \$6 box.
Sun Maid, Imperial, four five-pound cartons to box, \$6 box.
Vineyard run, Sun Maid, 100 pound boxes, \$21 box (strapping extra, 19 cents per box).
Thompson Seedless, Sun Maid, re-cleaned, 25 pound boxes, 21 cents pound; 48 16-ounce packages, 21½ cents package.
Sultanas, Sun Maid, re-cleaned, 25 pound boxes, 20¼ cents pound.
Figs: Fancy black, 25-lb. boxes, 12 lb.; extra choice black, 25-lb. boxes, 10 lb.; choice black, 25-lb. boxes, 9 lb.; fancy white, 25-lb. boxes, 18 lb.; extra choice white, 25-lb. boxes, 1 lb.
Prunes: 30-40s, 25-lb. boxes, 19 lb.; 40-50s, do, 17 lb.; 50-60s, do, 15 lb.; 60-70s, do, 13½ lb.; 70-80s, do, 11½ lb.; 80-90s, do, 10 lb.; 90-100s, do, 9½ lb.
Apples: Fancy, 50-lb. boxes, 14 lb.; extra choice, do, 10½ lb.; choice, do, 10 lb.
Peaches: Blue ribbon brand, 48 11-oz to case, 10.00 per case; do, 24 2-lb. boxes to case, 11.00 case; extra fancy peaches, 25-lb. boxes, 22 lb.; fancy, do, 20 lb.; extra choice, do, 18 lb.; choice, do, 17 lb.
Apricots: Fancy, 25-lb. boxes, 30 lb.; extra choice, do, 26 lb.; choice, do, 25 lb.; standard, do, 22 lb.
Pears: Fancy, 25-lb. boxes, 20 lb.; extra choice, do, 17 lb.; choice, do, 14 lb.

BEANS
Jobbers prices:
Small white, 5 per lb.; large white, 5; pinks, 6½; Limas, 8; cranberry, 6¼; Mexican Gravanzas, 8; Lentils, 12½; Blackeye, 7; Mexican Reds, 6¾; Popcorn, 8; California Bayo, 9; split peas, 7, green peas, 4.
RICE
Present price f. o. b. San Francisco, 5.65 @5.75; f. o. b. shipping point practically 20 per cent less. Price of futures, January to March from 1 to 2 cents less.
GRAIN
Sales grain exchange November 30:
Wheat: 3.00@3.10; feed 2.90@3.05.
Oats: Red feed, new crop, 2.30@2.50.
Barley: New feed, 2.10@2.15; shipping, 2.25@2.35.
Shorts, 56.
Middlings, 65@67.
HAY
Alfalfa Growers of California under date of December 1:
There were 1,193 tons received in San Francisco 565 tons the week before.
No. 1 Dairy Alfalfa27.00
Standard Dairy25.00
Stock Hay22.00
A. W. Scott Co. quotes wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers, charge of cartage, commission and handling expenses must be added according to conditions):
Wheat hay, fancy28.00@29.00
Wheat hay (light 5-wire bales) fair to No. 124.00@27.00
Tame oat hay, fair to choice,24.00@27.00
Wild oat hay18.00@20.00
Barley hay17.00@20.00
Alfalfa hay22.00@25.00

Citrus Markets
Los Angeles, Dec. 1, 1920.
Northern and Central California packing houses are running full handed and weather conditions have favored shipment for all fruit is coloring and sweetening very satisfactorily. But few sections south of the Tehachapi are yet shipping. Prices are very satisfactory for good stuff but there is a wide spread because of great difference in quality. Some fruit has been picked so green that shipment was prevented by standardization officials.
Lemons show no life whatever. When any quotation f. o. b. California is made at all it is around \$2.00 and \$2.50 but some fruit has been thrown into the auction and sold for even less than freight charges.
Shipments
Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 278 cars; lemons, 348; total, 626. To same date last season: Oranges, 2,129; lemons, 371; total, 2,500. From Central California to date this season: Oranges, 983; lemons, 21; total, 1,004. To same date last season: Oranges, 891; lemons, 69; total, 960. From Northern California to date this season: Oranges, 89; lemons 1; total, 90. To same date last season: Oranges, 88; lemons, 1; total, 89.

AT THE AUCTIONS
November 24
Philadelphia: 3 cars lemons 2.05-2.65.
Pittsburg: 1 lem. 2.20-3.25.
November 29
New York: 3 or., 5 lem. Val. 6.15-13.15, lem. 1.50-3.05.
Boston: 3 lem. 1.80-3.35.
Pittsburg: 3 lem. 65-2.90.
St. Louis: 1 Val., 1 lem. Val. 4.75, lem. 1.85-2.45.
Baltimore: 1 lem. 1.15-1.85.
Cleveland: 1 lem. 80-3.10.
Cincinnati: 1 lem. 80-1.60.
Philadelphia: 2 lem. 2.50-3.05.
November 30
New York: 5 or., 3 lem. Val. 6.90-13.65, Nav. 1.45-8.65, lem. 2.10-3.40.
Boston: 1 or., 3 lem. Val. 3.55-4.55, lem. 1.60-3.15.
Philadelphia: 1 lem. 2.15-2.45.

WEATHER REPORT				
—Rainfall—				
Stations	San Francisco, Cal.	Wk.	Season	Temp.
		Nov. 27, 1920.		Max. Min.
Eureka	1.38	12.29	8.85	58 40
Red Bluff	1.90	8.74	5.16	64 38
Sacramento	.47	4.70	3.28	53 44
San Francisco	.31	4.43	3.75	60 49
San Jose	.34	3.69	2.92	62 36
Fresno	T.	1.95	1.91	68 42
San Luis Obispo	.06	2.85	3.34	70 40
Los Angeles	.00	1.72	2.11	72 47
San Diego	.00	.45	1.26	70 49
Snow on ground at Summit, 15.0				



The Bean Giant at work in 600-acre Baker-Langdon Orchards at Walla Walla, Washington.

The "Bean" Giant

for Large Capacity and High Pressure

IN large orchards where they have to cover the ground quickly—where High Pressure and Large Capacity are absolutely necessary—the Bean is the universal choice.
The Bean Giant shown above supplies several lines of hose, delivers from 5½ to 10 gallons a minute, and drives the material onto the trees at tremendous pressure in the form of a dense, penetrating, saturating mist which reaches every crack and crevice.

Bean Large Capacity and High Pressure are the result of these features—

- BEAN UNDERNEATH SUCTION allows the liquid to flow from the tank to the pump without help from the engine.
- BEAN DIRECT-GEAR CONNECTION prevents loss of power thru belt slippage.
- These advantages together with BEAN SMOOTH PORCELAIN CYLINDERS and BEAN ECCENTRICS (used instead of cranks) so reduce friction and save power that a Bean Sprayer will throw more liquid than any other outfit with the same size engine.

It is a well established fact that you can throw as much liquid with a Bean two-cylinder outfit as with most three-cylinder machines.

Send the Coupon for New Bean Catalog—It illustrates and describes the entire Bean line of Hand and Power Sprayers, and explains in detail the many distinctive Bean advantages. Write for your copy—now.

BEAN SPRAY PUMP CO.
Originators of the first High Pressure Sprayers
122 W. Julian St., San Jose, Cal.
Branches
Fresno
Los Angeles

Bean
HAND AND POWER
SPRAYERS

50-S3

BEAN SPRAY PUMP CO.
122 W. Julian St., San Jose, Cal.
Please send your "Sprayer Catalog"

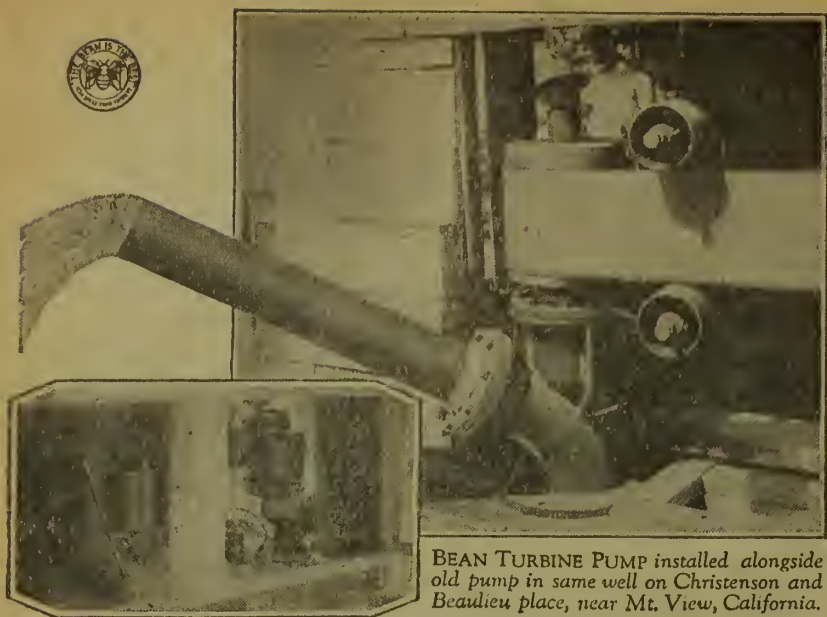
Name _____
Street _____
Town _____ State _____
Kind of Fruit Grown _____
No. of acres _____

Earl E. Sanders
BREEDER OF
Mammoth Bronze Turkeys
- AND -
S. C. White Minorcas
is Booking Orders for Eggs, Chicks, and Breeding Stock
Route D Box 1880 Modesto

NURSERY STOCK
PLACENTIA and EUREKA WALNUT SPECIALISTS
Nurseries—Ventura and Los Angeles Counties
R. E. Pierce
Oxnard, Cal.

A. G. Snow

When Writing Advertisers Mention California Cultivator



BEAN TURBINE PUMP installed alongside old pump in same well on Christensen and Beaulieu place, near Mt. View, California.

Back to Life Again!

(Clip Out and Mail)

BEAN SPRAY PUMP CO.
122 W. Julian Street
San Jose, Calif.

Distance to water below
surface of ground.....

Probable distance to water
when pumping.....

If water is to be raised a-
bove surface of ground, how
high? (Length and size of
pipe line).....

Volume of water desired
(Gals. per min.).....

(Inches).....

If you have pit, give
width..... length.....

depth.....

H.P. of motor or engine if
you have that equipment.....

Give total depth of well.....

Inside Diameter of well.....

Is well straight and true?.....

Is electric power available?.....

Name.....

Address.....

Rural Route No.....

(50-P3) Box.....

Christensen & Beaulieu of Mt. View, California, were up against the problem that is now facing ranchers all over the state. The water level in their well had fallen so low that their old vertical pump wouldn't get more than half of a supply.

They might have dug the old pit deeper, and worried along a while with the old pump—but they weren't going to be satisfied with temporary makeshifts. They wanted permanent results! So they installed a Bean Turbine in the same well where the old pump worked—and they got permanent results—

- they have a good supply now.
- a good supply insured for the future.
- pit dangers eliminated.
- money saved.
- time saved.

If your water levels are lowering, your problem is the same—solve it with a Bean Turbine.

BEAN SPRAY PUMP CO.
122 W. JULIAN ST., SAN JOSE, CALIF.
Branches: Fresno Los Angeles

Bean

Turbine Pumps

A BIGGER AND BETTER COLLEGE OF AGRICULTURE

(Continued from Page 719.)

Issue of the California Cultivator, the controversy hinges mainly on two questions, that of comparative living costs at O. A. C. and U. C., and comparative opportunities to coordinate theory and practice and to get through college quickly.

As a foreign student, not yet a year on American soil, I can say nothing to elucidate either question, but if I may venture an opinion as to the advisability of moving the agricultural college to Davis, I should most emphatically urge that the system remain as it is, partly for the reasons given by R. T. Robinson in the Cultivator of September 18, namely that duplication of prerequisite instruction and laboratory facilities would cause a number of difficulties, less efficiency and greater expense. Furthermore, I believe it to be a great mistake to attempt to segregate one class from other classes of society. The gregarious instinct in man is strong enough to bring farmers together once they are farmers, and enough young people leave the country to lose themselves in the cities because of this tendency to cut rural life and its activities adrift from the rest of civilized society.

The greatest need, to my mind, is to give the country boy an education equal to that of the city boy in the same sphere in which the city boy gets his, not to force him into a cul-de-sac as under the German rural education system, from which he could find no opening at the top.

Let it not be thought that I see no advantages in having the agricultural college at Davis. There are a number, but I think they are sufficiently outweighed by other considerations. The cooperative organizations in this state, created by democratic efforts to solve economic problems, have much improved the outlook for agriculturists, but this is only a beginning. It is necessary for country and city to cooperate, and the U. C. makes that possible for California by bringing together the country student, future producer of food and raw materials and consumer of finished products, and the city student, future consumer of raw materials and producer of finished products.

Producers have to a great extent cooperated. Consumers are beginning to do likewise. Interrelations will have to be friendly and between these two sets of cooperative activity a proper place will have to be found for distributors in the future. College men and women who rub shoulders on this campus now will be better fitted to adjust future relations between themselves in their various fields of work, when the necessity to do so arises, if they are not segregated into separate camps.

Below the very comprehensive letter in the issue of October 9 I was surprised to find that of A. L. Wisker, couched in rather cynical terms. I agree with him that theory does not make a practical farmer; the practical man, however, may lack scientific foundation, which he cannot easily acquire outside of college. The theorist, though, can find all the practice he wants, especially if he and those who deride him will quit thinking that his education is complete. He has only passed his "school tests" and so acquired his "tool chest." He still has to learn to use them.

As to the need of "such a housecleaning," I feel it my duty as an insider to say that it would be miraculous not to find in a heterogeneous aggregation of 10,000 men and women a few lax or misguided individuals of those whose friendship one does not particularly care to cultivate. Yet from my contact with university life since January, including the summer courses, I must say that I still have to find those bad eggs, although I have not been backward in coming forward among my fellow students. One does not often find anything unsought. It does seem unfair for armchair critics far removed from the scenes of campus life to blame and brand the whole university population for the deeds of some undesirables, ferreted out, brought to light and either adequately punished or referred to the proper authorities by the student body itself.

Is it not to the credit of university

students that they are doing their own "housecleaning"?

Considering all things, I have not met with disappointment here as yet. I had in mind before I came the thorough and efficient educational facilities of the U. C. agricultural college, the high standards and the democratic spirit which were said to prevail. I have so far found all three of these factors up to my expectations and worth my journey of about 11,000 miles from the Union of South Africa to avail myself of them.

By J. Francois De Villiers

The reputation of the college of agriculture of the University of California has been spread all over the globe. Even the southern part of the continent of Africa has heard the echo. Hence my decision for coming all that distance for obtaining systematic knowledge and research in agriculture which has an unexcelled standard as this college. I might add that as regards the interrelationship of student and student, intercollegiate in its nature, and genial relationship between the professor and his student, nothing better is desired. I have found everything here beyond what was expected, and would therefore always be ready to respond favorably to a query concerning the factors that influenced my decision in attending the college of agriculture of the University of California.

By L. N. Irwin

The Royce article recently appearing in your paper covering the subject of our "130 California Men at the Oregon Agricultural College" has aroused me to see what can be done to change conditions to overcome this failure to hold our men here at home.

I am sorry that Mr. Robinson didn't take the pains to find out and give to us in his article in the September 18 issue the number of Oregon men and women attending the college of agriculture at Berkeley. It is reported that there are some 200 home state students at the O. A. C. this fall. If this increase keeps up we may likely expect 300 in another year.

In a limited way I have just completed a survey among my friends and neighbors, including ranchers, dairymen, business men, graduates of U. C., and associate editors of two of our leading agricultural papers, on the subject of our college of agriculture. In every instance the opinion was given, as essential to an improvement of the college of agriculture, that the college be brought to Davis where the state has provided a farm equipped for educational and experimental work. If this common expression is typical of the thought general of our agricultural population and citizenship, can we not consistently and hopefully get behind a movement to bring about this proposed change?

With the great onward progressive movement to supply secondary agricultural education through our elementary schools, have we not outgrown the real need of the farm school at Davis which is in reality a secondary school? The good start the state has made in equipping our state farm for educational purposes readily paves the way towards the goal of making Davis the seat of the "college of agriculture." When the task is accomplished and the college properly equipped for its work and when thorough practical courses in scientific farming and an earnest endeavor is made to offer the best opportunity possible for higher agricultural education, it is difficult to imagine any Californian seeking an agricultural education outside of the state.

As there is surely a great advantage in acquiring an agricultural education amid real farm activities, where everything breathes of the country life, where farm life is studied, practiced and enjoyed, there is also great advantage in having the college of agriculture accessible to our many and varied farming interests. To locate then the college nearer the center of our farm activities will strengthen and increase its sphere of usefulness.

It was on a May afternoon last spring that I dropped in at the office of the animal husbandry building on the farm. Prof. True had just returned from a meeting of beef cattle men. He made this significant remark upon greeting me:

LATEST OUT Log and Tree Saw

NOW you can get the latest WITTE Arm Swing, Lever Controlled, Force Feed Log Saw for sawing up logs any size. Moves like a wheelbarrow—goes anywhere—saws up-hill, down-hill or on level. Cuts much faster than former rigs. Operated by a high power, frost-proof

WITTE 4-Cycle Engine

Costs only 25 to 50 cents a day to operate. Double the power needed for sawing logs or trees. Perfectly balanced rig. Can be used for belt work.

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At low cost additional you can now get the new WITTE Tree Saw Equipment—changes Log Saw to Tree Saw. Saws down trees any size.

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For this Complete Log Saw
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Lowest priced Guaranteed rig on the market. Cuts much faster than former rigs. On tests we cut 2-ft. log in 90 seconds. Trees saw cuts 'em close to the ground. Goes anywhere. We are making a special advertising price NOW—So write at once for complete description of this wonderful outfit FREE. BRANCH BUZZ SAW \$23.50.

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One Man Saws 40 Cords a Day

At a Cost of 1 1/2 c a Cord!

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OTTAWA LOG SAW

Cuts Down Trees—Saws Logs By Power
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any size log at the rate of a foot a minute. Does the work of ten men. As easily moved from log to log or cut to cut as any wheelbarrow. 4-Cycle Frost Proof Engine has balanced crank shaft—pulls over 4 H.P. Magneto equipped; no batteries needed.

Special Clutch lever controlled enables you to start and stop saw with engine running. Automatic Speed Governor. Easy to move, costs less to operate. When not sawing, engine runs pumps, feeds mills and other machinery. Pulley furnished.

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See the OTTAWA at work on your farm once and you will never give it up. Thousands in use, every owner a booster. Out-saws any other on the market. Send today for FREE BOOK and Special Offer.

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Has TELESCOPE with magnifying glasses which enable you to see cross on target quarter of a mile. Pays for itself on the first job of

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Best investment any land owner ever made with Twenty-Two Dollars and Fifty Cents. Simple, accurate, durable and complete with full instructions. Used and endorsed by Agricultural Schools, County Demonstration Agents, and farmers from Atlantic to Pacific, and you will endorse it too, after using it—if not your money back.

Write for description of Level and TELESCOPE, details of money back guarantee; also name and address of our distributor in your section.

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DUPLIX-PLUNGER
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One Pump Will Do
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Used with great economy on lifts of 50 to 700 feet, and for boosts 300 feet above the surface.

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826 S. Figueroa St. Los Angeles, Cal.

Make the reading of advertisements in the California Cultivator a habit. They will broaden your knowledge of the manufacturing improvements.

"We have just come from a conference where plans were made which, when put into operation, will put the cattle business ahead just five years."

Let the college of agriculture be located where it can easily and readily share the spirit of country life and respond to the call of the problems confronting our rural population. Let the members of her faculty be in tune and sympathy with the needs of farm life and qualified not only to impart agricultural knowledge but also to train and direct the young people of our state to be leaders in the great community and cooperative enterprises confronting our rural population.

A Resolution

The students in the college of agriculture at Berkeley feel very strongly opposed to this suggestion to move the college to Davis or any other place, for several reasons:

First, we feel that the tendency in present day education is towards too great specialization. We seem to be preparing ourselves merely to make the greatest amount of money in the shortest time without any thought for a broad education or the appreciation of the finer things in life.

Second, if the college of agriculture were to be moved from Berkeley to some other place, we would be deprived of the opportunity to take any courses other than those having a strict bearing on agriculture, whereas we may now take as electives such courses as history, English, political science, economics, psychology, etc.

Third, the strict application of our studies in agriculture can be learned at the university farm by spending a reasonable proportion of the four years there. Recent arrangements have made it possible for the student to spend more time there than formerly, and plans are well under way for further development of the part of the course to be given at Davis. We feel that if a man in inherently qualified to be a farmer the practical side of the work will quickly be learned after he gets onto a ranch, and this tardiness will more than be offset by the advantages of a broad education.

Fourth, the advantages of association with a great number of students studying many different subjects and having such a variety of interests, and of exchanging ideas with them, are so numerous and apparent that they need hardly be mentioned. The opportunities that we now have of attending lectures on an almost unlimited number of subjects, of participating in activities not directly associated with our agricultural college, and of broadening our minds by studying other subjects more than offset the temporary advantage of graduating from the university as specialized and finished farmers.

We feel that a college education means more than to fit a man to be a specialist in one line. It should give him a broad and unbiased outlook on life, should enable him to think clearly on all subjects, and should prepare him to become a leader and a factor for the advancement of his community and the nation.

And it was after a consideration of these points that the agriculture club unanimously adopted this resolution.

(Signed) Edgar D. Boal, President Agriculture Club; R. G. Meckfessel, Sydney A. Anderson, Scott B. Harrington, Ashley C. Browne, Glen C. Raddatz, Welfare Committee.

COCONUT PRODUCTS

The Agricultural Bulletin of the Federated Malay States, in an article on the coconut palm in the Philippines and its productions, says that the export of copra and oil is chiefly to San Francisco. Therefore we are interested to know that the total number of coconut palms in the Philippines, according to government count in 1918, was 31,000,000. The yield was 892,000,000 nuts, or about 29 for each palm. The best district, Zamboanga, averages 45 nuts per tree. The export of copra is valued at more than \$2,250,000 annually and the oil at more than \$2,000,000.

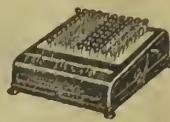
Colusa County growers anticipate that the state fish and game commission will endeavor to secure amendment to the law permitting killing of jackrabbits at all seasons.



Adding



Bookkeeping



Calculating

The ABC of Business

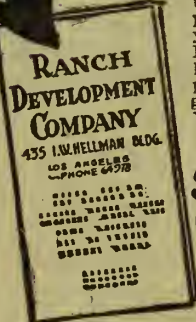
Adding figures, posting ledgers and other bookkeeping records, and making the countless calculations that must be made in every business office—discounts, percentage and other figuring jobs—all of these can be handled on some one of the models of Burroughs Adding, Bookkeeping or Calculating Machines.

There is a Burroughs for any figuring need; a machine that will do the work more rapidly, accurately and economically than it was done before.

Adding-Bookkeeping-Calculating Machines
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This Folder Tells You How To
Make Your Idle Land Earn Money

This is the day and age when you should make every foot of land produce profits for you. If you have any size tract ranging from 80 to 5,000 acres in the Western States that need development you should send for this book at once. It tells you the way to develop your property through the use of Hydro-Electric plants, gravity irrigation systems, pumping plants, grading, and buildings; in fact, it points out the various essentials that are necessary to make your ranch a producing property. Now is the time to act, so that you can get a crop from your land next year. It is a certainty that crops will bring good prices next year, so take advantage of this condition and get your land under cultivation now. Write today, stating location of land and number of acres.



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a real profit in
the dairy business

Unless
you use a

GRAIN FEED!

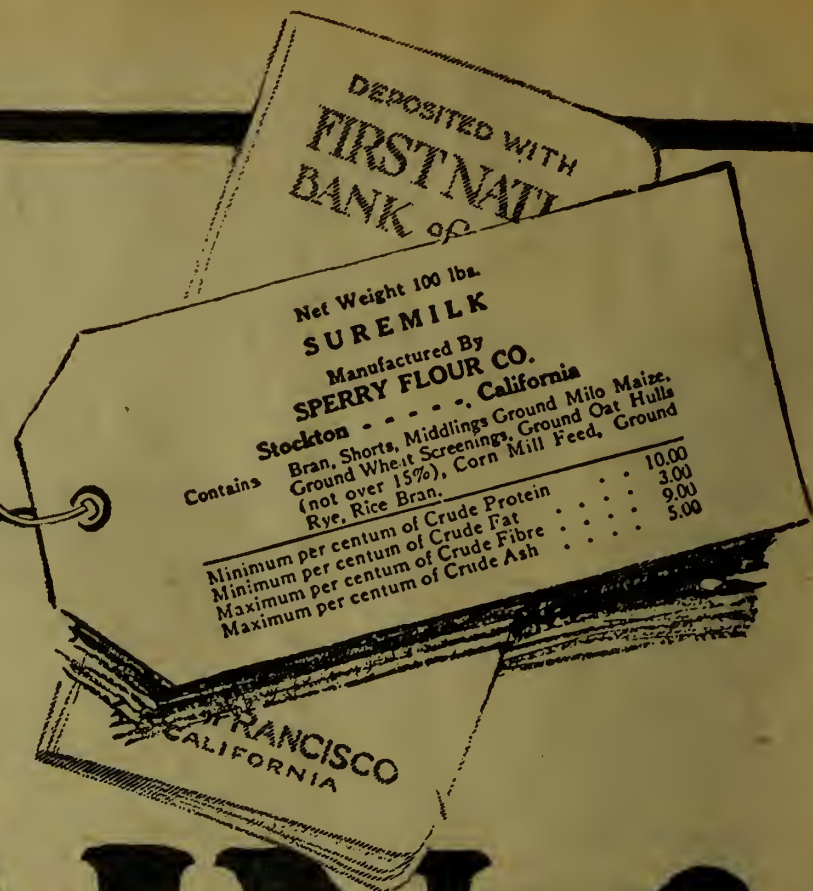
Why? Because a highly concentrated grain feed like SUREMILK is necessary not only to balance the feed elements required by a cow but to *reduce* the cost of milk production. It costs just as much to take care of a string of cows whether each cow yields 4 gallons or 2½ gallons of milk per day. So, where's the dollars-and-sense in letting them "fill up" on straight roughage that only taxes their urinary and digestive organs and that nets you neither milk nor money?

SUREMILK is based on the practical findings of hard-headed dairymen. It is a

mixture of by-products from the table cereals manufactured in the Sperry mills at Stockton. Its quality and uniformity are guaranteed by constant inspection and analysis. There's no guess-work about SUREMILK—or what it will do.

If you want to see why SUREMILK has helped many a dairyman to put his herd on a paying basis—if you want to see why the highest priced concentrates are cheapest in the long run—send for your copy of our booklet, "*Converting Feed into Money.*" Simply cut out and mail the coupon today—it's free!

NOR, for that matter, can you make a real profit raising hogs unless you balance their ration with a grain feed. You must remember that the digestive tract of the pig is small and unlike that of the cow. The cow's stomach is equipped to handle bulky roughage. The pig can not—or, at least, Mr. Porker will gain very little on pasture alone. Growing pigs demand some form of grain. And the successful hog raiser recognizes their need for it. He knows, too, that SUREMILK supplies this essential element in a fattening hog's ration. It has a greater feeding value than the best barley. Economical, too! For it is highly concentrated in feed value and does not bulk.



STOCK & POULTRY FEED DEPT.

SPERRY FLOUR CO. STOCKTON, CALIFORNIA

SUREMILK

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Send me "*Converting Feed into Money.*"
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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

December 11, 1920

No. 24

As the Giant Reed Grows in Coachella Valley



Arundo Donax. This escape from the garden, now "run wild" in California, is native to South Europe, evidently the warmer parts, for it seldom flowers with us. But it makes almost a phenomenal growth and is of value planted in washes to hold soil from washing or channels deepening. Also of value as a windbreak or to screen unsightly objects from view. Cut, the stems are used to wrap citrus and other trees to prevent frost damage, also to thatch arbors or even temporary living quarters---especially valuable in warm semi-arid sections. ¶ Grows best in wet soils.---Photo taken near Mecca.

Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

LIVESTOCK and DAIRY JOURNAL

Journal of Horticulture, Agriculture and Livestock

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OUR ADVERTISERS RELIABLE

We guarantee our subscribers against
loss through dishonesty of any adver-
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tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice of
complaint must be sent us within 30 days
from date of the transaction, and the
subscriber must have mentioned the
Cultivator when writing the advertiser.

EDITORIALETES

Many have seen the giant reed
growing along our streams, sometimes
so far from human habitation that it
is considered a native of the state.
It is not, but, like many of the rest
of us, has become thoroughly Califor-
nian. The most luxuriant growth we
have seen of this reed is in the Coa-
chella Valley. Just at the left of the
beautiful scene on the cover a great
hole had been carved in a clump of
this reed and a perfect garage made.
The protection from both rain and sun
was complete because of some eight
or ten feet of solidly matted reeds
above. This reed is grown by the side
of one of Coachella Valley's perpetu-
ally flowing wells. Continual irrigation,
with Coachella Valley soil and under
Coachella Valley sunshine all add to
the beauty of the scene shown on the
cover.

* * *

Things are a bit quiet along some
lines, but raisins and some other fruits
are quickly picked up and we are told
by an orchardist who had planned ex-
tensive enlargement of his orchard
this season that the man who wishes
to be sure of trees for this season's
planting should make contracts at
once. There are not now sufficient
trees to meet the needs if half of pres-
ent plans are carried out. The planter
who is late in making definite ar-
rangements may be unable to secure

trees until another season, and the
loss of a year's growth and the satis-
factory markets which it is believed
will prevail on all of our staple fruits
will more than offset any possible low-
ering of price which other years may
bring.

* * *

Furthermore, in placing contract for
trees we believe that stock which has
been budded with buds selected with
an idea to greatest production of high-
est grade fruit should have first con-
sideration. The amount of this stock
is all too limited. Therein will the
early contract have particular advan-
tage.

* * *

Are we farmers going on a strike?
Are we going to limit production? Are
we going to combine and profiteer?
These and a bunch of other long ques-
tions are floating about. We think we
have a perfectly correct answer to all
three of the questions, and that is sim-
ply "No." The farmer is opposed to
strikes, and even limiting production
by a general argeement is considered
by some as having a bit of the flavor
of a trust, and as to profiteering we
believe we are entirely correct in as-
suming that the vast majority of farm-
ers at least are content with reason-
able profit. But the business man who
does not consider the law of supply
and demand soon fails and the farmer
who simply obeys the cry, "Produce
More," without stopping to consider
the market, the supply on hand, the
amount which probably will be pro-
duced, or other considerations affect-
ing market values, is liable to come
to grief.

* * *

The government has been backing
and filling more or less in the Raisin
Association case. Its present attitude
favors amending the pending bill
against the Associated by charging
that the acts complained of were in
violation of the interstate commerce
law. A motion has now been made
to set aside the stipulation entered
into by the attorneys of the Associ-
ated and the government in which
the company agreed to abandon prac-
tices which had been objected to by
the government. It has been agreed
that the questions involved shall be
argued before Judge Bledsoe in Los
Angeles, December 20.

* * *

The suspension of diversion privi-
leges and change in rates on fruits
from California to overland points has
been suspended by the interstate com-
merce commission until March 31.
Meantime California fruit shippers will
gather a fund of information which
will doubtless continue the privilege.

* * *

Farm wages have been dropped by
farmers of Butte County from \$4 to
\$2.50 per day. Tractor drivers will
receive \$4. Dispatches announce that
the men practically all remained on
their jobs. Liberty steak and bacon
remain up, however. Let the retailer
take advantage of some of the low
prices which the packer is paying for
livestock these days and give us rea-
sonable meat—and, incidentally, there
are shoes, furniture and some other
things.

* * *

Los Angeles County's coroner is
now holding a trifle more than an
average of one inquest per day be-
cause of deaths due to automobile ac-
cidents. There are more than ten ac-
cidents every day in the city of Los
Angeles alone. Nearly 400 people
were involved in the month of Novem-
ber and 31 were killed or died as re-
sult of these accidents. To be sure,

there are 22,000 automobiles using the
streets of that one city alone, and in
this vast number of drivers there must
of necessity be careless ones. Nor
is this city alone in the slaughter, for
it is charged that the loss of life an-
nually by automobile accidents in the
United States is greater than the num-
ber of American boys who lost their
lives in the recent war.

* * *

THAT "BAG OF RICE"

A short time ago I read your
editorial entitled: "Buy a Sack of
Rice." At the same time I searched
the columns of The Cultivator for an
ad that would tell me where to buy
this rice. How is a fellow going to
get any rice or any other produce that
these fellows have on hand if they do
not advertise and let the public know
where to buy? If I had a surplus on
hand I imagine a small ad in The
California Cultivator would help re-
duce the surplus and also be appreci-
ated by a lot of farmers and other
folk that are paying retailers enor-
mous prices. The olive people want
to sell their olives. Who are they?
Where do they live? How much do
they want for their olives? How many
olives have they to sell? What are
olives good for? Let us hear from
them. We may buy an olive or pos-
sibly a couple of olives. Anyhow, we
will keep on reading the ads and buy
what is advertised.—Frank Littig.

We appreciate Mr. Littig's belief in
the advantage of reading the adver-
tising columns; they surely contain
much of real value.

The rice growers are not yet organ-
ized so completely that they have ar-
ranged either to sell single bags of
rice or to advertise them through our
columns, but they are members of the
Cultivator family, so we are glad to
pass on the "Buy a Bag" suggestion
of the Rice Growers Association. A
letter from the association, in answer
to request similar to Mr. Littig's, says
that the association can hardly sell
these single bags and pay the local
freight rate which would be required
to distant parts of the state and get
them to the consumer for much less,
perhaps not even for as low a price
as the consumers may secure them
of their grocers.

So the Cultivator man took a walk
to the nearest large grocer, and here
are some Los Angeles prices: Broken
rice, 6 cents per pound, \$4.50 per 100
pound sack; Blue Rose, 13 cents per
pound, \$10 per hundred; Head rice,
Extra Fancy, 15 cents per pound, \$13
per hundred; polished rice, Jap style,
10 cents per pound, \$7.50 per hundred;
Extra Fancy package whole brown
rice, 27½ cents per pound straight.

The larger cooperative organizations
are confronted with so many difficul-
ties that it is probable it would not
be wise to attempt disposal of their
products at retail.

BENJAMIN HOLT

Benjamin Holt, father of the
caterpillar idea in tractors, is dead.
He was born in New Hampshire, Jan-
uary 1, 1849. He came to California
in 1883, first engaging in a hardware
business, later beginning manufactur-
ing in a small way. He was one of
the first to see the needs of California
agriculture and began the manufac-
ture of the old time steamer tractor.
His shops being located at Stockton,
he soon became familiar with the dif-
ficulties confronting tillers of the delta
lands and saw the need for a tractor
which would stay on top of soft
ground. Writing regarding Mr. Holt's

life work, Mr. Walker, secretary of
the Holt Company, once said:

"The necessity for some other means
of traction than is offered by wheels
became evident when the big steam
engines were sent down into the re-
claimed tule lands of the California
Netherlands to do plowing and har-
vesting. Wheels as wide as 18 feet
on each side of the machine were used,



but even these did not present enough
surface in contact with the ground to
prevent sinking. Mr. Benjamin Holt
therefore developed the idea of a self
laying track and invented the first
track type of tractor which appeared
as a commercial success early in the
1900's."

From this "caterpillar" development
came the big tanks which were one
of the greatest factors in the settle-
ment of the World War. Mr. Holt and
his family have built up one of Cali-
fornia's greatest industries in Stock-
ton and from it has sprung a branch
which has become even greater than
the home factory, at Peoria, Illinois.

SAVING THE OLIVES

We cannot help but feel that
our state board of health has been a
bit unwise in its ruling that no olives
which have been processed at less than
240 degrees for 40 minutes shall be
sold. Such ruling as to canned or
bottled goods is doubtless entirely
wise, for it is known to be perfectly
safe. It is also fairly definite that
olives cured in open tub or vat and
stored in open barrel or other con-
tainer in brine have never been known
to cause botulinus poisoning, and we
believe the sale of this home cured
fruit amongst the neighbors of the
olive grower might be permitted. If
our packers were able to handle the
entire output such a move would per-
haps be unwise as an advertising
proposition, but buy them all they can-
not, and growers are continually com-
ing to this office and asking, "What
shall we do with our fruit?" and sev-
eral requests have come as to methods
of home making of olive oil.

In order to give a little information
along this line we repeat on page 760
of this issue an article written for the
Cultivator by Mr. Cruess some two
years ago. In addition, in next week's
paper we will give Mr. Roeding's for-
mula for dry curing of olives. There
is demand with a certain trade for
fully ripe dried or, rather, cured olives,
and while it might not be wise for
the olive grower to cure in large quan-
tities without developing a market,
this method at least offers an open-
ing.

In the meantime may we not ask of
the state board of health considera-
tion of the question of disposal of a
few thousand tons of a fruit which
should be cared for and made into one
of the most healthful foods on earth.

California Cultivator

Vol. LV, No. 24

Los Angeles, December 11, 1920

One Dollar Yearly

Planning and Planting a Vineyard: Varieties

By Fred K. Howard

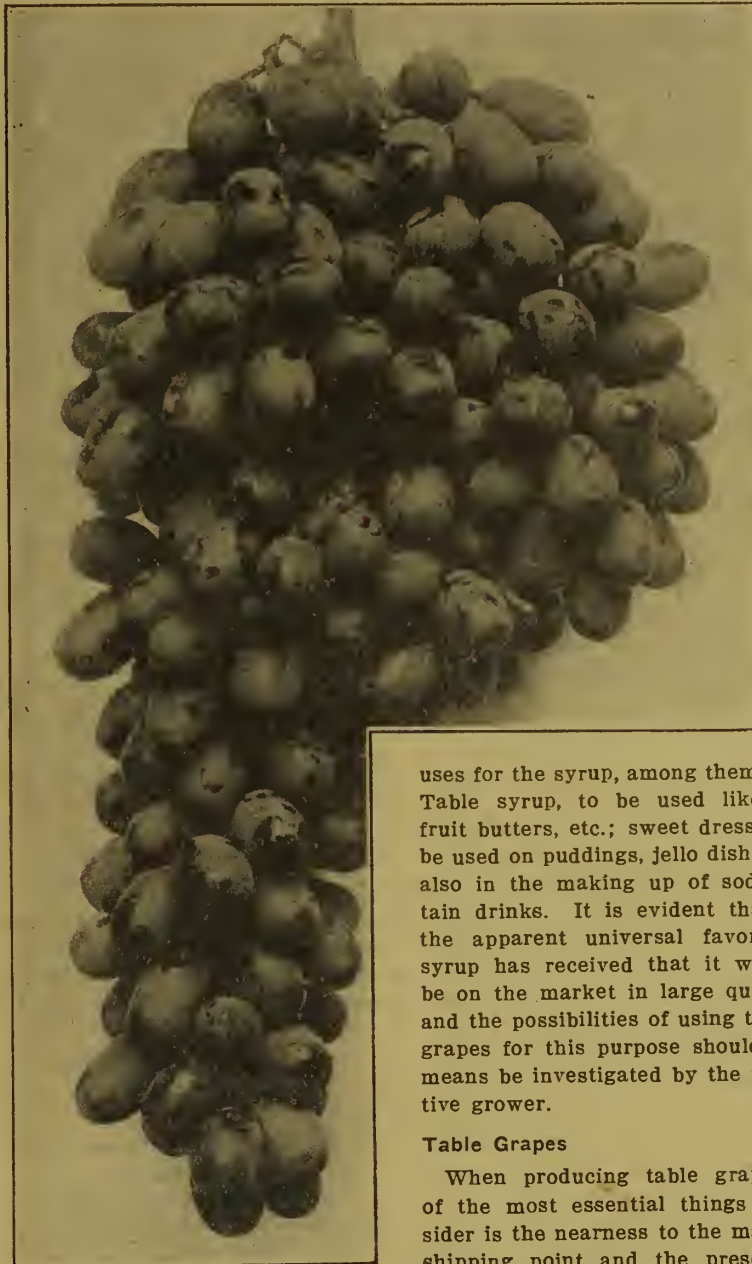
AFTER the land has been selected and you are sure of a dependable supply of good water, the next most important thing in the planning of a vineyard is the selection of the variety or varieties to grow. It is usually considered a safe plan to grow at least two varieties to prevent total loss in any one season through frost, rain or other factors over which the grower has no control.

The consideration of varieties is a very vital part of the undertaking and it is not to be expected that we can here definitely settle the question for every grower, as a variety which is admirably suited to one set of conditions might be absolutely out of the question in another locality. We can, however, give some facts and suggestions regarding the more common commercial varieties which it is hoped will be of material assistance to readers of the Cultivator who are planning to start in the vineyard business.

Your first decision will be whether or not you will grow grapes for the table market, for raisins, or the so-called wine varieties which are now being used very largely in bulk shipments to Eastern markets or are manufactured into grape syrup.

Wine Grapes

We will presume at this time that your inclination is toward the varieties which were used in the making of wines before the prohibition laws became effective. One must bear in mind that the market for these grapes in the fresh state may at any time be largely prevented by the federal government or at least so curtailed as to make their production unprofitable. There is, however, a perfectly legitimate outlet for these grapes, and probably always will be, in the form of California grape syrup. In a folder recently published by the California state department of agriculture the following statements regarding this product are made and prove interesting in this connection: "California grape syrup is as distinctive in character from other syrups as is pure maple syrup. The grapes from which it is made are the wine grape varieties which are now no longer used for wine



The Black Monukka

An early ripening practically seedless grape. This is a new dual purpose variety which may be used either for shipping or raisin making. Photo by Fred K. Howard.

making. These grapes produce highly colored red or golden hued white syrups and impart to them a special character and a distinctive flavor." The folder also enumerates several

uses for the syrup, among them being: Table syrup, to be used like jams, fruit butters, etc.; sweet dressings, to be used on puddings, jello dishes, etc.; also in the making up of soda fountain drinks. It is evident that from the apparent universal favor grape syrup has received that it will soon be on the market in large quantities, and the possibilities of using the wine grapes for this purpose should by all means be investigated by the prospective grower.

Table Grapes

When producing table grapes one of the most essential things to consider is the nearness to the market or shipping point and the present and possible condition of the roads. Grapes which are grown to be shipped fresh to Eastern markets should be handled as little and as carefully as possible. The grower should not plant table grapes in districts where there are no other shipping grapes unless he plans to produce enough himself to encourage buyers and shippers to purchase his fruit. A buyer will not ordi-

narily travel long distances to secure a crop of only a few crates of grapes.

The present varieties in most common use are the Flame Tokay, Malaga and Emperor. Among the other varieties which are planted in commercial quantities are the Cornichon, the Black Prince, Mission and Gros Colman. All of these varieties have their good and bad points and should be investigated carefully before planting, particularly with reference to the time of ripening, shipping qualities, and how they are received by the trade in the East. There are possibilities of developing some of the little known varieties particularly for late shipping. The Ohanez, or Almeria, grape has been suggested for this purpose and should lend itself to packing in sawdust as is done now to some extent with the Emperor. There is also a place for a variety which will ripen a little earlier than the Malaga and which is red or brownish in color. The Meriville de Malaga has been suggested for this purpose, and the Black Monukka is also receiving some attention. Both these grapes should be seriously considered. The representatives of the various fruit companies are always able and willing to give valuable information regarding the prices different varieties have commanded in the past and would also no doubt be able to give some hint of the prospects for the future. One very essential point in the production of table grapes should always be remembered. Do not attempt to grow the later ripening varieties in districts where early fall frosts are common.

Raisin Grapes

The choice of raisin grape varieties is not so large, but it is none the less very important. The Muscat of Alexandria, or the Muscat as it is commonly called, has always been the leading raisin grape in the state, but present tendency seems to indicate that the Thompson Seedless will soon pass it in numbers of acres planted. There will undoubtedly always be a good market for the Muscat either in the form of seeded raisins or in fancy clusters, but the soils suitable for its best development are unfortunately limited, as it must have a medium

(Continued on Page 759.)

Crop Insurance

By C. B. Messenger

THERE are insurance companies which will take any kind of a risk, not only of fire, life and health, but weather conditions, any loss which may come from unexpected turn of cold, rain, drouth or heat. For many years grain growers have insured standing crops from destruction by field or forest fires. Now comes crop insurance of another type, that is, insuring the crop against flood or other condition which prevents maturing of a full crop. Insurance companies have been taking such risks in Yolo and other nearby counties of the

Sacramento Valley. This enables the grain grower to invest largely in seed, equipment and labor to put in a crop of barley and know that if drouth prevails and the crop fails to mature he may still be protected from a total loss and have, perhaps, sufficient to begin another season's operations.

The cost of this insurance has varied with localities, seasons, capital owned by the insurer, his ability as a farmer and a number of other considerations. It may be as low as two and one-half or three per cent or it may be 12 per cent.

Orange growers have discussed the matter of insuring crop on the trees against injury from cold, and at one time the Lloyds had an agent in the Southern California field making investigations. The situation is such, however, that it requires an expert meteorologist with abundant data at hand to determine the probable conditions which may prevail in different localities. The final result has been that either the citrus grower has carried his own insurance merely by gambling on the weather or else by

fitting his orchard with orchard heating apparatus and stock of oils or distillates for an ordinary campaign.

The prune and apricot growers of the Santa Clara Valley have within the past two years carried to a limited extent insurance on their products after harvesting and while on trays.

Raisin makers of the San Joaquin and Sacramento Valleys have made a test during the past season, to a very limited extent, however, of insuring raisins, after being placed on the trays, against loss by rain or other weather conditions.

The importance of this has been

(Continued on Page 762.)

Agricultural News Notes of the Pacific Coast

Northern California

Petaluma, Sonoma County, produced 21,678,000 eggs, or 722,000 cases, between January 1 and October 1.

Sacramento Valley orchardists have begun their winter orchard cleanup spraying with lime-sulphur wash.

The annual meeting of the California Cattlemen will be held at San Francisco at the Palace Hotel, December 11.

Sacramento County farm bureau cow testing association has been re-organized. There will be a membership of about 600 cows.

President Walker of the state federation recently made address before the Butte County farm bureau urging affiliation with the state organization.

Taxpayers in Reclamation District 108 in Colusa County are protesting against exclusion of a large tract of 28,000 acres from assessment for costs.

The state railroad commission has placed valuation of \$37,000,000 on the properties of the Spring Valley Water Company which San Francisco is considering purchasing.

A two weeks' short course in pomology has just been finished at the university farm at Davis. Special attention was given to spraying, drying of fruit, and pruning.

The semi-annual meeting of the El Dorado-Amador Livestock Association, was held at Ione the last week in November. The next meeting will be held at Placerville, April 3.

Colusa County has produced some exceptionally fine crops of Indian corn during the past season. It has proven profitable and an extension of the planting is urged for another season.

Yolo County fat hog auction recently held at Woodland resulted in \$13.80 for high price on 204 pounders. Low prices were made by one bunch averaging 113 pounds and another averaging 363 pounds.

Declaring it an impossibility to continue paying high wages under present conditions in the rice fields the members of the Glenn County Rice Growers Association have reduced harvest wage scale.

There are now 562 students at the university farm school at Davis. Besides these there are 261 registered in short courses. Of the 562, 36 come from 19 other states and 22 of them from 11 foreign countries.

Former President Bertholdt of the Nurserymen's Association makes comparison of California prices of nursery stock with those of large Eastern nurseries showing that California prices are about half those of the Easterners.

The Central California Woolgrowers Association which has been composed mostly of sheep raisers of the Livermore Valley has decided to extend its scope of operation and invite sheep raisers of the San Joaquin and Sacramento Valleys to work with it.

Glenn and Colusa County people are incensed at the exaggerated stories of flood damage. A dispatch was received from the Red Cross in San Francisco asking if aid was needed. The break was at a pump hole which had been erected in the levee. A gang of 75 men soon had the break stopped. At its greatest length it was only about 100 feet.

Central California

Kings County farm bureau has re-elected J. W. Jenkins president.

A \$75,000 Japanese Buddhist temple was dedicated at Fresno last week.

The new cotton gin at Wasco is now handling new crop of long staple.

The Associated Raisin Company has made its final payment on the 1920 crop.

The California Associated Raisin Company now controls over 40 packing plants.

Tulare County orange shippers are availing themselves of state department inspection.

The recent rains gave nearly an inch precipitation in many sections of the San Joaquin Valley.

Prof. Condit is visiting fig sections of Merced County and encouraging production of finer output.

The Terra Bella farm center is discussing advisability of thorough winter irrigation of vineyards.

The California Peach and Fig Growers Association has bought the Hansen fruit packing plant at Fresno.

Turkey raisers at McFarland, Fresno County, report contracts for Christmas turkeys at 65 cents dressed.

The Milk Producers Association of Central California has decided to join the state body. The vote was 807 to 47.

Protest of Fresno residents against the erection of an undertaking establishment was favorably decided in the courts.

Prof. Flossfeder of the state university has been giving pruning demonstrations in San Joaquin County vineyards.

The Naval orange crop is moving out rapidly from the Porterville district. Growers report no trouble in getting sufficient help in harvesting.

Bean growers of Stanislaus County are thoroughly in sympathy with effort of the California Bean Growers Association to secure protective tariff.

The report of the California Associated Raisin Company for the crop handled in 1919 shows sale of 159,260 tons from which was received \$43,283,254.

From all over the state come protests against wanton destruction of Christmas berry trees. Several arrests are reported to have been made on private property.

The directors of the Tulare County farm bureau have raised the dues to \$7.50. This to cover the county expense only, local center expense to be carried by each center.

A Madera County farmer has succeeded in securing good price for his sweet sorghum by installing a small mill in the field, crushing and reducing the sweet sap to a syrup.

The railway commission reports development work carried on during the past year gives assurance that there will never be a similar shortage of power to that of the past season.

Manager Niswander of the Peach and Fig Growers has bought an old packing house near Fresno and will install a training school for fig packers. The school is to be opened this week with 30 girls under training. After sufficient training these girls will go as instructors to various packing houses over the valley.

Southern California

Imperial Valley is making shipments of its early ripening grapefruit.

Imperial Valley expects to plant many new vineyards the coming year.

Ventura County is protesting against the carrying away of her holly berries by the truck load.

Anaheim citrus growers shipped 593 cars from the association's packing house during 1920.

Honey producers of Hemet report receiving profitable prices for their honey this season.

Carload shipments of peas are being made to Eastern markets from Carlsbad, San Diego County.

A grape buyer in the Palo Verde Valley is offering a minimum price of \$50 a ton on a seven year contract.

San Diego County's first car of oranges left Escondido November 22, bound for Saskatoon, western Canada.

Banning almond growers have sent out several carloads of almonds and in spite of reduced price are getting very good return.

Southern counties are now conducting spraying demonstrations for peach blight and leaf curl, to be continued in spring as well.

The Riverside district has shipped 60 carloads of oranges for the holiday trade; the Arlington Growers Exchange has shipped out about 20.

The Alfalfa Growers Association of Imperial Valley held five meetings at as many points, the president and other officials from Los Angeles being present.

A large delegation of Eastern citrus fruit agents are now touring the orange districts of the South. They represented nearly a dozen states, and parts of Canada.

The citrus experiment station at Riverside has about 5,000 citrus hybrid seedlings in vigorous health and no doubt some new varieties of citrus may develop therefrom.

A very important meeting of cotton growers was held at El Centro, November 20, at which vexing matters pertaining to grading, prices and ginning were satisfactorily settled.

Owners of more than 1,000 acres formerly in beans in the Camarillo section of Ventura County have signed an agreement to grow beets, on account of the low price of beans.

Last year 1,400 machines for extracting orange juice were placed at soda fountains through the California Fruit Exchange; during the coming year they will place 10,000 more.

Failing to find a party who could satisfactorily attend to their spraying work, the members of the Valle Vista farm center of Riverside County have decided to form and operate a spraying company themselves.

The cotton growers, at their recent meeting in Los Angeles, entered a protest against any restriction of immigration that would cut off the alien cotton pickers from annual periods of residence on "this side of the line."

Until January 12 grape vines and cuttings from phylloxera free districts north of the Tehachapi will be admitted to southern counties under present regulations, after which date none may enter from any section north of Tehachapi.

The Coast and General

Stock shipments from Arizona are now very light.

Wenatchee Valley shipments of apples for 1920 will total 8,500 cars.

Hood River County, Oregon, leads the state in apples, having 10,446 acres.

Portland, Oregon, provides a daily glass of milk to 2,500 of its school children.

Eugene, Oregon, announces a marked shortage of nursery stock over all the Northwest.

The Yakima Valley, Washington, shipped over 1,300 cars of potatoes in 1920, at an average price of \$30 a ton.

California raised two-thirds of the fig yield of the United States in 1920 and 80 per cent of it came from three counties.

The annual meeting of the Western Fruit Jobbers Association will be held in Colorado Springs, Colorado, January 24-26.

Walla Walla County, Washington, crops for 1920 are estimated to be worth \$20,000,000. Wheat leads with estimate of \$11,000,000.

Yakima Valley, Washington, shipped but 6,000 cars of fruit this year, valued at \$7,000,000, as against 11,000 last year, valued at \$17,000,000.

One Kings County, Washington, horticulturist exhibits 50 varieties of apples, 28 varieties of pears, besides a varied assortment of grapes, nuts, etc.

The Washington Wheat Growers Association will send a representative to a meeting of the national farmers marketing bureau in Chicago about January 1.

Proposed change in rates and regulations governing diversion of fruit shipments has been suspended by the interstate commerce commission until March 31.

The 1920 egg laying contest in Washington gained first prize for Scott O. Holt, Auburn, with the year's return from five hens of eggs marketed to the value of \$54.76.

The steamer Marama left San Francisco last week carrying six cars of oranges, four cars of apples and a large consignment of lemons to Wellington, New Zealand.

Recent cold weather in Arizona is reported to have done no damage to olives; they are now being delivered to factories in good condition and practically all of the fruit is picked.

Local employment agents in Spokane say that there now are from 1,500 to 2,000 men idle in the city. It is hoped that the reopening of lumber operations with the first snows will improve conditions.

A special meeting of the executive committee of the Western States' Reclamation Association was held in Salt Lake City December 10. Reclamation specialists from 13 Western states comprise the committee. The chief discussion was on necessary reclamation legislation.

Special Assistant Nebeker to the Attorney General states that "Because farmers' cooperative organizations are exempt from application of anti-trust laws the department of justice had given no consideration to the campaign to withhold crops from the markets until prices advance."

Success on a Trapnest Foundation

By Jean A. Koethen

OVER the hill from the little village of Newhall in a green and purple rimmed basin which its fortunate inhabitants lovingly call Happy Valley is one of the best producing poultry ranches in the state. When we remember that the staff at Davis owns up to an average of only 120 eggs a year per hen and that the Poultry Producers of Southern California assumes the same average 172.5 eggs a year would seem to be "going some," yet that is what R. C. Gibson of Eggland Ranch secured from his hens last year, and he confided to me that he expects to do a little better this year. How does he do it? Production like this is no accident, we may be sure.

In the first place, Mr. Gibson is a young man with an ideal. His wagon, to use the Emersonian phrase, is hitched to a star. Success in poultry culture, he believes, lies in bettering the average. If a poultryman can worry along and make ends meet on an average of ten dozen eggs, every extra dozen he can secure means that much more labor income, and labor income means comfort now and something laid by for a rainy day. Fifty-two extra eggs in a year from each hen means over \$2 more labor income. A hen must eat whether she lay many eggs or few, and she must have a place to live in. Overhead and feed have been paid for by the first ten dozen. The last four dozen are clear profit.

When the Gibsons moved to Newhall six years ago it was in a search for rest and health for Mr. Gibson after a strenuous experience as salesman for a big millinery company. He had had a thorough business training, but knew nothing of poultry or any other kind of farming, except what he had learned in two years in an agricultural college long before. This was not the worst sort of equipment by any means. In fact a man with some idea of the principles of poultry husbandry fortified by the habit of keeping accounts has an excellent foundation to build on. "While I rested," he says, "my heart turned back to my first love—the desire to get a living from the soil. My years in college had taught me something about the possibilities of the land, and as I read the conviction grew that in no other way could as big an income be made from a limited piece of land as by poultry raising. I read everything I could get hold of, bought the most comprehensive works on poultry culture, such as Professor Dryden's book, Harry R. Lewis' Productive Poultry Husbandry, Professor Kaupp's volumes on diseases and management, and tried to master the principles of poultry husbandry right at the start. All authorities agreed that vigorous, highly productive stock is the foundation of success, and so I set to work to find the right kind of stock."

Trapnesting for Foundation Stock

It was evident that guessing would not answer in picking out foundation stock. Breeders must be producers of known quality, and only the trapnest could pick them out. The first year Mr. Gibson trapnested 225 pullets of five different strains. Most of them were discarded, but one lot proved to be remarkably good, and out of this lot the trapnest selected forty 200 egg hens. The cost of labor prevented a

continuation of trapnesting after two years, but the foundation had been laid. Nearly all of these forty hens are still laying at the end of four years, but most of them will go to market this fall. From them has been bred a line of cockerels that will perpetuate the fine production of their mothers, and hens of such remarkable fecundity that they merit

trapnest the first year and make sure of their foundation stock they will find it abundantly worth while. No man can predict how many eggs a hen will lay in a year. He can select by certain signs the hens that have laid heavily, but I doubt if a prolific strain can be built up without some trapnesting. If you begin with prolific hens the rest is easy.



A Restful Spot and a Profitable Poultry Ranch

Upper photo shows birdseye view of Eggland Ranch with the mountain rim of Happy Valley in the distance.

The middle picture shows some promising pullets. These pullets sleep in an open front house and spend their days in the shade of an oak. Such a house can be built now for \$30.

The bottom picture shows one of the Eggland laying houses. Note the wooden awning which may be swung at two angles from the hinge at top of the first board.

the title Mr. Gibson gives them—"super-layers." The present cockerel breeding pen contains 11 hens that averaged 255 eggs in their pullet year. The best layer ever produced on the ranch laid 292 eggs in a year, and the highest producer at present has a record of 287 eggs. One hen has just finished laying 58 eggs in 60 days.

A pen of ten hens from Eggland Ranch has been in the California farm bureau contest since last November and has held from first to third place the whole eight months. The week ending June 5 they stood third with 50 eggs, and the weeks ending June 12 and June 19 they stood first with 53 and 51 eggs respectively. "Tell beginners for me," urged Mr. Gibson, "that if they will just take time to

"The trapnest is the surest method of testing out all kinds of theories. It is also a great help in regulating the ration. One should study his chart daily. If a hen is lagging in production, it may be because she is too heavy, and again it may be because she is too thin. Handling her as she comes from the nest will show which is the case. If she is thin, a little more scratch grain will put her in laying condition, for a hen must have some reserve fat on her bones to be a steady producer."

Culling the Layers

Once the trapnested foundation has been secured, the layers may be culled from year to year, selection being made according to time of molting, color of shanks, beak and vent, and

especially in regard to vigor, for a hen that is lacking in vigor lacks the first requisite for long distance production. This stock is culled for vigor from the day it breaks the shell. Whenever a pullet begins to lag in development or shows any sign of weakness, out she goes. If examination shows that she lacks the deep keel and large girth about the abdomen so necessary in a high producer, or if she is not laying at seven months of age, out she goes. Selection for performance, however, begins about the first of July and continues through the summer. Every point that carries any weight in separating high producers from loafers is considered. "There's a girl that must go," Mr. Gibson pointed out, calling my attention to a pale shanked, pale beaked Leghorn lady, "and there's a doubtful one. Her beak is pale but her legs are yellow. This one, now, with the wilted comb and yellow legs, there is no doubt about her. That girl with the yellow beak, but her comb still red, she will lay a little longer. The hens with the yellow bands on their right legs have gone broody once. They never get more than one broody band. The second time out they go."

Pullets that mature early, say at five or six months, are banded with a red band. Every pullet that has passed the first year test, that is, has not gone broody more than once, nor molted before October nor stopped laying for any other reason before that time, receives the band that has been selected for designating the tested hens of that year. Some of the best hens in the flock are four years old, but whatever their age it is seen by a glance at the leg band.

When the culling is complete the hens are grouped in four classes: The first class consists of those that laid till December 1 before they stopped to molt; in the second class are those that laid till November 15 without stopping; in the third class those that laid till November 1, and in the fourth class those that laid till October 15. The hens of the first class are mated to cockerels from hens with a record of 240 to 280 eggs. This is the cockerel pen.

Double Yards

The six acres comprised in Eggland Ranch are carefully laid out on an elaborate double yard system. Instead of two yards to each house the four laying houses have four apiece, two in front and two at the rear. This is in order that any one of the four flocks in the house may have a yard by itself during the breeding season if it is desired. The houses hold each 300 hens, in four flocks of 75 each. The front yards are planted once a year to Sudan grass and the rear yards once a year to barley. On this very sandy soil a single yearly planting is deemed sufficient for sanitation. All laying houses are open front, facing east, with nests and mash hoppers along the front. Windows under the droppings boards and ventilators above provide circulation of air in hottest weather.

The brooder house is heated by hot water pipes, and accommodates 2,000 chicks in 20 runs 3 feet wide and 10 feet long. Portable runs are used outside. Not more than 100 chicks are kept in a single run and a smaller number is preferred. Only two hatches are run in a season, one com-

(Continued on Page 780.)



Top-Dressing Talk, No. 2

Fertilizing the Citrus Orchard

Both the scientific investigator and the practical grower indorse Arcadian Sulphate of Ammonia as the nitrogenous fertilizer for citrus.

The following is the opinion of the manager of the Fontana Farms Co., Mr. John R. Lupdimo, after very carefully testing Arcadian Sulphate of Ammonia in the citrus orchard:

"I candidly believe it to be true, that where one wishes to build up a poor soil into a fertile one and retain it under years of cropping, no better economical selection could be made of a nitrogenous fertilizer than Sulphate of Ammonia and home grown leguminous cover crops to plow under as a source of organic matter. The above combinations are the most essential ingredients required in most southern California citrus soils."

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CALIFORNIA: SAN FRANCISCO; Hawaiian Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Pacific Guano & Fertilizer Co., Western Meat Co., California Fertilizer Works. LOS ANGELES; Pacific Guano & Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Agricultural Chemical Works, Hauser Packing Co., Hawaiian Fertilizer Co., Ltd., Southern California Fertilizer Co. OREGON: PORTLAND; Swift and Co.

Write Desk 5 for Bulletin No. 3, "Citrus Fertilization"

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Time to Prune Vines



THE pruning of raisin grape vines is thus discussed by Richard Schmidt in the last issue of the Associated Grower:

It is often a question with the vineyardist as to when he should start the pruning of his grapes. One man will start pruning immediately after the leaves have fallen, another never begins until after New Year's and a third will wait until the sap begins to flow or the buds begin to swell. In ordinary years and under ordinary circumstances there would be but little difference in the crops of the vines pruned at these different times. Aside from the labor question it will make but little difference just when the pruning is done in normal years. Only in a few scattered cases is pruning done outside of the dormant season and these are in frosty sections.

There is some difference in crop and growth, however, depending on the time the pruning is done during the dormant season. The leaves of the vine feed the other parts, such as the canes, trunk, roots, etc., so that just before the leaves drop the canes are richest in plant food, which gradually diminishes and recedes into the roots, although some of the food again ascends into the canes to keep them alive during the dormant season.

So when vines are pruned immediately after the leaves have dropped, the cuttings made from the brush will be richest in plant food and best for propagation. However, in practice cuttings are usually not made so early in the season on account of the attention they require in keeping them until spring. Pruning vines before the leaves drop is detrimental to them on account of the removal of the leaves.

Some Effects

Vines pruned immediately after the leaves have fallen usually start to grow earlier in the spring. As a general rule the later the pruning is done, the later the buds will start. Those pruned in December and January, or at the time the majority of pruning is done in the state, will start

several days later than those pruned immediately after the leaves have fallen, while those pruned when the sap begins to flow will start still later, sometimes as much as ten days later. And when the pruning is done when the outer buds have started to grow, it may delay the lower buds from two to three weeks. In the spring a large portion of the food material in the roots is forced into the canes. So when the pruning is done at this time, this food material is lost to the vine, the latter becomes somewhat weaker in its growth and the fruit sets better.

Frost Precaution

There is no doubt that in frosty locations late pruning will often save the crop, provided the frost does not come too late, but it is a question whether the copious bleeding of the vine when cut after beginning to grow is not injurious. No doubt it is weakening, but with very vigorous vines the bleeding may be an advantage in reducing the growth and increasing the crop.

In actual practice the time of pruning will depend to a great extent upon the size of the vineyard and the number of pruners employed. All vineyardists know how difficult it is to get a good job of pruning done, and it is evident that the greater the number of pruners in a vineyard, the poorer are the chances for successful work. The more pruners there are the greater the number of poor ones. So, making use of the whole dormant season, pruning early until late, with the least possible number of pruners, should bring best results. The dormant season referred to would begin after all the leaves have dropped and end with the beginning of sap flow.

As stated above, the best time theoretically to make cuttings would be when they are most plentifully supplied with food material, such as immediately after the leaves have fallen; but as they can not be made until the vines are pruned, the making may have to be deferred until spring. It is best not to plant cuttings directly after making, but have them stored where they may callus if possible.

Larger Cooperation



WE ARE very much interested in the editorial in your November 20 issue, 'Cooperation in the Large,'

also the item on the opposite page under the head, 'Cooperation of Cooperators.' This is exactly the program which our general manager, Vernon Campbell, has been advocating for a number of years and which now promises to be developed to some extent at least; how far depending on the degree that the separate associations are willing to surrender their separate sales organizations.

This comment is from R. G. Spencer, organization manager for the California Cooperative Canneries, with headquarters at San Jose. We also note in a recent San Jose Mercury Herald an interview with Vernon Campbell, general manager of the Cooperative Canneries. Mr. Campbell remarked:

"Reestablishment of confidence in business and the solution of the marketing problem of this as well as of other states demands that the activities of the war finance corporation of the treasury department be resumed and that international trade be fostered by the direct exchange of commodities between different countries. An organization of the producers' associations of this state would do much to effect such a mutual exchange of commodities.

"The marketing of the present California fruit crop, and the probable difficulty of disposing of next season's crops, is intimately concerned with the export problems of the cotton and grain producers of the United States. This country normally produces three times as much cotton as it needs. At least two-thirds of our cotton must be exported.

"To restore confidence it is essential that our export problems be solved. Foreign exchange does not improve, and from present indica-

tion is not likely to in the immediate future. The exchange of our products directly with those countries ready and anxious to deal with us is the most sensible and businesslike proposal that I have yet heard recommended.

California's Opportunity

"We have in California 10 or 12 large cooperative organizations controlling products valued at over \$150,000,000. My suggestion is that these great organizations of producers combine for the purpose of exporting such of their products as can be marketed, especially throughout Europe, arranging to accept in return such products of the laboratories and factories of central Europe as are desired and can be readily absorbed by the trade in this country.

"For instance, a foreign country desires our dried fruits. We need from that country their dyes, inks, cutlery, scientific instruments, and other products which we are here unable to manufacture in the quantity or quality demanded. The exchange of our fruits for their supplies becomes the logical course of procedure.

"An organization composed of the various cooperative associations of this state would, in my opinion, be able to work out a plan for the exchange of products, thereby relieving us of our surplus, and at the same time opening up avenues of distribution for next year's crops."

CONTRABAND CITRUS STOCK DESTROYED

In accordance with the provisions of Quarantine Order 28 which forbids the entry into California "of all citrus fruits and citrus trees of every variety from any state or territory," Commissioner H. J. Ryan and his deputies, with the aid of local United States postoffices, has apprehended

and destroyed some 70 packages of Citrus trifoliata, grown at the U. S. Botanic Gardens, Washington, D. C., and mailed under frank of Congressman C. H. Randall to various persons in the county of Los Angeles.

More than 60 of the packages had been delivered and the larger part of the citrus nursery stock had been planted, but notwithstanding the almost Herculean task, Commissioner Ryan succeeded in tracing, locating, and without undue annoyance, destroying all of the trees.

As a phase of the proceedings, Congressman Randall and H. C. Needham of Newhall denied the right of a state officer to prohibit the entry of an interstate shipment, but the challenge was promptly set at rest by an opinion of the district attorney who upheld the state of California and Quarantine Order 28.

In the past the state has had to contend with a class of violations that fall largely under the head of "ignorance of the law," on the part of the malefactor; however, in this specific instance, the opposing parties hotly contested our right to keep the state free of disease, and insect pests, that have made other citrus growing states and districts unprofitable.

Thanks to the vigilance of our alert quarantine guardians and our quarantine code we have been spared a possible invasion of citrus plant pests and it goes without saying that mail shipments of nursery stock will pass redoubled scrutiny whether under the frank of representatives or otherwise. We admire Mr. Ryan's firm and vigorous attitude and his vigilance will also be appreciated by the representatives of California citrus industry.—G. H. H.

PLANNING AND PLANTING A VINEYARD: VARIETIES

(Continued from Page 755.)

heavy soil running from a sandy loam to a loam. In recent years it has been found that in spite of its very thin skin that it can be shipped successfully, and it therefore has made a place for itself as a dual purpose grape.

The Thompson will thrive on almost any soil. The old belief that this grape required a light sandy soil has now been largely exploded, as exceptionally heavy producing vineyards are to be found in adobe and "dry bog" soils. It will do better, however, on the light sandy soils than will almost any other grape, with the possible exception of the Zante currant. There is a general feeling in some districts that the planting of the Thompson being overdone. Only time will tell if this contention is true. We do know from past experience that salesmanship and advertising can do wonders in the marketing of California products. By the continuation and extension of the present sales and advertising program it will undoubtedly be possible to dispose of all the raisins of this variety that will be grown, at a fair price. The Sultana is now largely being replaced by the Thompson and is rarely ever considered when new acreage is planted. There are two other varieties which should be considered very seriously, the most promising one being the Zante currant. There are now about 250 acres planted to this grape in the state and there seems to be no logical reason why California should not produce at least enough of this variety to supply the already existing demand. This grape has much to commend it to the grower. First of all it ripens very early and dries very rapidly, thus enabling the grower who might also be producing the Muscat or Thompson to use the same trays and sweatboxes for both crops. The early ripening factor also practically eliminates all question of rain damage, which is such a large factor in the production of other varieties, especially the Muscat. Consideration should be given to the Black Monukka which was mentioned as a table grape above. This grape ripens early, is practically seedless, is larger than the Thompson and makes an excellent raisin. Unfortunately it will probably be several years before there will be sufficient cuttings of either the Zante currant or the Black Monukka to supply the demand, but it is safe to assume that these two varieties will be planted as rapidly as the available stock will permit.

MARKETING AVOCADOS

It is realized that a considerable quantity of avocados will be ripening next spring and summer, in small lots and scattered over a large territory. This phase of the industry was discussed at the last meeting of the directors of the California Avocado Association held in Pasadena, December 2 and will be one of the chief matters considered at the next meeting of the directorate.

The membership was reported as 373, a very pleasing steady growth. The committee on varieties reported favorably on a new one from Whittier shown at the last (Pasadena) convention, but it is still under observance and test. Two designs were shown of signs warning fruit thieves but definite action on them was postponed. Copy for the booklet of avocado recipes was approved and the same ordered printed at once. Resolutions of sympathy were adopted for the two members recently bereaved, Dr. Lester Kelier and J. M. Elliott. Preliminary arrangements looking to the spring meeting were considered and a few other matters of no importance to the public disposed of and the directors adjourned, to meet again in the near future.—E. B.

AGRICULTURE WORK IN NORWAY

F. W. Woll, professor of animal nutrition in the state college of agriculture, who returned today to the university after a six months' leave of absence spent in study and travel in England and Norway, in which latter country he received his early education, issued the following statement relative to conditions abroad:

"Labor conditions in both countries are unsettled by many strikes. However, the situation seems likely to improve, since the people more and more are coming to see that work alone can save the countries from the evils that followed in the wake of the world war. Limitation of the number of students admitted both in the elementary agricultural schools and in the college of agriculture was a striking feature of Norway's educational system. Rigid examinations held at the opening of the school year keep out half or two-thirds of those who apply."

SAILORS VIOLATE CITRUS QUARANTINE

L. E. French, state quarantine inspector at San Diego, in a report to Director Hecke recounts the following occurrence which should be of unusual interest to citrus growers as well as to all quarantine officers. Coincident with the arrival of a trainload of sailors in San Diego, from the Great Lakes naval training station, November 16, 1920, there appeared quantities of Florida oranges and orange peelings at the railway depot and along the tracks leading to the station.

Inquiry brought the information that the oranges were procured at the "Great Lakes training station and were issued to the sailors on the train in considerable quantities, the final issue being made at Oceanside. It appears that with the oranges instructions were issued by the officers—who admitted knowledge of the quarantine regulations—to throw all peelings and remnants out of the train before arrival at destination. The possible consequences of scattering such material along the tracks through a citrus country may be easily imagined.

Mr. French briefly reports: "It is needless to say that all the contraband fruit on the train was confiscated and the depot platform was carefully swept up and the fruit and peelings burned."—(L. A. S.)

ORDER TREES EARLY

The manager of one of the largest tree nurseries at Fresno said that 75 per cent of available orchard tree stock for 1920 was booked, not only in his establishment, but throughout the Central California district. Press notices of the outlook in Oregon and Washington show like conditions throughout the great Northwest. More recently southern dealers have reported the same probable shortage, not alone in deciduous but in evergreens and sub-tropical fruit trees and plants. He who would be assured of planting stock should order early or he may be forced to defer orchard extension for another year.

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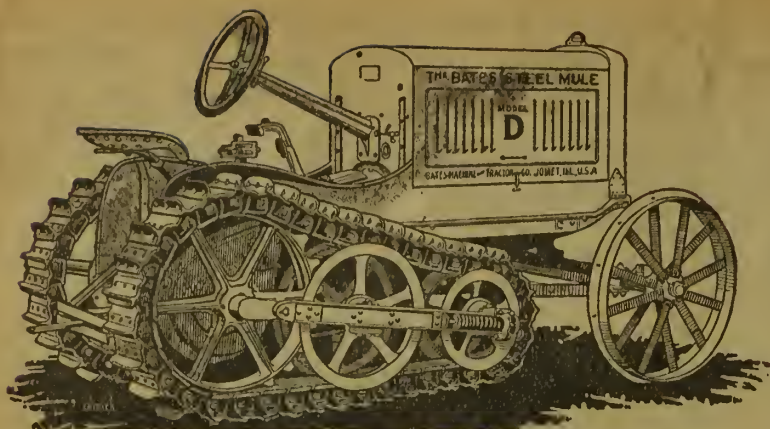
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Test after test in different parts of the country has continually shown this to be a fact.

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When Writing Advertisers Mention California Cultivator

Home Made Olive Oil

By W. V. Cruess

In answer to question as to the manufacture of olive oil at home in our issue of November 9, we referred to an article formerly written for the Cultivator by Prof. Cruess and appearing in the Cultivator of January 4, 1919. As the disposition of surplus or waste product of the olive tree seems to be almost impossible today, this article may have renewed interest, so we repeat, especially in view of the fact that so many have written for copies of the former number that it is impossible to meet all these requests. The essential part of Prof. Cruess' original article is here given.



HERE is no thoroughly satisfactory way of making olive oil upon a very small scale without expensive machinery. The methods described below are the best that we have been able to find or devise for small scale use, but the yields of oil when compared with commercial factory yields are low. The necessary utensils can be found on any farm.

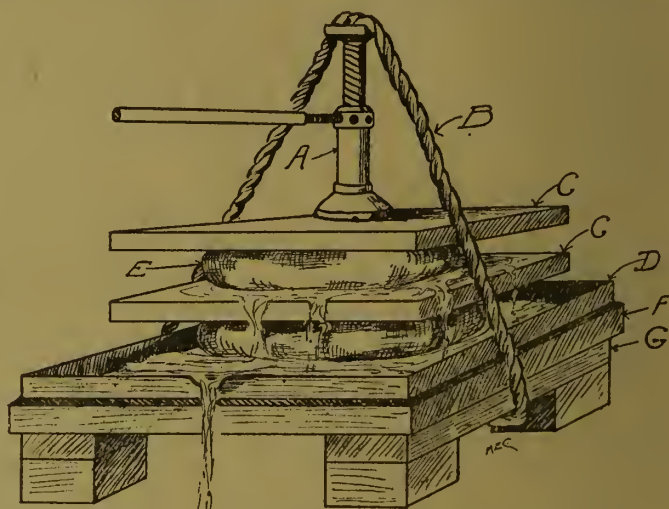
Extraction of Oil Without Pressure

A pound or two of ordinary lye, such as Babbitt's, Red Seal or Green-

badly stained and roughened by the lye and olive juice.

Place the pulp, which should now be of a pasty or mushy consistency, in a pot with about two or three times its own volume of water. Heat with stirring to the simmering point for about one-half hour. Set aside for several days to permit the oil to rise to the surface. Usually a fair yield of oil can be obtained by skimming it from the surface of the pulp. The pulp may then be heated to boiling a few minutes with more water and allowed to stand again. The process should be repeated several times. We have obtained about two-thirds the yield of oil by this process that can be obtained by use of a commercial press. The secret of success lies in rubbing the olive flesh to a fine grained pulp on a screen.

The oil obtained by this process must be washed and should be filtered as described later in the article. It has been found that the yield of oil is sometimes increased by adding about one-fourth pound of salt per gal-



Home-Made Olive Oil Press

Plan and drawing by Prof. W. V. Cruess. Specifications in Prof. Cruess' article.

bank's lye, will be needed. Make up a solution of the lye of one-half pound of the lye per gallon of water, using an agateware or iron pot. Do not use your aluminum ware; it will dissolve in the lye. A small basket of wire screen such as is used for making French fried potatoes will be needed, or a piece of cheese cloth can be used.

Heat the lye solution to boiling and while it is boiling dip the olives in it for about 20 seconds. The time will vary with the toughness of the skins. Leave the olives in the lye until the skins are softened; that is, practically dissolved. Then plunge them into cold water for a few seconds to check the action of the lye.

Place the lye treated olives on a piece of fly screen tacked to a frame over a large dishpan. Rub them on the screen until the flesh has separated from the pits and dropped through the screen into the pan. A heavy pair of gloves is useful in this process to prevent the hands becoming

lon of water used with the pulp. Always use a large excess of water with the pulp, as this facilitates separation of the oil.

Home Made Olive Press

A simple press made from materials usually found about the place is shown in the accompanying figure. This press has been described by F. B. Pinkus in the Olive Journal. The writer has made several modifications in the original plan of the press.

A, heavy wagon or automobile jack. B, small iron or steel cable or chain or heavy rope. C, two pieces 2x2x12 inches. D, shallow wooden water tight tray. E, heavy hurlap cloth to hold crushed fruit. F, floor of 2x12 inch material. G, 2x4 inch braces. The tray D and floor F are 16x16 inches.

One of the greatest difficulties will be the crushing of the fruit. This may be done as described for the method above. If this method is used,



A Big California Olive Oil Mill

Such a powerful mill and big press as is shown in the background is not possible in home making of olive oil but this illustration gives an idea of the industry as conducted in this state.

return the pits to the olives before pressing. The olives may also be crushed by placing them in a strong sack and hammering the sack with the broad side of an axe or with a heavy board in the same way that ice is crushed in a sack. The fruit must be thoroughly broken up. It will crush better if it is boiled a short time to soften it.

Place the crushed fruit and pits in a piece of heavy burlap and fold the edges of the burlap in to give a press cake about 10x10 inches and about four inches thick. Make two of these and place them in the press as shown in the figure. Press slowly until no more juice can be obtained. Save all juice and oil pressed from the fruit. The pressed pulp should now be boiled with an equal volume of water and pressed again. This pressed pulp should again be boiled and pressed. Usually a fourth heating and pressing will pay. Combine all of this pressed liquid and allow it to stand in a tub or barrel over night. The oil can then be skimmed off.

Washing the Oil

Oil obtained by either of the above methods will be bitter and not clear. It must be washed with water to remove the bitterness and rough flavor. To do this first prepare a bucket or five gallon can with a hole and faucet or cork near the bottom. Place the oil in this container and add an equal quantity or more of warm water. Mix oil and water by stirring for several minutes. Allow water to settle several hours. Draw off the water and replace it with fresh warm water. Stir; settle and draw off after several hours. Repeat until the oil no longer has a bitter taste. Usually two days washing will be sufficient.

Filtering the Oil

The oil will be cloudy and mixed with a little water. It can be made clear by filtration. A tin funnel can always be bought from the hardware store. One about seven inches in diameter is a convenient size. Filter paper can be bought from the drug store. Ask the druggist to fold the paper for you and tell you how to place it in the funnel.

Place the funnel in a wide mouthed bottle or place a 1x3 inch piece of wood over a bucket and bore a large hole in the wood to take the stem of the funnel easily. Pour the oil into the filter paper in the funnel and allow it to filter. Oil filters slowly; do not become discouraged if it requires several days for it to run through the filter.

Aging the Oil.

Olive oil is not fit to use as soon as it is made. It should be kept for at least one year before it can be expected to have the proper flavor. Keep it in well cleaned bottles away from bright light. Too much light will cause it to lose color and flavor. A warm room will cause it to age more rapidly. The oil will also age more rapidly if the bottles are only three-fourths full and if a small piece of cotton is used to close the bottle.

CROSS POLLINATION OF THE IMPERIAL PRUNE

By E. R. de Ong

The superiority of the Imperial prune, especially in size, makes it a desirable fruit for planting in most prune districts. This prune is, however, quite frequently a shy bearer as grown in California, hence any improvement by cross pollination is very important. The following observations made in Santa Clara County may be of interest in connection with this subject, bearing out the recommendations of Hendrickson in Bulletin 310 of the California experiment station.

The French and Imperial prunes have been experimented upon for years in this valley, especially near Gilroy, in the hope of securing better pollination. This experimental planting has not been as successful as desired. The failure has been attributed by some growers to the fact that the two varieties do not bloom quite as near together as would be necessary. The Robe de Sargent and Sugar prune are also acting, in a limited way, as pollinators for the Imperial. In most instances that have come under the observation of the author this type of planting has not been so much inten-

tional as accidental. In one orchard near Gilroy there are adjoining blocks of Imperials and Robe de Sargents. It is reported that for a period of years it has been necessary to thin the first four or five rows of Imperials adjoining the Robe de Sargents, while the remainder of the block sets a light or moderate crop.

This peculiarity has also been noted where the Sugar prune has been planted near Imperials. This combination of varieties may not always be so successful as in the instances mentioned, but at least it gives promise of being a valuable cross. New plantings are now being made in Santa Clara County on this principle, the Sugar and Imperial prunes being planted in alternating rows. It may be possible, judging from the observations made, that the Robe de Sargent may also prove a successful pollinator for the Imperial.

COMMITTEE FOR RAILROAD CONFERENCE

Pursuant to a resolution passed at the Fresno convention to the effect "that the director of agriculture for California appoint a committee, consisting of the executive heads of California marketing organizations in the fruit and vegetable industry, who shall be sent to Chicago in January to arrange with the railroads regarding 1921 refrigerator car service, so that it will facilitate rapid delivery, unloading and return of cars used in the transportation of California perishables, the following committee has been appointed by Director Hecke:

The committee consists of Charles E. Virden, chairman, president Virden Packing Company, chairman board of directors California Fruit Distributors; G. Harold Powell, general manager California Fruit Growers Exchange; J. L. Nagle, general manager California Fruit Exchange; Thomas O'Neil, president California Vegetable Union; Chas. M. Bentley, vice-president and sales manager California Packing Corporation; E. V. Foley, Fresno; J. M. Garcia, San Francisco; W. H. Stewart, president Stewart Fruit Company; A. B. Humphrey, Mayhew.

The resolution provides for a conference with the operating executives of the various railroads and their connecting lines, handling California perishables. It is hoped to secure regulations which will secure the unloading of all refrigerator cars within 72 hours after arrival, thus facilitating the movement of California perishables.

AN AVOCADO PEST

Wilson Popenoe found the worst avocado pest in Guatemala to be a small beetle of the curculio tribe infesting ripe fruits on the market. There is no external evidence of its presence but if an infested fruit is cut open the seed is found to be perforated by the larva. In some fruits examined the seeds were so greatly altered by the larva as to be practically sawdust. It is evident that fruit so attacked are useless. Luckily none of these beetles seem to have reached the United States.

TUOLUMNE COUNTY BEAUTIES

Horticultural Commissioner Sherard of Tuolumne County writes that the six plates of Tuolumne apples sent to the University of California to compete in the show conducted by the students in horticulture all took prizes.

We have had some Tuolumne County King Davids and know them to be the most magnificently colored and flavored apples we have ever tested. F. J. Ralph was winner of the King David and Winesap firsts and also took second on Delicious, and A. A. Beale took third on Rome Beauties. There were 1,000 plates of apples exhibited from various parts of California.

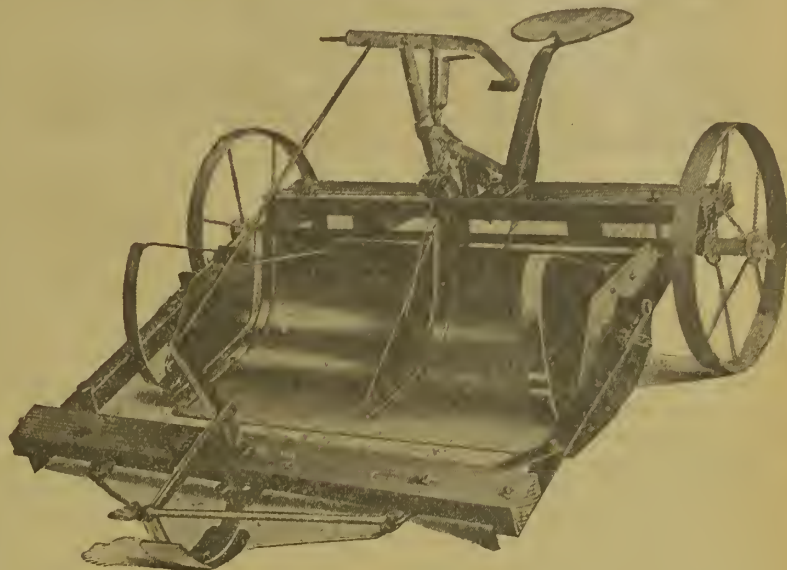
Surveyor General W. S. Kingsbury announces that on December 22 he will offer for sale 24,824 acres of state school lands in Mono County. The sale will be made in the Union League Building, Los Angeles, at 10:00 o'clock. The proceeds of the sale will go to the school fund. Anyone interested in the sale of this Mono County school ground should write to the surveyor general at Sacramento for further information.

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Beet Growers Organize

The first steps toward permanent organization of the California Beet Growers Association were taken at Santa Ana on December 4, when a considerable acreage was signed for, to provide financial support. The agreement provides for an entrance fee of 50 cents an acre and a maintenance fee of 12½ cents an acre. A sufficient acreage was represented to insure a permanent organization, to be effected in the near future.

D. G. Goodwin of Huntington Park presided and G. A. Knapp of Garden Grove acted as secretary, being chairman and secretary, respectively, of the official committee elected to perfect the association. Farm Adviser Wahlberg of Orange County was the first speaker and presented the need of organization and the advantages which have followed other agricultural groups banded together. Even the provision and handling of labor would alone warrant the expense, for one grower was found who had paid \$3.75 per ton for topping beets. Jas. P. Britt, deputy state market director for Southern California, spoke of the great advantages derived through organization by the lettuce growers of Imperial and Coachella Valleys. M. Chumel of Tustin told of the experiences of the beet growers of Delta, Utah, who were offered \$10 a ton flat for their beets

and were advised against acceptance by the farm bureau. The next week the bureau perfected an organization and obtained a minimum flat rate of \$12 a ton with a sliding scale amendment.

G. B. Daniels, state market director, made a strong plea for organization and quoted statistics to show how numerous bodies obtained better prices as a whole than any individual grower had obtained previously. One local organization referred to was the Los Angeles poultrymen. They were at the mercy of the large buyers, with deplorable results. Now the New York buyers flock to them, buy and pay for poultry on the spot and without examination of same, all accomplished through proper organization. "Find out, collectively, what you should have for your crop. The individual cannot do it, cannot afford investigation by an expert. As a unit you can." He promised all the aid his office could legally extend to the new organization.

The committee in charge will now hold meetings in every beet growing district of the South within a week or two, to culminate in one big central meeting to elect officers, adopt constitution, by-laws, etc. It is believed that 20,000 local acres may be signed for by the New Year and that a like acreage from farther north will soon be added.—E. B.

CROP INSURANCE

(Continued from Page 759.)

considered so great by officials of the association that a special insurance department has been organized and placed in charge of Frank Schofield, a practical insurance man. There has as yet been no effort whatever at making this a mutual plan insurance. An old line company has been chosen. As a foundation the base sweatbox price has prevailed. The grower must carry the first 15 per cent of his loss, that is, if the sweatbox price is \$300 per ton and the fruit is injured only to the extent of \$45 per ton, the grower can recover none of this loss, but if the loss amounts to, say, \$100 per ton, then he collects \$55 on each ton which was damaged. Presumably this is a provision insisted upon by the insurance people in order to insure greatest effort on the part of the insurer to protect his crop when there is danger of loss.

The cost of this insurance is two per cent in the case of Thompson Seedless and 2¼ with Muscats. This difference is because of the fact that Thompsons being an earlier grape dry more quickly and are sooner removed from possibility of weather injury.

The matter of the cost of the insurance, the percentage of the loss to be paid and many other features are yet to be worked out. It is a new field with no precedents to turn to. The movement has not been so generally accepted in the San Joaquin as in the Sacramento Valley where the probability of rain is greater. In order to be entirely safe one provision is made which it appeals to us is hardly fair and will probably be somewhat changed, and that is this, that where, say, a half the crop of any one grower has been harvested and the other half is seriously damaged by rain the 15 per cent which it is insisted that the grower carry covers the entire crop, both the harvested and yet-on-the-tray portion. That is, if \$1,000 worth of fruit is out and suffers 100 per cent loss, the 15 per cent is deducted from both the \$1,000 worth of fruit which is lost and from the \$1,000 which had been harvested, or a total of \$300 charged up to the grower and \$700 only paid to him. At first spreading on paper was not permitted, but at present where 80 per cent of the fruit is on trays 20 per cent may be spread on paper.

Table grape growers are likewise considering the possibilities of this insurance. Growers of other fruits and crops are constantly inquiring, and we believe it is a safety first step which may come into more general use and perhaps save many a grower from complete ruin in time of these heavy losses.

Whether it can be worked cooperatively, as fire insurance is so successfully now, is, perhaps, a question.

Nor is California alone in this matter of crop insurance. New York state potato growers are testing it out. We note in a recent Rural New Yorker the following:

"A number of our readers have been interested in reports of insurance for the potato crop. Several of them want to know if they can insure their next year's crop at once. We have obtained a statement from the insurance company which did most of this work last year. They tell us that most of their insurance was written in the South. The rates have varied all the way from three per cent to 12 per cent, depending on the risk involved. That risk would be determined by the locality, the liability to frost or disease and the general character of the potato grower. In the district of northern New Jersey, or near New York City, an allowance of \$200 per acre was permitted. In some of the farm districts of Maine \$250 per acre was given. This insurance guarantees a certain income from an acre of potatoes, and under the conditions the grower contracts to perform his work in a certain way. He must use high class seed, and use a certain amount of high grade fertilizer. The soil must be in a first class condition and cultivated properly. As part of his contract, the grower agrees to do these things, and he would naturally forfeit his interest if he did not live up to the contract.

"Last spring the insurance was figured on the basis of a high potato price. After the slump this fall it is

likely that the insurance companies will meet some heavy losses. Last spring many of the growers felt that the six per cent premium was too large. As prices have turned out it is evident that the insurance companies did not make any money at such a premium. The company is not ready now to insure for next year. It is probable, however, that when spring comes they will be prepared to insure the crop in much the same way. They may make a change in the method of figuring the income from an acre. In some speculative crops their offer would probably be to insure a certain yield at a stated figure, rather than to insure a certain amount of income. Naturally it will be impossible to figure out the risk properly until later in the season, when the prices of seed, fertilizer and implements can be worked out.

"It is evident that this plan of insuring crops is to develop. This insurance acts both as a protection and credit. If the farmer can insure his crop with a reliable company he is reasonably sure of a certain income from that crop, and with such insurance he would be more likely to obtain fair credit from a bank or money lender than he otherwise would be. Sometimes this is a matter that must be figured out with great care, so as to make a fair proposition for both sides. We have asked the insurance company if they would be willing to grant insurance on an outfit of fruit trees. Can we make arrangements to insure against misfits from the nursery? This matter has been up several times in the past, but formerly insurance companies were not disposed to take hold of it. Now that the potato crop is being insured, they feel that it might be possible to work out some protection for the fruit grower. It would mean considerable risk and a long time investment, as it might be some years before the trees could come in bearing to prove whether they were true or not. We think it likely that in the future farm insurance of this sort will be worked out. In such a case the character of the nurseryman would have to be considered, and some form of guarantee on his part would be demanded. This side of the business, however, is developing, and there seems no reason why in the future the farmer should not be able to insure his growing crop in much the same way as a merchant can insure his stock of goods."

POSSIBLE QUARANTINE OF POTATOES

Oregon potato growers, or at least her state board of horticulture, do not relish possible introduction of tuber moth. The tuber moth has been in a very few sections of California for many years and has not been a serious pest, and the potato growing industry has increased in spite of any such handicap. However, none of our growers can blame a state for taking any precaution which may prove of help in keeping out such a pest. To that end California growers and horticultural commissioners have taken greatest care in exporting pest free products. The Oregon state board of horticulture now calls for a conference as to the best steps to take in keeping her state free from the pest. The public hearing will be at 10 o'clock, December 14, at Salem, Oregon. Director Hecke is giving information as to this meeting in order that California growers may be present should they so desire.

STEAM COOKED PEANUTS

A recent issue of the Journal of the American Medical Association states: "When fed to healthy young men, steam cooked peanuts were found to be well utilized, the carbohydrates in the entire diet in which legumes formed a prominent part being 99 per cent digested in the case of the peanuts. The average digestibility of the peanut protein was 92.8 per cent.

"The fact that large quantities of peanuts were consumed daily for three successive days without causing any physiological disturbances indicates that this food cooked for two hours by steam at 15 pounds pressure is well tolerated by the human body. It is concluded that peanuts are specially valuable for human food as compared with other legumes which have been studied with the same thoroughness."

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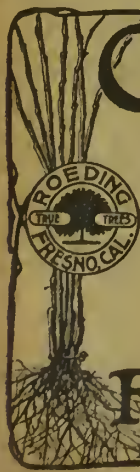
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Luxury Tax

A suit of underwear cost \$7.50. The clerk required an additional payment of 25 cents tax. Was this legal?—Subscriber, Red Bluff.

Under the federal internal revenue act it is provided that after May 1, 1919, there be collected and paid a tax equivalent to ten per cent of the amount paid in excess of \$5 each upon underwear.

Wife's Property

Is the wife's second husband entitled to mortgage the wife's cattle which the first husband's children gave her? May the wife sell such cattle?—Subscriber, Jamestown.

These cattle were a part of the wife's separate estate by reason of the gift made of them and the wife is the sole owner. She may, therefore, sell or mortgage them without the signature of the husband and the husband is not entitled to either sell or mortgage any of them.

Olographic Will

If I write my will in my own handwriting, dated when and where written, sign it in my own writing, and have no witnesses thereto, is such a will legal?—Subscriber, Sierra Madre.

Such will is known as an olographic will and is entirely legal. Care should be taken that the date is written in full and not by figures.

Deed Instead of Will

If I make a deed to certain property and deliver this deed to my agent or to the person to whom the property is deeded and I die before the deed is recorded, will such a deed convey the title to the property?—Subscriber, Sierra Madre.

If deed is properly executed and delivered to the grantee it will convey the title to the property even though it is not recorded, but if it is delivered to the agent of the grantor so that the grantor possesses any right to withdraw, such deed is not a delivery of the deed and the conveyance will be invalid.

Separate Property

The husband loans money, which is his own property; note evidencing loan and mortgage to secure it made to himself and wife. Is this community property or partnership property?—Subscriber, Sierra Madre.

In such case, by reason of the instrument reciting the names of both husband and wife as payees, a presumption might arise that each have an undivided interest in the money by reason of a presumed gift, or it may be deemed that the husband intended to mingle his separate estate together with the community estate and transform it into community property. The circumstances and facts of each particular case would govern in the matter and it is possible that no change whatever in the character of the separate property would be worked.

Assessment in Irrigation District

Is there any statute defining the mode of assessment of land in an irrigation district for the raising of taxes in the district? Can land be assessed at different values depending on its location with relation to any given city or must all land be taxed alike?—Subscriber, Oakdale.

The general irrigation district act provides that the assessor of the dis-

trict between the first Monday of March and the first Monday of June of each year must assess all real estate in the district at its full cash value, with the exception that the improvements are exempt from taxation of the district, the word "improvements" including trees, crops, buildings, or structures. In case the district assessor fails to perform his duties, then the assessment made by the county assessor of the county wherein the property is situated shall be taken as the basis of assessment for the district and the board of supervisors shall upon such basis cause the assessment roll and tax levy to be made. As land ordinarily differs in its valuation in accordance with its proximity to markets, it is probable the injunction of the law to assess at its full cash value would necessitate higher values on land located near a market place than that which is remote therefrom.

Lease of Rice Land

I leased land for raising rice from 1916 to 1919. The lease provides that the lessee will remove all willows, water grass and tules. Failing to do so, the lessor at the expense of the lessee may remove such growth. The weeds were not removed during the term of the lease. Has the lessor a right for an action of damages?—Subscriber, Santa Maria.

It will probably be necessary to examine the lease as a whole to determine just whether or not the lessor would have such action, but it is very probable he would be entitled to his damages for the cost and expense of clearing the land of the weeds together with such damage as he could show that the land had suffered by reason of such weeds being permitted to develop thereon.

Community Property

Twenty-five years ago my husband and I were married and since that time have acquired some property and a business. I have inherited some money and have placed this in the business. As time has passed my husband has developed a very high temper. Can I go and come from home at any time? Could he sell the place or any of the stock and do I have the same right as a partner in property and as such could I sell the place and stock?—Subscriber, Bloomville.

Except as to the property which you have inherited, the business and other property is community. Of such property the husband has the management and control, with absolute power of disposition as of his separate estate, provided that he cannot dispose of it without a valuable consideration; he cannot sell, convey, or incur the furniture, furnishings, or fittings of the home without the written consent of the wife. The wife would not have the right to dispose of the community personal property such as has the husband. As to the real property, the sale or incumbrance thereof cannot be made without the signature of both husband and wife unless the title stands in the name of the husband and such disposition is made to an innocent purchaser without knowledge of the marriage relation. In any case, action must be taken by the wife in one year from the recording of the instrument in order to set it aside. The relations of community property of husband and wife are entirely different from the legal relation of partnership, and in order to have the rights of a partner it would be necessary to show that there was an actual contract of partnership, the presumption being there is not in the case of husband and wife.

Annual of Farm Bureau

Los Angeles County's farm bureau now numbers over 2,200 regular members. The dues still stand at \$1, but in order to meet the demands of the state association and the national federation an assessment of \$1.50 has been made. Officers elected for the coming year are: President, Robert H. Neely; first vice president, Harry S. Bissell; second vice president, Dr. J. B. Biller; secretary, W. S. Rosecrans; treasurer, Ralph McNees. Other directors are Volney H. Craig, J. B. Vaile and Dr. Geo. P. Clements. Representative to the state federation, Volney H. Craig.

The recent annual meeting was held in the grounds of Santa Anita Rancho, less than a dozen miles from Los Angeles. The principal features were an address by B. H. Crocherson, director of agricultural extension of the university, and the regular annual by retiring President J. B. Vaile. President Vaile has just returned from tour of the East, especially a visit to the farm bureau headquarters at Washington, D. C. Experiences of his visit and methods followed by many of the Eastern farm bureaus made his address one of particular value to the California counties.

The afternoon program was largely given up to demonstrations of characteristic extension service-farm bureau activities. To give an idea of the livestock work a visit was made to the Santa Anita dairy barns where demonstrations were given in testing milk, the actual testing being shown by cow testers who are now handling the farm bureau test of 3,500 cows monthly. Another feature of the day was the awarding of medals for the first five months of the dairy cow competition. This competition will be continued until June 30, a number of medals being awarded meantime, and at the completion of the competition awards will be

made of a large number of silver cups. Then there were pruning and other demonstrations, making the day one of great value to the members as well as one of recreation and pleasure. The noon luncheon was under Santa Anita's great oaks.

The potato growers department of the farm bureau is becoming one of great value. T. H. Lambert is director of the department and he had made a call for a gathering at the annual meeting of all the potato growers. The attendance was liberal, and the following program was laid down for 1921: 1, membership campaign, the members to be increased because of the need for the moral force of a large membership and the support to the movements outlined below. 2, test potato plots, that is, working with the farm adviser and experts of the university in the matter of better varieties, fertilizer plots, i. e., determining as to whether commercial fertilizers yield results justifying their application. It is desired that more exact check shall be made on cost of fertilizing and returns secured. Connected with this will be a campaign to induce more liberal planting of cover or green manure crops. Another feature of the campaign will be seed selection, including certification and use of only highest grade hill selected seed. 3, standardization, and marketing methods to be improved. To secure best results in this division of the work a series of night meetings is to be arranged, with discussions as to what the California standard shall include, or as to whether U. S. No. 1 shall be adopted. 4, continuation of spring and fall crop observation tours.

One feature of the morning session was the annual meeting of the home department. This meeting was in charge of Director at Large Mrs. J. L. Colwell, with Mrs. L. D. Doan as county chairman. This department is especially active and has prepared a program for the next year which will add materially to the strength of the county organization.



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Questions and Answers

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Cottonwood Windbreak

I am considering cottonwood for a windbreak across my 120 acres. Please answer the following. Do cottonwoods encourage aphids? How can male and female trees be told after the lint or cotton is gone? Are there any objections to planting cottonwood in California? Which grows the fastest, cottonwood or balm of Gilead? Which requires the most water?—Subscriber, Lathrop.

So far as we know cottonwoods do not encourage aphids. The male and female cannot be told apart when not in bloom or seed. In proper season the males should be marked and cuttings taken from them as the "cotton" clusters about the seeds. There are no objections, legal or otherwise, to the planting of cottonwoods. The growth of both cottonwood and balm of Gilead are rapid and both depend on water supply. The "balm" is the handsomer tree and is male only, so produces no cotton. It is a garden hybrid and not a wild species. All are easily grown in any size of cuttings, from twigs to fence posts.

Butter Coloring

Could you give me a recipe for making a good butter coloring at home? An eight ounce bottle costs us \$1.35 at the store and I think they make it and put it in plain bottles and label with a lead pencil. The same bottle used to be 50 cents.—Subscriber, Chlco.

Have any of our subscribers any suggestions along this line? We note in Lippincott's "Productive Dairying": "Coloring the butter is accomplished by adding the liquid color to the cream immediately before starting to churn. The quantity used will vary with the breed of cattle, the feed that they are consuming and the market to which the butter is to be shipped. Generally speaking, one cubic centimeter of color for every pound of butter fat in the cream, or one teaspoon for every gallon of cream will be found abundant. Some colors are stronger than others and care must be exercised to not use too much. The market requirements should also be studied. The color used is the outer portion of the seed of the annatto plant which grows in the South Sea Islands and South America. The color is incorporated mechanically in cottonseed oil as a carrier. When used, the added color accompanies the oil and is made to surround the many globules of fat. Butter color is used for the purpose of maintaining a reasonable degree of uniformity in color throughout the entire year or, in other words, to make butter look like butter, the year round, not like butter in summer and lard in winter."

Woolly Aphids

Please tell me what is the matter with apple tree that has white growth on limbs that looks like cotton? Is there any spray to use and if so when?—Subscriber, Orange.

This is doubtless woolly aphids, one of the most serious pests of the apple. Essig's "Injurious and Beneficial Insects" says: "To the average orchardist this insect is of too common occurrence to need any suggestions for its identification. The dark red or purplish louse covered with the long white cottony wax or flocculence is the most serious apple pest in many of the northern counties. The winged forms are distinguishable by their dusky protruding wings. The fall and early winter lice are dark yellowish or brown in color." The portion of the pest which is seen on the trunks of trees is only an indication of its worst form which is working on the roots. At this period of the year especially their worst work is being done underneath the surface of the ground. They are known to have followed down the roots to a depth of ten inches in the ground. For this some remove the earth to a depth of six or seven inches and out from the trunk of the trees two or three feet and

sprinkle the roots and ground with liberal application of a spray made up of water and 40 per cent nicotine sulphate. Proportions are given on the package, but they are approximately about one ounce to four gallons. As soon as liquid has soaked in fill up the basin. The best spray for the form which is on the trunk of the tree is nicotine sulphate three-fourths ounce, ordinary laundry soap four ounces, water four gallons. Dissolve soap in hot or boiling water and add the nicotine.

Winter Pasture for Pigs

What could be planted now that would make a good winter pasture for pigs? I was thinking of barley or clover. Would clover get large enough for pasture if planted now? Is it too late to plant alfalfa, and if not, how late can it be planted?—Subscriber, Strathmore.

It is rather too late to get best of success with sweet clover, alfalfa or the vetches. This late we believe we would plant rape which would give the quickest return when ground is as cold as it is now. This is a winter grower and is especially fine for pigs. Second choice would be a good stock beet. They will be ready to feed to pigs in about three months but would not afford the immediate pasture which would be given by the rape. Any good stock beet will answer but one known as Half Sugar is highly recommended. Excepting in protected section near the coast or at least where conditions are generally warm and there is no danger from frost, there will be more chance with the clovers or alfalfa. Alfalfa may be planted in February or March according to lateness of spring frosts.

Fruits in Family Orchard

Kindly give me a list of about 100 trees of mixed fruits that would make a good family orchard; fruits good for eating as well as canning. This orchard is to be planted at Atascadero, San Luis Obispo County, on gently sloping ground.—Subscriber, Byron.

This is a matter of personal, or rather family, taste. For instance, if the one who is endeavoring to answer this question should have the choosing of such an orchard for his own use the fruits set would nearly all be of some variety of peaches. This might not be at all satisfactory to the family which is asking the above question. Therefore we would suggest an "evening session" with a bunch of nursery catalogs. Some of the very best nurserymen on the Pacific Coast are carrying their ads in the columns of the Cultivator. A post card request to any of these or perhaps all of them will result in a copy of their annual catalog. Then we would start, say, with peaches, beginning with Briggs Red May and the description of that would probably be something like this: "Greenish white, with red cheek; flesh white. Recognized market variety. Ripens middle of June." It is very probable that we would recall that this peach is not of very high quality. It is rather watery, not exceptionally sweet and yet "middle of June" would mean quite an early peach so if we wished the peaches to cover the season we might try one or two trees of this variety. Amongst other early ones there is the Alexander, a larger peach said to be a standard shipping sort, and another is the Admiral Dewey, or sometimes called Triumph. Then there is the Early Imperial, the Mayflower and the Greensboro, "among the earliest and largest. A wonderfully vigorous grower. Ripens May 1." This seems most too good to be true but would plant at least one of that variety. Then come the July ripeners, including the Australian Sauter, Blood Cling, Foster, Elberta, Hale's Early, Muir, and Tuscan Cling. Amongst the August ripeners are some of the best canners, and with the Elberta, Foster and other better July peaches will make the bulk of the freestone canners. Some of the August ripening varieties are Crosby, Late Crawford, Lovell ("leads all other clear yellow freestones"), McDevitt's Cling, McKevitt's Cling, Philip's Cling, Sellers' Orange Cling,

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Slm's Cling. Then amongst the September and even October ripening varieties are the George's Late Cling, Heath Cling, Levey's Late, Picquet's Late and Salway. Of the above one could vary to suit his taste but as a personal suggestion the writer would want but few, if any, of the cling peaches where they are planted for home use. Others might plant even a greater number of the clings than they would of the freestones. Then one would want a half a dozen or more of plums, a few nut trees, especially almond which should do well in the San Luis Obispo County section, probably a few summer or early fall apples, several Bartlett pear trees, at least two or three apricots, two or three figs, a couple of rows of small fruits, a nectarine or two, a few olives, and if one likes persimmons two or three varieties of that fruit.

Naturally every California orchard will want citrus fruits. Of these there might be a dozen, or even a hundred and have no two trees of the same variety. If locality permits avocados should be planted, but even to give a list of all other sub-tropical plants which would add to the joy and comfort of the family would take another column.

Birds in Enclosure

A subscriber recently asked as to keeping pheasants or other birds and breeding to supply the table or for disposal in market. The question was referred to the state fish and game commission which answers:

The game laws provide for the raising of game birds in captivity under what is known as a game breeders license, for which the annual fee is \$2.50. These licenses are issued to all applicants in good faith who can comply with the simple requirements of the law. The requirement is that the preserve must be wholly enclosed, and this anyone penning up birds automatically complies with. Breeding stock can be obtained from licensed game breeders. On or before the first day of January of each year every person having license shall make report to the fish and game commission as to number of game birds or mammals killed, sold or transported.

Cultivate Morning Glory

There are chemicals which will kill weeds, and it is possible that the chemical may yet be found which will do this work and not ruin the soil for other crops. However, as yet it appears that the cultivator and the hoe afford the safest and most economical means of disposal of this weed. We recently referred to the campaign conducted by Ventura County, which called forth the query as to the method, so we wrote County Commissioner H. H. Call regarding methods and he writes:

"Relative to control of morning glory in Ventura County would say that we have carried on numerous experiments with chemicals, principally sodium arsenite. At times we have had fair success with this chemical under very favorable weather and soil conditions, but the best method of control of this pest is clean cultivation. This is hardly practical on a large area, but on small areas running over the ground with either a weed knife or cyclone every five days for a period of two years, cutting the weed at least two inches under the ground, will completely eradicate this pest. Unless this system is systematically followed up the weed can not be cleaned up."

Leaking Milk

A question was asked in recent Cultivator as to how to prevent leaking of milk from cow's udder. A. C. Pickett of Riverside writes: "Try small rubber bands around the teats."

This sounds as if it might mean much discomfort to the cow, but we take it this calls for use of judgment in not having the bands too tight.

Does Eucalyptus Improve Soil?

In a recent issue of your paper a subscriber from San Diego inquires about the best method of restoring soil that had been occupied by eucalyptus trees. The soil needs no restoration as the trees have taken nothing from the soil but rather added

to its fertility. Forests never impoverish the soil. Some years ago I pulled out eucalyptus trees 30 years old and planted apricots in their place the same season. The trees are larger and healthier there than those on the same kind of soil, right alongside, where nothing had been grown before. —T. O. Thompson.

Perhaps Mr. Thompson is right. We would prefer to give thorough fertilization and preparation of such soil. Of course when deciduous forest trees have deposited their leaves for centuries a soil filled with humus is produced and it is wonderfully productive. Naturally, the large roots have opened up air passages to lower levels and aeration has proved beneficial. In any case those apricot trees talk louder than we can.

Lippia Turns Brown

Last April we planted some lippia for a lawn. It grew nicely until the cold weather set in, and now it is dying out in places. The soil is a sandy loam and it has been irrigated freely. Would ground bone meal help any? If not, what can I do to save it?—Subscriber, Del Mar.

We think this is merely a case of cold weather. Lippia does best and keeps greenest in the hotter months.

We imagine that with the coming spring, if not tramped too severely, this lippia will be one mass of bloom and green leaves. Again, it is barely possible it is where it has been tramped severely during the fall months, which has worn it down and given the brownish appearance. However, examine carefully and see if healthful conditions obtain at the roots. Again, it is possible that the dried blossoms of the last season are still there and they will give this brown appearance. Run over the lippia with lawn mower the same as with blue grass.

Berries in General

We have seen so many helpful answers to other people's questions, we are going to try some of our own. We expect to go into the berry raising business on a small scale and would like to find out which is the best variety of blackberry, logan, raspberry, gooseberry and strawberry. What can you tell us about the thornless blackberry? Is it a success? Is it set out and cared for the same as common blackberry?—L. S., Dinuba.

While the old and well known Crandall blackberry is still extensively planted, the Mammoth strains are growing in popularity and of these Corey's Thornless is the strongest

favorite. It requires same care as the others. In some districts Himalaya is the leading variety. In raspberries St. Regis is leading the old standard Cuthbert because of heavy bearing the first year. Both are good. There is but one loganberry, though the Phenomenal is considered a black logan. Gooseberries are an uncertain crop and we advise ascertaining if they thrive in your immediate neighborhood. This is also true as to the better varieties of strawberries. Throughout the state at least a dozen varieties are leaders in their respective districts. Find which one or ones do best in your locality in soil and under conditions similar to those of your ranch.—E. B.

POTATOES "RUNNING OUT"

Exhaustive experiments have been made at the Minnesota experiment station in hill selection of potato varieties that were "running out" with a view to selecting strains resistant to degeneration. The experiments ended in total failure so far as finding resistant strains or even individual hills. High and low yielding hills and tubers gave same results, low yielding hills often giving the better results. After a variety starts to "run out" in a district it is better to discard it and grow some other.

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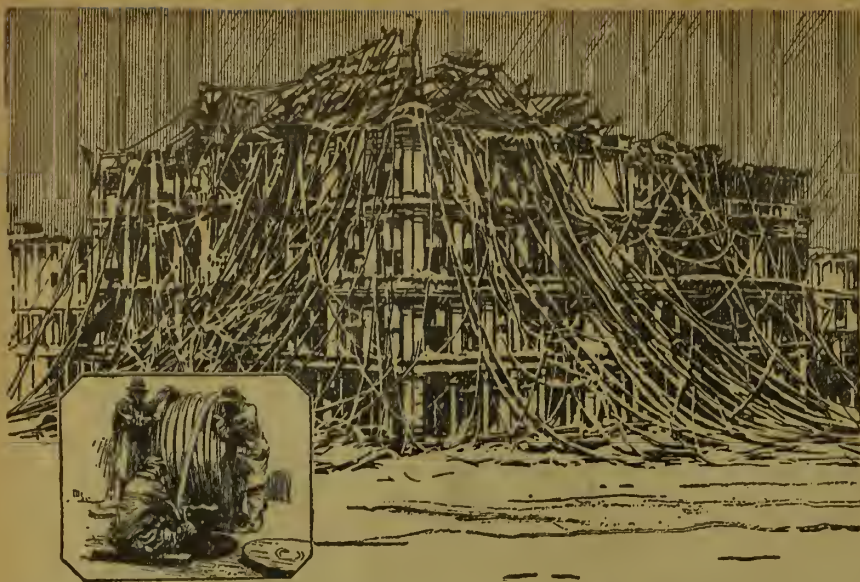
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Household Department

HOW HE DIED

So he died for his faith. That is fine,
More than most of us do.
But stay, can you add to that line
That he lived for it, too?

It is easy to die. Men have died
For a wish or a whim—
For bravado or passion or pride.
Was it harder for him?

But to live: Every day to live out
All the truth that he dreamt,
While his friends met his conduct with
doubt,
And the world with contempt.

Was it thus that he plodded ahead,
Never turning aside?
Then we'll talk of the life that he led—
Never mind how he died.
—Author Unidentified.

THE RENUNCIATION OF CLAIRE

By Margaret A. Condon

(Concluded.)

"Oh, Peter! Just think of it. That wonderful bungalow with all furnishings complete, and on the lot adjoining our property, for only five thousand dollars. There's no telling what kind of neighbors we'll have there now," Claire interjected mournfully, "and I never wanted anything in my life as I want that house. Peter, could we—do you think we could possibly manage it?"

Peter shook his head dolefully.

"I'd love to do it for you, Dearie," he said, "but I don't see how we can just now. It would never do to use every cent of our cash in bank, Claire. What would we do in case of illness? I'm afraid, honey, we'll have to practice patience a little while longer and be content with our shack until we can afford to build a house ourselves."

Tears welled up in Claire's eyes.

"I feel that you're right, Peter," she said, "but it is hard for the want of a little money to see that wonderful house go to others. It just seems built for us. It's just what I want—furniture, rugs, everything."

"It's awfully hard to refuse you, Claire, but keep up your courage. Some day we'll build one just like it."

He drew the grieving Claire close and touched her bright hair with his lips, then stooped to rub "Johnny-jump-up's" silky back the wrong way for an instant, and thus dismissing the subject, Peter went back to his work.

But not so Claire. With her it was an obsession. She looked about her shabby little house that barely sufficed to shelter them. She forgot the great out of doors, the flowers, the grove, everything that had given her pleasure, and her mind could only grasp the fact that sooner or later someone would become owner of the house she wanted. It would stand provokingly under her eyes all day, but she must resign herself to renounce it. While Claire did not again refer to the subject, her former pleasure in her environment seemed to have disappeared. Peter noted that she was pale and listless and was concerned to see that her enjoyment of their country life and surroundings, which had been such an optimistic and encouraging note for him, was no longer apparent.

"Peter," Claire began one day at luncheon, "I had a letter from Florence today. George is doing well in his business and they have moved into a new house. She wants me to make them a visit—says they have a room ready for me—but I don't want to go and leave you alone, Peter. If we didn't have the ranch you would be free to come too, and have a good visit in town," and she looked around disparagingly.

"If we didn't have the ranch!" Peter echoed in amazement. "Why, what do you mean, Claire? Are you sorry we have the ranch? You know what it means to me, and I hoped it meant as much to you."

"I think things are getting on my nerves, Peter," Claire said wearily. "I want a room large enough to move around in. I want some of the things we were used to in the city. I'm tired of trees and fruit and crops and irrigating ditches and—everything." Claire finished lamely. "I'm tired of everything here but you and 'Johnny-jump-up.'"

Peter looked at her gravely, and his big warm heart sank, but he was gifted with wise judgment and his love for Claire made him see clearly.

"I think you're a bit lonely and not

feeling up to the mark, Claire," he said at length. You need change of scene. Write your sister today that you are coming to make her a visit. Johnny and I will manage to get along for a few weeks. You'll come back with a different viewpoint and appreciate us and the ranch all the more," he added, smiling rather wistfully at the girl.

"I appreciate you now, Peter dear; I couldn't appreciate you more. I'm just out of sorts, discouraged, that's all. I believe I will write to Florence today and tell her I'm coming for a taste of city life."

The afternoon wore on, and Claire—somewhat enthused at the prospect of seeing again her old friends and associates, was about to begin her letter when she heard voices outside, and going to the window saw Peter in earnest conversation with a gray haired man whose motor car was waiting for him at the gate.

"I have taken a liking to the place," she heard him say, and I am willing to pay your price if you will name it. No, I don't want the next house and lot. I want the grove, so that I can build my own house. Your property being on a corner gives me the opportunity to have an entrance on the side, since a street will soon be opened up there. Will you name the figure at which you will sell the grove?"

Peter's back was toward Claire, and she could not hear his reply, but the two men walked over in the direction of the grove, while she stood incapable of motion, a cold feeling about her heart, her knees trembling. "Sell the grove?" She could not understand the evidence of her senses. What did it mean? Sell their beautiful grove, the background of their little ranch. What could Peter be thinking of? It was unbelievable. Then it flashed into Claire's mind that he was doing it for her. Had she not told him she wanted the new house more than anything in the world? It was all her fault. He was going to use the money to buy the house. Things seemed whirling before Claire's eyes as she made her way to the door. She wanted to tell Peter he must not, should not, make the sale. As she opened the door the stranger was driving away, and Claire threw herself upon Peter as he came up the walk.

"Oh, Peter, Peter!" she cried. "What does it mean? I heard him ask you to make a price on the grove. Oh, what have you done? Are you going to sell our beautiful grove?"

"Not unless you wish it, Claire," Peter returned, and there was a suspicion of a twinkle in his kind eyes. Placing an arm about the excited Claire and guiding her into the house, he continued:

"You told me not long ago, Claire, that you wanted the new house more than anything in the world, and I wanted to buy it for you. This man is willing to pay a good price, and if we sell the grove we can at once take over the other place and still have that portion of the ranch which is under cultivation."

"But, Peter, I don't want the other place at the cost of our lovely grove. I wouldn't lose that for anything. Why, Peter—" and Claire was on the verge of tears now—"God made the grove and man made the house. We can build another house, but we could never, never find another grove like this."

Peter actually grinned. Most exasperating of him, Claire thought, but he maintained silence, and she went on.

"I know you think I'm inconsistent, Peter, but I can't help it. And I'm not going to the city, either. I'm going to stay right here and look after you. Why, you might sell the entire ranch if I were not here. There's no telling what you might do. I'm surprised at you, Peter."

"I was only trying to carry out your wish, Claire, to buy the house. You surely wanted it. Do you think now that you really prefer the grove?"

"Of course I do, you silly boy. You know I would like to have the house," and she cast a look of renunciation in its direction, "but never, never at the sacrifice of the grove. Our little house will do nicely until we can build a better one. I have you, Peter, and

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California Cultivator,
Los Angeles

'Johnny-jump-up,' and the grove. What have you told the man who wanted to buy it?" she asked suddenly.

"I'm to give him an answer when he comes tomorrow morning. He'll be greatly disappointed. I'll tell him you cannot consent to part with your grove."

And so it was settled. Claire, having made her renunciation of the bungalow in favor of the grove, was once more her old self, with reawakened interest in her surroundings. Her heart almost stopped beating when she recalled the awful possibility of what might have happened, and her little home was more precious than ever.

That night Peter and Claire sat on the little porch and watched the crimson glow fade from the sky. Then one by one the stars came out, and a half moon rose in the east and looked down upon them. Back in the grove the mockingbirds trilled their evensong and from the distance came the plaintive dual cry of an owl.

"How wonderful it all is, Peter," Claire said softly, and contentment was in their hearts.

Suddenly, Peter spoke.

"We'll probably be able to build next year, Claire," he said, and we'll model our house after the one next door. Perhaps," he added laughingly, "that long drawn out litigation over my Uncle Jack's estate will be finished some day and one-fifth of it will come to me. Then we'll—"

"Oh, Peter," Claire cried excitedly, "a letter came for you this afternoon and I forgot all about it. It's from a law firm in Boston, and I'll bet it's about your legacy. Come quickly and we'll see."

Claire dashed into the house, followed by Peter, who opened the letter, read it quickly, and said, while the color mounted into his face and his eyes shone with enthusiasm:

"You win, Claire. The letter is from the attorneys. The estate is settled and my legacy of ten thousand dollars is at my disposition."

For a moment there was dead silence. Claire was too overcome to speak. Then Peter continued:

"The bungalow is yours, Claire. I'll buy it in your name. We'll go in tomorrow to see the agent and close the transaction. Hurrah! Claire you get your wish and keep the grove," and he bent and kissed her.

Claire's eyes were shining, her cheeks glowing, as she nestled close to Peter, and he asked:

"Happy, Claire?"

"Happy!" the girl replied. "I'm so happy I'm afraid I'll wake up and find it all a dream."

One soft arm went round his neck, and she whispered:

"How glad I am I didn't go to the city! And isn't everything wonderful, Peter. 'God's in His Heaven: All's right with the world.'"

CHICKEN TAMALES

Scald one quart white corn meal, not soft, but moist. Have ready corn husks and several torn into narrow strips like ribbons. Have thoroughly cooked and chopped fine a good-sized chicken; add to it a Spanish pepper chopped fine, a small onion and sufficient salt to season. Dampen corn husks, straighten them out, put down the center a strip of the corn meal about three inches wide and six inches long. Put in two tablespoons chopped chicken, then roll husks and corn meal over, making a roll with chicken inside. Fold ends of husks in and tie carefully with prepared strips. Put chicken bones in bottom of kettle to form a rack, keeping tamales from being covered with water. Add three or four cloves, a bay leaf or two, a teaspoon salt and one-quarter teaspoon pepper. Cover with cold water and boil continuously two hours.

Tamales Spanish

Three dozen ears green corn, with husks, one boiled chicken, 12 chile peppers (seeds removed) 1 quart stoned olives, two pounds seedless raisins, two cups lard, salt to season. Scrape corn from cob, mix with chicken and other ingredients, all chopped moderately fine. Divide in two dozen small portions and tie up in husks. Steam for one hour.

Beef Tamales

Boil one pound of beef and pour over it some hot beef fat. Scald thoroughly one quart corn meal, adding

one teaspoon salt and a tablespoon lard. Cup off the upper end of corn shucks and put to boil in cold water; let scalded meal and shucks cool off; chop the beef fine and season to taste with salt and chili powder. Put a thin layer of meal on shucks (leaving shuck enough to turn ends and sides under); then put a small quantity of meat in center. Put a few shucks in bottom of pot to prevent scorching

and pack in the tamales, placing a weight on top. Cover with boiling water, adding one tablespoon each of lard and chili powder. Steam two hours.

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HOUSEHOLD QUERIES

Home Made Olive Oil

In the Cultivator of November 27 reference was made to directions for making olive oil at home, published in the issue of January 4, 1919. This article was written by W. V. Cruess of the state university. This seems to have aroused much interest, judging from the number of requests received for reprinting. We therefore give the article entire on another page of this issue.

"Mrs. Wilson's Cook Book"

Would you be so kind as to send me information as to how to get or send for "Mrs. Wilson's Cook Book." I would like to own one but have lost address.—Subscriber, Lompoc.

This book is published by J. B. Lippincott Company, Philadelphia. The price is \$2.50 net and postage 24 cents additional. Local book dealers may carry it in stock and their general rule is to prepay postage to within 200 miles.

Sugar Cure for Meat

I see in the last Cultivator of November 27 a recipe for curing meat. I find that four gallons of water will not cover the meat. What am I to do; use clear water or add more brine?—Subscriber, Cloverdale.

It will be necessary to make up more of the brine, mixing all the ingredients in same proportions. For instance, if you think about one-eighth of the quantity given would be sufficient to cover your meat, mix up another lot of brine, dividing all quantities by 8—1 pound salt, ¼ pound brown sugar, ¼ ounce saltpeter, dissolved in 2 quarts water. If you only need half this quantity, divide each again by two; if twice the quantity, multiply. Meat should be kept thoroughly well covered by the brine, so it might be well to note the pieces on top which were not covered, and if they show any signs of spoiling throw them away rather than risk tainting the whole amount.

Candy Dipped Apples

In your paper some time ago I saw how small apples were candied for a party. Now I have a children's party to plan for the holidays and would like to know how to candy apples. Some of your subscribers can probably tell me how I may candy these apples and at the same time keep them raw. All hot candy cooks or partially cooks them, which I do not want. I have lost the paper giving the recipe for same but think you may have it on file, also a recipe of a candy which can be used cold, if that is possible. I do hope to learn of some way to fix these apples to make my party a success.—Subscriber, Salinas.

We do not see how any candy could be used cold for this dipping process, as the quick hardening on cooling gives the brittleness and glaze which makes the dipped apples attractive. However, we would be glad to hear from any who have experience. The usual method is to remove stem and blossom from apples, push wooden skewer firmly down in stem end, boil together sugar with half the amount of water to the "hard crack" stage. Remove from fire, leaving on back of stove to keep warm. Dip the apples in and out instantly. It is not necessary to let the apples remain in the candy. They should be removed immediately and placed in draft to cool quickly. Stand on blossom end on oiled or buttered paper. A spiced red coating may be made by melting in the candy some of the "Cinnamon Hots" beloved of childhood days to color lips and cheeks.

Spanish Herbs

Sometime ago I noticed recipe for cooking beans, using Spanish herbs. Can you tell me what these are and where I can get them?—Subscriber, San Martin.

The use of Spanish herbs was recommended in a recipe for cooking pink beans given by Mrs. Torbert in the Cultivator of April 10, this year. The herbs are oregano, a dried leaf of a plant of the lippia family, and comino (cumin) seed. More of the leafy herb should be used because of

the stronger taste of the comino seed. Most large groceries carry these two seasoning herbs separately and five cents worth of each will last a family for a long time. We have on file names of groceries in Los Angeles and Stockton who carry them, but doubtless large groceries in other centers do as well.

Candying Apples

I recently saw small apples candied whole like the limes and apricots one pays such prices for as confections. Can you tell me how to do it?—Subscriber, Los Angeles.

Puncture small apples, through and through in several places with a silver fork. Cook carefully in water until tender. Avoid breaking skin. Place the cooked fruit in a pan or stoneware crock or other convenient vessel. Prepare syrup of Karo or glucose 1 cup and water 2 cups. Heat this to boiling and pour it on the prepared fruit. Leave 24 hours. After 24 hours pour off the syrup and to each 4 cups add ½ cup of sugar to each 4 cups of syrup, pour back on the fruit. At intervals of 24 hours repeat this process adding ½ cup of sugar to each 4 cups of syrup each time until the syrup becomes very thick and of about the consistency of thick honey. Leave the fruit in this syrup about 1 week. Remove the fruit and drain it. Place it on a coarse wire screen and allow to dry for about 1 week in a room where a draft or breeze will strike it. Pack in pasteboard boxes or open jars. Do not use sealed containers.

PREPARE FOR SICKNESS

The time to prepare for sickness is while you are well, and this does not mean to borrow trouble, but a reasonable amount of forethought about events that are sure to come to pass at some time is sure to prevent trouble.

Every child should be taught what the pulse is, and why and how we feel it at the wrist. It is very easy to understand how to tell the pulse, and not at all difficult to learn to use the clinical thermometer. While everyone cannot have the opportunity to study thoroughly anything that belongs to trained nursing, most people can, if they try, pick up little points from doctors and by being among sick persons, and will in a short time get a rather good idea of what needs to be done in emergencies, and this knowledge will be of very great assistance to the physician.

Everyone whose circumstances are such that they can live as civilized people should have plenty of good bed linen, and then as the pieces become worn they should be saved, as old sheets and pillow cases, if whole, are preferable to new ones in the sick room. Save all the pieces of old soft cotton, flannel and linen, wash clean, rinse in clear water, then sterilize them by rinsing in warm borax water and press smooth. These are to be used for bandages, poultices and mustard plasters. Have a roll of adhesive plaster, a generous square of arnica court plaster, a box each of powdered borax and ground mustard, one cake of pure castile soap and one hot water bag, and provide a nice woolen cover for the latter. A mustard plaster made at the right time and placed in the right position might save a life. In the sick room a tablespoon each of salt and borax in a pint of water makes an excellent gargle for the throat and for infections of the throat, thrush, etc., there is nothing better than this powder and honey in equal parts and well mixed. Use a little of this powder in the water for bathing a sick person instead of soap, as this keeps the pores of the skin open so it can expel the waste matter, while soap irritates the skin.

If you have any property, no matter how much or little, be sure to make your will while you are strong in body and mind, so the money or things you have will go to the people you desire to have them, and if this is done it may save you much anxiety in your last illness.—A. M. H.

CUTTING UP

Freight Auditor—Were you in on it when our directors cut the melon?

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Southern Protection Congress



CALIFORNIA producers of beans, nuts and fruits, who are seeking a measure of protection from the product of cheap European and Asiatic labor, are planning a presentation of facts which will show that their industries must be protected if they are to live. Naturally, practically all are anticipating a fight from free traders of the East and, more particularly, of the South, but these free traders do not seem to be so abundant as formerly, as may be noted by the fact that a tariff congress has been organized at New Orleans and steps are being taken to secure protection for southern productions and manufactures. We note the following in the Rice Journal under the caption "Southern Production Congress to Work for Adequate Tariff on Rice":

"That an organized effort is to be made to secure tariff protection for rice and other Southern products that are forced to come in competition with those of foreign countries produced on a cheaper basis, will be welcome news to rice growers who are compelled to stand by and watch their industry perish under a policy of government that encourages foreign, at the expense of domestic production.

"The Southern Tariff Congress, organized at New Orleans last month with John H. Kirby of Houston as president, is undertaking to assemble the best thought of the South from a commercial, industrial and political standpoint to secure tariff revision favorable to productive industry.

"The organization is strictly non-partisan as far as politics is concerned and its activities will be carried on without reference to whether a democratic or republican administration obtains at Washington and regardless of the political complexion of congress.

"That the tariff is an economical and not a political question is the opinion of the organizers of the congress and democrats and republicans will share equally in its deliberations.

"As evidence of its non-partisan nature the participation of Hon. Jno. M. Parker, governor of Louisiana, and Senator A. H. Hall of New Mexico in the initial meeting of the congress is pointed out. Governor Parker, although a lifelong protectionist, is a staunch democrat and was one of the ablest speakers for Governor Cox during the campaign. Senator Fall, on the other hand, is a rock-ribbed republican and high up in the councils of that party. And along with a message of felicitation from Senator Harding came offers of assistance from the democratic governors and United States senators of practically every Southern state.

"In view of the fact that any discussion of the tariff heretofore has been looked upon as political propaganda, the action of democrats and republicans in uniting in an effort to secure proper tariff measures is regarded by industrial leaders who have advocated taking the tariff out of politics as a long step in that direction.

"The purposes of the congress are clearly outlined in the official call issued by Hon. Jno. H. Kirby, Governor Parker, Geo. W. Armstrong and the New Orleans Association of Commerce:

"To provide a non-partisan forum for the discussion of public policies as they affect the progress and prosperity of Southern industry.

"To recommend to the federal tariff commission and to congress a tariff schedule on Southern products that will equalize the cost of production in this country with that of foreign countries, consistent with the public welfare.

"To discuss enlarging the powers of the federal tariff commission by giving it authority to adjust schedules to meet the changed conditions brought about by natural or artificial causes where such a course is clearly necessary to foster American industry and to conserve the public welfare.

"To discuss the problems of foreign trade development and the bearing thereon of the fact that the United States is now a creditor instead of a debtor nation; and the need for American markets for those foreign prod-

ucts relied upon by foreign consumers of American products to pay their bills.

"To form a standing committee commissioned to speak for the productive industries of the South on national and international commercial policies of government.

"To permanently organize the Southern Tariff Association.

"An executive committee which will be composed of the strongest men from each industry, including rice, will be named at an early date and the time and place for holding the next session of the congress will be decided on."

FALLING CROP PRODUCTION

Crop production in this country in 1919, as estimated by the bureau of crop estimates of the United States department of agriculture, was 11 per cent above the average of the prewar years 1910-1914, and this was not previously equaled except in 1915 when the production was 16 per cent above the average. Late in the growing season of 1920 the production of crops was apparently 13 per cent above the average.

A tale of another sort is told when crop production is compared with population. During the last 30 years the largest per capita production was in 1898, when it was 12 per cent above the average of 1910-1914. In most of the years from 1896 to 1915 per capita production was above the average. The highest point, however, reached since 1915 has been the average of the five years mentioned, and this was done in 1917 and apparently in 1920. Notwithstanding the great mass of the crops of 1920 they are, after all, no greater than the average when compared with the great mass of an increasing population.

HIGH PRODUCING CORN

A Sonoma County subscriber, A. P. Martin, has tested out corn which has been exceptionally satisfactory. He writes:

"Induced to invest in some seed corn from a descriptive article and advertisement in the Cultivator last spring, it gives me pleasure to announce that every claim put forth therein has been fully justified by my experience.

"I planted about six acres on my hill farm seven miles west of Petaluma and have a wonderful crop. Without irrigation or fertilization the crop stands from ten to 12 and more feet high, with from two to 13 ears on a stalk, stalks from two to more inches in diameter. What makes it peculiarly valuable for ensilage is the fact that while the grain fully ripens the stalks, leaves and husks remain green for some time thereafter."

NEW OATS IN STOCKTON DELTA

After testing more than 100 different varieties at the university farm, the Burt oats has been selected as most promising for such conditions and the Sperry Flour Company at Stockton will distribute the seed for a number of experimental plantings. The Burt oats has a gray seed, an unusually stiff straw, makes a rapid, vigorous winter growth and ripens early. It matures earlier than the other varieties and is better adapted to spring planting. In 1920 it yielded at the rate of 74 bushels per acre at the university farm, as compared with 60.7 bushels for the red oats and 46 bushels for the black oats.

The Tehama County farm bureau will hold center meetings during December at Corning, 16; Bend, 17; Richfield, 20; Proberta, 22; Liberal, 23; Manton, 24; Bowman, 25; Los Molinos, 27. The directors meeting will be held in the farm adviser's office, Red Bluff, on December 18.

The Raisin Growers Association is considering uniting with orange, walnut and other shippers in making shipment by way of the Panama Canal in the effort to secure a reasonable freight rate.

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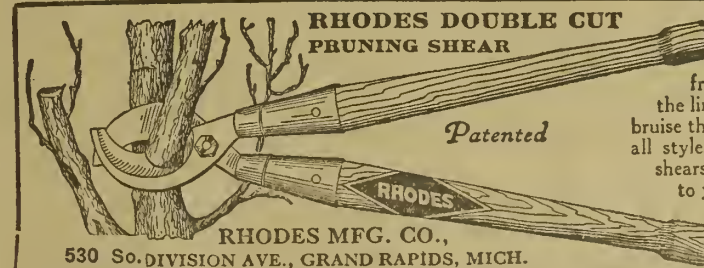


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Guilds of Greed

By A. L. Spellmeyer



IN the Middle Ages there were guilds of workmen and producers with strict laws governing the control, sale, volume and profit on articles made and sold. These guilds built many of the historic places in Central Europe and paid the tribute which supported the government of their kings and princes. The guilds became so powerful that governments were subject to them, but on the whole, their actions being prudent and careful, industry thrived and poor men were unknown at this period. Later, their power broken through the wedge of religious difference, the rulers smote them and disrupted their power, people starved and reformations and social upheavals followed.

If one could have looked back a few years and seen the effect that the retail associations would have upon the cost of products to the consumer and the price to the producer, such associations would have been nipped in the bud. Today the associations of butchers, bakers, grocers, packers rule the trades they handle. The only flaw is that they are all parasitical organizations instead of producers. They depend upon the farmer and livestock man they gouge. When production becomes unprofitable they will have nothing to sell, trade with or gouge from. They can explain their 100 per cent gross profits glibly, but that doesn't justify them nor does it justify the existence of such a complicated handling of simple products until the consumer pays many times the cost. Right in this state today the cost of barley from the farmer to the consumer equals as much as the farmer gets for his entire product, including expense and land income. The 50 cent porterhouse, the 50 cent pork chop continue with ten cent hogs and nine cent beef. What has happened? Cooperation and organization carried out to the last limit in all industries except those of actual production, farming, livestock raising and mining.

As to the permanent best interest of a country or a people, cooperation carried to such an extreme degree may cause disaster. It certainly compli-

cates marketing of products and adds expense. If the farms organize and the cattlemen organize they will bust open all the middlemen organizations until the people themselves organize. No wonder in a political year our sworn servants of the law were afraid to punish too many profiteers and took great care where they stepped.

The orange men have a competent association, but this year they are making no profits. Fertilizer, owing to the absence of livestock, is costly, and the labor has been costly which made this last crop. Then the railroad freights are high and shave that much margin from producers' prices, as the orange market means distance transportation.

It's the same with the olive men who cannot sell their products owing to a false alarm and cheap importation. The walnut men are suffering from an unsold crop, foreign competition and lower prices.

Is it possible in the face of the temporary impotence of even strong producers associations to doubt that there is a danger to all farming in this nation?

The guilds of greed, in retailing and market manipulation have sapped production. Money is put in a sock when men don't know where they can get a further supply of it, and when banks hedge and withdraw.

If this keeps up everything not yet down will come, including bank stocks and bonds, and there will be devastating failures in a wealthy country which has and is today financing and feeding a great part of the world. If the nation is to prosper the first step is to protect the farmer.

Without money and without profit there will be many acres less planted in California this fall, as men haven't the cash for seed and labor. There will be less cattle, hogs and sheep. Why should the producer, the farmer, the cattleman, the hog raiser, the sheep man, stand all the loss of readjustment? It should be distributed with middlemen bearing the bulk of loss on depreciated goods they have in stock. They made a profit on goods in stock before values advanced.

In and Around the Dairy



WHEN you sit down to milk a cow that has a long haired tail with which she likes to "switch" you in the face, bring a few hairs around her leg next to you, make the first part of a loop knot, then twist the ends together a little and clasp a spring clothespin over the place where the hairs cross. After a little experimenting the fastening can be made surely and quickly. When milking is finished remove the clothespin and let the cow "switch" all she wants to.

On many farms where milking is done by hand a mistake is made in not milking the cows dry or clean. Many cows go dry much sooner than they would if the milk was all drawn at each milking. If the young folks on the farm help do the milking, explain to them that unless all the milk is taken, nature will not furnish it and that the first milk drawn contains only a little butterfat, while the last, or strippings, is nearly cream.

Temperature is a factor that requires thorough knowledge in order to obtain best results with milk, cream and butter. The following will serve as a guide to the uninformed in the application of temperature: Milk for separating, 88 to 98 degrees Fahrenheit. For ripening cream when churning three times a week, temperature of 58 to 60 degrees; when churning once a week, temperature of room, 54 to 56 degrees. Temperature for churning in summer, 52 to 54 degrees; for churning in winter, 58 to 60 degrees. Of course, a reliable dairy thermometer must always be used.

Much of the butter made on the farm is not salted properly. The chief cause of uneven salting, that is sometimes high and sometimes low, is not weighing the salt and butter but guessing at the weights. While it may be pardonable to estimate the weight of

butter in a churning, which some are able to do with surprising accuracy, it is never advisable to "guess" at the weight of salt required for a certain amount of butter. On each and every farm where butter is made there should be a scale that will weigh to ounces or finer. Suppose there are 12 pounds of butter in the churn or on the worker, weighed or estimated, then salt should be added at the rate of one-half to one ounce per pound of butter, according to taste or market requirement. If mild salting is desired, six ounces of salt will be enough to add to 12 pounds of butter. If, however, a quite pronounced salt flavor is liked, then add 12 ounces or three-fourths of a pound of salt. If a uniform rate of salting were followed there would not be the variations in salt flavor so common in farm made butter.

It is very important that the salt be evenly distributed throughout the butter. Salt tends to deepen the natural color of butter, therefore where the salt is unevenly distributed throughout the mass of butter some parts are more yellow than others, causing a streakiness which is quite objectionable. Persons who do the salting in the churn in order to avoid bringing the butter in contact with warm air on a worker in the room are more likely to have mottled or streaked butter than those who salt on a worker although salting in the churn has several advantages.

One of the most objectionable faults in butter is "grittiness." This is caused by the use of coarse salt or too much salt—more than can be dissolved by the moisture present. In these days of fine dairy salt manufacture no buttermaker should add coarse salt to butter. Rolling such salt with the rolling pin will not make it fine enough for buttermaking. Salt should

be in the finished butter as a "brine" or be dissolved in water. Butter must carry a reasonable amount of moisture at the time of adding the salt in order to dissolve it, else "gritty" butter will result. It is for this reason that butter must not be too dry at the time of salting. When the water evaporates from the butter the salt is left behind as a crust on the butter or in fine particles. Some are troubled with this condition. The remedy is to keep the butter moist by sprinkling water on it.

On many farms there is considerable old barbed wire lying around, much of which could be rolled up and made useful. From the standpoint of economy it should be taken care of. This is not the chief point that I had in mind, however. What I wanted to emphasize in this connection is that a cow is likely to cut her udder and teats on barbed wire lying around. This is true whether it is lying around in the yard or whether it is fastened onto posts and hanging loose. A cow is very likely to try to crawl through a fence made up of two or three loose barbed wires. This is especially true if there is corn or other tempting food on the other side of the fence next to the pasture. Such a wire fence should be stretched and stays be put on between the regular fence posts. This may save much trouble with sore teats and udders; besides, it may prevent considerable loss of both feed and cows. A number of cows may go through the loose wire fence into the alfalfa field, eat too much of it and bloat and die over night. They may get too much corn and spoil lots of it.

In case a cow does cut a gash in the teat or udder, do not forget to wash it out thoroughly with disinfectant. Soak it about 15 minutes in about a two per cent solution of coal tar dip. Then apply some good salve. Vaseline is suitable. If no salve is at hand, use a good grade of lubricating oil and even ordinary axle grease is good. Most any of these will keep the germs from getting in and it will keep the air from reaching the raw sore. When a cow with such a sore udder is milked use care not to reopen the wound. Put the sore side of the teat against the side of the hand. I have seen milkers who have deliberately put the ends of their fingers directly on the sore. If the cow kicked she was punished severely. One cannot expect a cow with a partially healed barbed wire cut on her teat to stand absolutely quiet when it is being bruised in that manner. It is always safe to tighten up the loose wire fences and to pick up the small pieces of barbed wire lying around the barnyard and on the farm. Also, remember that barbed wire is worth money nowadays. —W. H. D., in Indiana Farmers Guide.

AVOID LOSSES OF HOGS IN SHIPPING

At a recent conference on livestock losses, called by the National Livestock Exchange, W. J. Carmichael, secretary of the National Swine Growers Association, presented a paper on "Hog Shipping Losses and the Prevention Thereof." In concluding his paper he stated that most of the losses could be avoided by:

Careful, humane handling by all agencies under whose jurisdiction the hogs come.

Careful inspection and supervision to see that all equipment is of the proper and safe type and in good condition; particularly cars, chutes, yards and conveyances.

Avoid overloading the cars.

Proper bedding in summer and winter and adequate, thoroughly supervised drenching or the use of ice in summer.

Adequate partitions in the case of mixed loads.

Particular care in the case of hogs which are "slow or slightly off."

Avoiding excessive fills before handling the hogs.

Production of hogs of a type which has a natural ability to travel well.

Handling with as great dispatch as conditions will warrant.

Supplying an adequate supply of chutes for unloading when the hogs get to market and wide driveways and gates.

A thorough campaign of publicity to the end that the foregoing shall be enforced.

HARMLESS CYSTS IN HOG TISSUE

As the cool weather approaches the rancher's attention will turn to some of his fattened hogs destined in a short time to add to the family needs what is commonly termed "good old country pork." Before the killing operations begin, it is well to consider a harmless abnormality frequently found in hogs, particularly those fed on dairy products.

Very often when the contents of the abdominal cavity are removed numerous clear cysts of various sizes are found along the outside of the small intestines which may suggest to one unfamiliar with such a condition that the meat of the carcass is unfit for food. Numerous experiments have been conducted in order to determine the cause of this condition, but as yet no specific cause has been determined. Some investigators attempted to prove the condition due to pathological organisms while others cling to the theory that the cysts are due to processes of mycotic origin and consider the action of yeast cells the cause. Observations by others have disclosed that the majority of hogs so affected were those fed on waste products of the dairy.

The condition is known as mesenteric emphysema for the reason that the cysts which form under and between the folds of mesentery are filled with gaseous material commonly termed "air." Two kinds of tapeworm cysts, which when eaten by the dog produce tapeworm, are found at times on the peritoneum of the hog. Those who are not capable of differentiating between the cysts of mesenteric emphysema and those of the tapeworm embryos should not permit dogs to eat any of the bladder like formations. Mesenteric emphysema is not known to produce any deleterious properties in pork. If no other abnormalities are found in the carcass the meat may be regarded as fit for food. The intestines, however, should be buried deeply or burned.

ABNORMAL TASTES AND ODORS OF MILK

Such aromatic feeds as ensilage, cabbage, rape, beets, turnips, rutabaga, carrots and their tops impart a characteristic odor and taste to milk. The taste and odor produced by these substances in milk is not due ordinarily to their ingestion by cows or to their elimination through the udder, but to the highly absorptive powers of the milk after it is drawn.

Experiments have shown that when these products are fed in moderate quantities and always after milking—not immediately before or during milking—the milk is not tainted by any special odor or taste. However, if fed in excessive quantities it is quite probable that contamination of the milk by these aromatic substances takes place through the udder. The volatile oil or garlic, to which the odor of that plant is due, is eliminated with the milk through the udder.

When milk is warm, that is freshly drawn from the cow, odors are readily absorbed. The stable odor and taste is acquired by milk which has been allowed to stand in unclean or poorly ventilated barns or milk sheds. Again, experiments have shown repeatedly that milk ranging in temperature from 57 degrees to 72 degrees Fahrenheit, when exposed to the odor of ensilage or horse manure from 30 to 60 minutes, acquires the odor and taste of such substances.

KEEP THE SHIPS ON THE SEAS

Many of the far seeing people of the country feel that not sufficient attention is being given to our merchant marine. Time was when America ruled the sea; prior to the war the Stars and Stripes had almost disappeared from the harbors of the world. The war made possible or, rather, made necessary, the coming back of American shipbuilders. Now the ships have been built and it is reported that in some harbors literally hundreds of them are anchored pending their disposal. The moving of our farm crops and of manufactures of all kinds calls for these ships being put into commission. From the tone of other papers the land over we think the demand is most general that these ships should be put into commission.

HERD REDUCTION SALE

Guernsey Females

We are over stocked with Guernseys and we offer a pick of anything on the place. Imported cows and A. R. cows, with high records and their show-winning offspring from such bulls as Effie's King and King of Hollow Hill. Also some wonderful producing 15/16 Guernsey grade cows and their heifers.

Bulls ready for service and bull calves. Walk into the herd and take your pick. Guaranteed free from t. b. and safe breeders. This is the greatest opportunity to buy Guernseys of highest type and production ever offered in the West.

The Prices Are Right

HOLLOW-HILL FARM

COLTON, CAL

THROCKMORTON'S DISPERSAL SALE

Having sold my ranch, I am selling my entire herd of

REGISTERED BERKSHIRES

AT PUBLIC AUCTION

At the Ranch Two Miles North of

Sebastopol, California

December Eighteenth

THE OFFERING:

Includes my complete show herd carrying the blood of the champion Baron Duke and Rookwood Lady 100th—the blood that has made Berkshire history. The sale will include 30 choice sows and gilts, two herd boars and several extra good prospects for next year's shows. This is one of the choicest offerings of Berkshires to be made this winter.

I will also sell my entire farm equipment and household goods.

The sale will be held on the highway two miles north of Sebastopol and eight miles west of Santa Rosa.

J. G. Throckmorton

Sebastopol

California

Good Hogs Made Better

All hogs that grow fast and produce pork at a profit are good hogs. And the difference between good hogs and poor hogs—*between profit and loss*—is largely the difference in their health and vigor. You can hurry your hogs to market weight in shorter time—cash-in on them quicker—make good hogs better—make poor hogs profitable, by adding to their ration a small amount of

Pratts Hog Tonic

Not a food—does not actually grow bone and flesh—but a tonic and regulator, that tones up the system and puts hogs in tip-top condition. Helps keep disease away, makes hogs healthy and hearty. Then they stand up under the strain of heavy feeding and turn *all* their feed into pork. If you've never used Pratts Hog Tonic you don't realize how fast a hog can grow if given a fair chance.

Here's what we know about Pratts Hog Tonic—and our money-back guarantee backs this statement: It makes hogs healthy—it keeps hogs healthy—its use brings more pounds of pork from each bushel of feed—it brings hogs to full market weight 30 days quicker—it improves breeding stock so big litters of strong pigs are the rule.

"Your Money Back if YOU Are Not Satisfied"

Make the test at our risk. Every day you delay means a loss to you—so start today.

There's a Pratt Dealer near you

PRATTFOOD CO. Philadelphia
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Makers of Pratts Poultry Regulator,
Animal Regulator, Cow Tonic, Dip and
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We specialize in sales of

REG. DAIRY CATTLE

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We conduct sales of grade dairy cattle and general farm sales in all sections of California. Absolute satisfaction guaranteed. Forty years of successful sales in California and thousands of satisfied customers.

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Maxwell Farms' Holsteins



Sir Ormsby Skylark
Sire of the World's Champion Cow

The fountain head of the Ormsbys with over 50 daughters of Sir Ormsby Skylark in the herd which has two sons of Sir Pietertje Ormsby Mercedes at its head. Write for our sales catalog of service bulls.

D. G. Maxwell, Owner

Garden Court, Hollywood, Cal.

Home of King Korndyke Pontiac Mead

Bargains in Bull Calves from Tested Dams.
Top Herd in U. S. for Fat Production of 100 cows.
LOS ANGELES COUNTY FARM HOLSTEINS
HONDO, CALIF

3 Miles South of Downey on Downey-Long Beach Blvd.

The Victory Herd of Holsteins

Holsteins of known value, headed by Sir Phebe De Kol Segls Pontiac, a son of King Segls Pontiac Count, acknowledged one of the breed's greatest sires, and our Junior herd sire, King Pontiac Alcartra Prilly, whose dam made 36.61 lbs. butter out of 805 lbs. milk in 7 days, now on yearly test. A young bull from this herd is a profitable investment.

HILLCREST FARM, H. E. Spires, Mgr., Caruthers, Cal.
Duroc-Jersey Swine of Highest Quality

The Cattle Situation Today

By A. L. Spellmeyer

There is some cattle movement in California. The North has plentiful rains and warm weather to start the feed. From Porterville north feed prospects are fine. Grass is fine around Stockton and both the San Joaquin and Sacramento will bloom by early spring with fence high alfalfa in places. A dry streak from Saugus to MacFarland, relieved by a few sprinkles, finally received a nice rain December 1. Feed has not done more than root and start in Kern County, but mild weather should bring it along in good time. The coast has brought in some cattle; various ranches are now fairly well filled. The upper and central part of California has brought in several thousand Nevada cattle. Northern beef buyers were last week working as far south as Bakersfield. They advise of plentiful beef north—which doesn't explain their presence so far south. The Kern County people are bringing in several trainloads of their Diamond A steers. Hart ship-

ped in some steers to Coalinga district. Twistelman brought in some calves and Klipstein some Globe Arizona and Winslow cows. Some cattle have been brought in to El Toro and south of Santa Ana district.

Money is scarce and ranch rentals have not dropped with cattle prices. I saw one man who two years ago sold \$250,000 worth of beef, shipping a few cars of steers to save that \$5 a day shipper's expense. I have seen men get down to old time economies of saving a nickel.

It is a sad day for general business when the life blood of profit is drained from the farmer and cattlemen, as they know how to cut down and are not too young to remember the time when a top ranch hand got \$20 a month, and when a shirt cost 50 cents. The present policy is forcing money into a sock, cutting production and will eventually hurt all business if it isn't relieved soon by a living profit to production.

The Wool Growers Getting Together

The National Sheep and Wool Bureau of America will lend its entire support to the plan of Senator Reed Smoot of Utah to secure a year's embargo on the importation of wool. This announcement was made by President Walker upon his arrival from New York to take part in several wool conferences that are to be held in connection with the International Livestock Exposition at the Union Stock Yards, Chicago.

The National Sheep and Wool Bureau of America last January secured the introduction of the French-Capper Truth in Fabric bill which is designed to compel textile manufacturers to stamp their cloth with its content of virgin wool and of shoddy—old rags reworked in some cases as often as eight times.

President Walker said that 110 organizations of all descriptions, some of them of nation wide influence, have now endorsed the Truth in Fabric measure and that five or six new resolutions are arriving at the headquarters of the bureau daily. Among the strongest supporters of the measure is the American Farm Bureau Federation, of which J. R. Howard is president. Mr. Howard is a governor of the bureau. Mr. Walker said:

"The National Sheep and Wool Bureau of America is greatly in favor of Senator Smoot's embargo proposal and will give it and also the proposal for a tariff high enough to adequately protect the wool growers of the United States the same whole hearted and vigorous support that it is giving the French-Capper Truth in Fabric bill.

"It must be clearly understood, however, that neither an embargo nor a high protective tariff would of itself be able to protect the sheep grower from his greatest foe, the junkman. Even with the embargo and the tariff in effect, the wool grower would still need the protection of the French-Capper Truth in Fabric bill to shield him from the unfair competition of the rag picker, because shoddy would still be sold as virgin wool under cover of the misunderstood popular term, 'all wool.' The wool grower will be at the mercy of the shoddy interests until there is passed a law making it compulsory for the textile manufacturers to label their cloth with its content of virgin wool and of shoddy.

"With the farmers still burdened with their wool clip of last spring, with the storehouses of the world choked with four billion pounds of unused virgin wool, with the popular demand for virgin wool cloth artificially diverted by certain textile manufacturers from the wool grower to the rag picker, it is absolutely essential for the protection of the wool growers that the French-Capper Truth in Fabric bill be enacted as soon as congress reconvenes."

Last March the interstate and foreign commerce committee of the house of representatives held a hearing on the bill, but adjournment was taken before the measure was reported out of committee. This December a hearing on the measure will be held before the senate committee on interstate and foreign commerce.

Tulare Holsteins Average \$245

The fourth Holstein consignment sale held at Tulare, Thursday, December 2, attracted a fair sized crowd of breeders. The offering was selected from 11 herds and was a very good offering. Owing to shortage of rainfall in the vicinity the local support was not as strong as might have been noted under other circumstances. The top of the sale was the good heifer, Just Jenny Wren, consigned by Peter Lowson, Tulare, and bought by D. Carmignani, Dos Palos, for \$600.

Burr Farm, Los Angeles, was the heaviest buyer, taking a total of 22 head, including a large number of the tops. D. Carmignani, Dos Palos; Carl L. Lewis, Riverside; R. Zangl, Bellflower, and Chas. Hubbard, Riverdale, were all heavy buyers. A total of 67 head sold for an average of \$245 per head, which was considered quite satisfactory. Throughout the sale there was evidence of the strength of the demand for the better sorts.

The sale was managed by C. L. Hughes of the California Breeders Sales and Pedigree. Col. Ben A. Rhoades of Los Angeles was the auctioneer. Col. George W. Bell of Tulare assisted in the ring.

Consigned by H. E. Spires, Caruthers

1. Ideal Segls Wayne, September, 1915: Burr Farm, Los Angeles, \$210.
2. Victor Beauty Queen, February, 1919: Carl L. Lewis, Riverdale, \$315.
3. Leda Hartzog Pietertje Queen, September, 1909; F. L. Potterton, Caruthers, \$295.
4. Victory Pietertje Pontiac, November, 1917; Carl L. Lewis, \$395.
5. Sunflower Leda Walker, February, 1912; Chas. Hubbard, Riverdale, \$250.
6. Princess Eva Jullanna, August, 1918: F. L. Potterton, \$265.
7. Canary Nancy Korndyke, September, 1914; W. F. Mitchell, Visalia, \$400.
8. Ideal Marydale, July, 1915: Burr Farm, \$215.

Consigned by Gotschall & Magruder, Ripon

9. Arabella of Linwood, September, 1911; J. R. Welsenberger, Terra Bella, \$250.
10. Bonnie Angle Alcartra, January, 1916: Burr Farm, \$250.
12. Creamcup Fidessa Pontiac, May, 1917; D. Carmignani, Dos Palos, \$310.
13. Karlay Creamelle Pontiac, December, 1917; Johnson & Calderwood, Porterville, \$225.
16. Fay Walker De Kol Korndyke, July, 1918: Burr Farm, \$400.
17. Foxy El Prado, November, 1913: Burr Farm, \$400.
20. Iida Pietertje Walker, May, 1916: Burr Farm, \$200.
23. Karlay Korndyke Vale, June, 1919: Clair Thompson, Tulare, \$150.
24. Lady Verna Walker De Kol, June, 1917: Burr Farm, \$260.
25. Lottie Korndyke De Kol Segls Lass

rd. September, 1916; R. Zangl, \$185.
 26, Mabel Pontiac Korndyke 2nd, January, 1916; Burr Farm, \$350.
 27, Miller Shadeland, January, 1917; D. Carmignani, \$290.
 29, Oberlin Lucy Hengerveld, June, 1916; Bridgford Holstein Co., Patterson, \$450.
 31, Karlray Pontiac De Kol, November, 1919; D. G. Comfort, Hanford, \$160.
 32, Princess Korndyke Saddle Vale, April, 1916; H. C. Cheney, \$210.
 33, Princess Pontiac Trilomla, December, 1915; Burr Farm, \$200.
 34, Queen Bess Walker De Kol, April, 1913; Chas. Hubbard, \$245.
 35, Queen May Walker Concordia, March, 1916; Burr Farm, \$210.
 36, Queen Segis Zeila, July, 1916; F. H. C. Hampson, Tulare, \$215.
 37, Abbekerk Spring Farm Pontiac, April, 1920; E. Peterposten, Hughson, \$200.

Consigned by Harry Hill & Son, River-Jale

38, Laura Colantha Segis, March, 1916; R. Zangl, \$185.
 39, Nancy Segis Lockhart, April, 1915; Burr Farm, \$225.
 40, Vale Tuka Lockspur, April, 1916; Burr Farm, \$300.
 41, Ambro Creamelle De Kol Lass, March, 1919; Frank A. Andrews, River-Jale, \$190.

Consigned by F. S. Borrer & Son, Tipton

43, Colantha Zoza De Kol, October, 1917; Burr Farm, \$200.
 44, Lady Jetty Crane, December, 1912; Burr Farm, \$150.
 46, Lady Cristerla Mechthilde, July, 1910; Bridgford Holstein Co., \$325.
 50, Niko Wayne Creamelle 2nd, May, 1913; Burr Farm, \$160.

Consigned by Alex Whaley, Tulare

51, Colantha De Kol Pontiac Mercedes, April, 1918; H. C. Cheney, \$335.

Consigned by R. C. Sturgeon, Tulare

52, Dutch Pontiac Abbekerk (bull), October, 1919; Johnson & Calderwood, \$205.
 53, Prunella Burke Abbekerk, November, 1919; R. L. Holmes, Modesto, \$280.
 54, La Mona Hengerveld of Pickwood, July, 1917; Burr Farm, \$400.
 55, Wayne Estrella Pontiac, March, 1919; Frank Helm, Fresno, \$275.
 56, Bonanza Pontiac 2nd, May, 1919; Burr Farm, \$200.
 57, Mosswood Aaggie Jane, December, 1918; E. Peterposten, \$370.

Consigned by Peter Lowson, Tulare

58, Just Jenny Wren, November, 1917; D. Carmignani, \$600.

Consigned by Santa Marla Stock Farm, Tulare

59, Empress Contenta Creamcup, November, 1915; R. Zangl, \$245.
 60, Plebe De Kol Fayne Gerben, May, 1917; R. Zangl, \$345.
 61, Talima De Kol Vale, January, 1916; Mrs. Kate Whitten, Tulare, \$225.

Consigned by Ed. Barry, Jr., Daggett

62, Ida Pontiac Korndyke, February, 1917; D. Carmignani, \$265.
 63, Tosantos Korndyke Aaggie, August, 1918; R. L. Holmes, \$280.

Consigned by E. J. Weldon, Sacramento

65, unnamed heifer, January, 1920; A. W. Morris & Sons, \$300.
 67, Elzevere Sadie Vale, June, 1919; R. G. Comfort, \$145.
 69, May Ormsby of Donnybrook, April, 1919; D. Carmignani, \$135.
 70, Lillith Ormsby of Donnybrook, June, 1919; Burr Farm, \$135.

Extra Consigned by R. F. Guerin, Tulare

S. V. K. P. Leola of Sunnyside, April, 1918; Burr Farm, \$510.

SOME PROPERTIES OF MILK

Of the several physical properties that have been extensively studied in milk hygiene, color, odor and taste occupy an important field.

The color of milk is generally white and opaque with either a yellowish or bluish tinge. The calcium caseinate is responsible for the white color, whereas the opacity is due to the combined calcium caseinate and fat contents. The opacity of milk depends upon the quantity and size of the fat globules; the opacity being less when the fat globules are large.

The yellowish tinge often observed in milk is due to a pigment in the fat content, known as carotin. This pigment is more pronounced in certain breeds of cattle, for example in the Guernseys. A low percentage of fat content brings about the bluish tinge; however, the bluish tinge is sometimes associated with skimming and watering, but on the other hand, any normal milk in thin layers always has the characteristic bluish tinge.

There is a slight odor to normal milk, resembling somewhat the exhalations from the cow's skin, while it also has a sweetish taste. A salty, bitter, or a rancid animal-like taste may be observed in the milk of an individual cow during the colostral period or near the end of the lactation period. A similar taste may be noticed also in the milk from cows in an advanced state of pregnancy, as well as after abortion; in cases of mastitis (garget), also during digestive disturbances.

In case there are a number of "stripers" in a herd, a like condition may be present in the mixed milk. Milk which has a certain degree of acidity will act upon rusty containers, forming iron lactate, which gives to the milk a bitter astringent taste.

Rusty milk vessels, as well as those not rinsed free from soap powder, often produce in milk a "fishy" taste.

EYE TEST SERVES AS CHECK UPON CATTLE TUBERCULOSIS

The eye test for detecting tuberculosis in cattle has the approval of the scientists of the bureau of animal in-

dustry, United States department of agriculture. The ophthalmic or eye test is used as a check upon the older methods, as it happens occasionally that an animal that will not react to the subcutaneous injection or intradermal test will react to the eye test.

Two tuberculin tablets are placed in the conjunctival sac beneath the lower lid of the left eye, and observations are taken at approximately the third hour following and at frequent intervals up to 24 hours. Reaction to the test is indicated by discharge and swelling.

The bureau of animal industry is not prepared to accept the evidence of

the eye test alone where cattle are intended for interstate shipment. The test, however, furnishes an additional safeguard when used with the older method.

The eye test is not well adapted for use upon range cattle or cattle in transit, because of the possibility for dust setting up an irritation not related to tuberculosis. It has its best use on the dairy farm, where conditions are such as to give sure results.

The experts have observed that in herds which are frequently tested by the subcutaneous method it is advisable to apply the intradermal and the eye test

A Year in the Open

DURING the year just closing HEBE and its relation to the dairy industry has been brought to the forefront of dairying thought and has been made the subject of considerable discussion. This has resulted largely from the campaign of educational advertising which the Hebe Company has been conducting in this and other farm journals. This out-in-the-open discussion has demonstrated that the opposition to HEBE has been inspired largely either by prejudice, misrepresentation of the facts or misunderstanding of the nature and purposes of HEBE and the manner in which it is being advertised and marketed.

During this discussion many questions have been asked and answered and many charges reflecting against the product have been aired and refuted.

Although presented in a variety of forms the charges against HEBE, when reduced to fundamentals resolved themselves into these two points:—

1. The belief that HEBE will injure the dairy industry by being marketed as a substitute for evaporated and condensed whole milk.
2. The belief that in HEBE skimmed milk is used simply as a means of bringing cocoanut fat on the market in competition with butter fat.

In the advertising published in farm journals and in the correspondence resulting from this form of advertising these points have been answered frankly and fairly. In answer to the first it has been shown that:—

HEBE is *not* being advertised or marketed either as evaporated or condensed whole milk or as a substitute for it or a substitute for anything else—but that HEBE is produced, labeled, advertised and marketed as a new and distinctive product (a compound of evaporated skimmed milk and vege-

table fat) for definite uses (cooking, baking, coffee) and as such is building its own market and thus increasing the general consumption of dairy products.

In answer to the second point it has been shown that:—

HEBE is *not* being used as a means of bringing cocoanut fat to the market but that the converse of this is true—that a small amount of cocoanut fat is merely the vehicle by which a large amount of skimmed milk is being brought to the market as a cooking medium. In the production of every hundred pounds of HEBE, two hundred and ten pounds of skimmed milk and only seven and eight-tenths pounds of cocoanut fat are used. This small amount of non-dairy ingredient is there merely to supply the large amount of dairy ingredient with the shortening and other elements necessary to make it desirable as a cooking medium. The cocoanut fat in HEBE serves a purpose similar to the purposes served by salt in butter and gelatine and flavoring extracts in ice cream—to make the dairy ingredient more readily salable for the uses intended.

As can be seen in this brief review of the year's development in the HEBE discussion the Hebe Company has diligently sought to give to the rank and file of the dairy industry all of the facts by which they may judge the product and know how it will affect their business. It has always been the belief of this Company that the dairy-men should have these facts and that it is for the best interest of the dairy industry as well as the Hebe Company to give the broadest publicity to all matters that directly affect the industry.

It is only partial knowledge that is dangerous and that is why many dairy-men and leaders of dairy thought, after learning all of the facts, have come to see HEBE in a different light in its relation to the dairy industry.

The HEBE situation is discussed at length in the booklet "The Missing Third"—a copy of which will be sent free on request to the Hebe Company, 3273 Consumers Bldg., Chicago.

THE HEBE COMPANY

CHICAGO

SEATTLE

CALEDONIA SHORTHORNS



Imp. Caledonia

Caledonia Shorthorns constitute one of the choicest collections of the breed owned in America. Our herd bulls, Imp. Caledonia, Gainford Matchless, grand champion at the 1919 San Francisco show and Pine Grove King stand out prominently in the West. Our females represent choice Scotch and American families, and are noted for their type and quality. We can at all times furnish foundation material and bulls suitable for any herd or for the range. Our prices are moderate and every animal is guaranteed. Visit our farm and herd. Send for special bull list.

CALEDONIA FARMS
WEST SACRAMENTO, CALIF.
OFFICE—57 POST ST. SAN FRANCISCO.

MEN WANTED

TRACTOR OPERATORS

AUTO DRIVERS

AUTO MECHANICS

AUTO SALESMEN

TRUCK SALESMEN

BATTERY REPAIRMEN

TIRE VULCANIZERS

OXYACETYLENE WELDERS

BIG WAGES

STEADY EMPLOYMENT

How often you read such ads in the daily papers. The demand this year is greater than ever before.

We teach these trades by the latest methods and with the most complete and up-to-date modern equipment that money can obtain.

ENROLL NOW

and train to fill the high
salaried position

Special rates for a short
time only

HEMPHILL BROS.
Auto and Tractor School
720 Franklin St. Oakland, Cal.

Buy your Alfalfa Seed from the
Grower and save the Seedman's
Profit.

**FANCY HAIRY PERUVIAN
ALFALFA SEED**

Remember every sack is sealed
and tagged by the County Horti-
culturist, delivered to your sta-
tion for 34 cents per pound.

W. R. WHITMAN

Box 29 Yuma, Ariz.

**The Little
TWISTER**
YOU can have the handiest, most
reliable belt power outfit that is
built if you own a Ford or Dodge.
BELT POWER TRANSMITTER
is all that you need. Catalog
free. Frank R. Welsgerber, Sa-
lina, Kansas.

The California Cultivator
Costs Only \$1 Yearly

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
December 16-17, Consignment Sale, Sacra-
mento.
February 3, James J. Jeffries, Burbank.
February 5, W. A. Thompson, Hynes.
Poland Chinas
February 17, Bassett, Ross & Craw-
shaw, Hanford.
Berkshire
February, Italian Vineyard Co., Guasti.
Durocs
February, Falfadale Farm, Perris.
Percheron Horses
February 17, M. Bassett, Hanford.

A recent addition to the herd of Herefords being assembled by William Briggs and Son, Dixon, is the junior bull calf, Beau Prince 33d, that stood first in a class of 22 at the American Royal Livestock Show at Kansas City. This youngster is declared to be one of the best calves shown the past season and it is the intention of Messrs. Briggs to carry him along for the 1921 shows.

R. M. Dunlap, well known livestock man of Sacramento, paid \$1,075 for the two year old Shorthorn heifer, Mina Hedgewood A, sold in the American Royal sale at Kansas City.

A calf club with nine members has been organized at Galt and five Holstein and four Jersey heifer calves have been provided. The Holstein calves were secured from Toyon Farms, the Napa State Hospital and A. W. Morris and Sons. The Jersey calves came from the Thorp herd.

Swine men throughout the state will learn with deep sympathy of the illness of Alex D. McCarty, president of the California Swine Breeders Association and one of the leading Poland China breeders of the West. Mr. McCarty has been confined to his home in San Francisco for several weeks but hopes to make a trip to the Hawaiian Islands to recuperate.

Besides the junior yearling Hereford bull, Beau Blanchard 105th, lately added to the Mission Hereford herd, John A. Bunting reports the purchase of junior bull calf sired by Beau Blanchard.

William Bond and Son, Newark, were buyers at the Shorthorn sale held in connection with the Portland livestock show and secured the following females to add to their herd: Mysie's Queen, Lovely Miss Goods, Rosie Supreme. They sold the following females: Cumberland Maid, a junior yearling heifer sired by Sir Type and out of Gloster's Maidenness, to Day and Rothrock, Spokane; White Cumberland, a senior heifer calf sired by Sir Type and out of Scottish Flower 2d, to D. E. Arthur of Idaho; Cumberland Sunrise, a junior yearling daughter of Sir Type and out of Roan Sunrise, to D. A. McDonald of Washington, and Cumberland Goldie, another daughter of Sir Type, to Warren Pattison of Oregon.

M. E. Prescott, editor of the Holstein-Friesian World, is now in California visiting the leading herds of the state. Prescott attended the sale held last week at Tulare.

A. B. Humphrey, one of the pioneer Berkshire breeders of this state, is making his plans to hold a public sale of breeding stock early next spring. This sale is certain to attract wide attention for the reason that the Grape-wild herd is regarded as one of the top collections of the breed. It has been several years since Mr. Humphrey held an individual sale.

F. Fortini of Orland writes: "It may interest you to know that our herd bull, Dairy Maid's Gay Prince, has been leased by the university farm, Davis, to use on their herd. Dairy Maid's Gay Prince was, as you may remember, grand champion bull at the state fair 1920; he repeated his success at the Glenn County fair, Orland, in very hot competition."

Maid Tushie Segis, one of the six daughters of Allenvall Cornucopia Paul, owned by James J. Jeffries of Burbank, has finished her year with 28,240 pounds of milk and 1,137 pounds of butter. Her seven day record of

pounds day record of 130 pounds are very creditable ones. She is the first one of five sisters now on test to finish and at least two of the others will top a thousand pounds. Howard Koch, who has had charge of these cows for the past two years, believes they form a portion of one of the best herds on the coast. It looks very much like he is right.

The Maxwell Farms at Hollywood are getting a number of daughters and granddaughters of Sir Ormsby Skylark ready to test. Under California conditions they should make dandy records as their sisters and former barn mates, which are being held at Waterloo, Iowa, until they finish their tests, are

What Part of the Farmer's Milk Check Represents Profit?

FOR 180 cows that averaged less than 5,000 pounds of milk annually the part of the milk check that represented profit and reimbursement for the owner's managerial ability was 23 per cent. For 257 cows averaging more than 6,000 pounds annually, the per cent remaining for profit and the owner's skill was 41 per cent.

For the last five years the dairy division, United States department of agriculture, has been making studies which bear on this problem in many dairy sections of the country; and two year investigations on the requirements for producing milk have now been completed on groups of dairy farms in six of these communities. One of the latest of these studies, carried on in Vermont, is the one on which the above figures are based. What it has disclosed in regard to economy of production and the requirements for producing milk may be of value to the dairyman who is interested in finding out where milk returns are going.

These figures which were obtained from a study of the production records of 587 cows which remained in the herds a full year show that the average annual production of the 180 lower producing cows was 4,146 pounds; also that the average production of 257 higher producers was 7,144 pounds a year. After subtracting from 4,146 pounds the amounts of milk required to pay production costs (feed, 1,810 pounds of milk; labor, 806 pounds of milk; and other costs, 570 pounds of milk), only 960 pounds of milk remained for the profit and skill of the owner. For the high producing group, however, 3,074 pounds of milk remained after the following deductions had been made: for feed, 2,302 pounds of milk; labor, 806 pounds of milk; and other costs, 962 pounds of milk.

Here, then, were cows in the same locality, in some cases standing side by side, and all requiring about the same labor; yet some were producing three times as much profit as others, even though they were charged with greater quantities of feed and a large amount of "other costs."

The figures adduced are significant also in that they show that in milk checks size is not always a true measure of real value; but that the per cent of profit, as determined by the cows that are kept, plays an important part.

Requirements for 100 Pounds of Milk

The figures upon which this comparison is based were actual records of production; feed, labor and other costs were obtained by monthly full day visits on each of the farms for a period of two years. Careful records were made on these visits of the daily milk production of each cow, feed consumed, labor required, overhead costs, etc. Using these data, the requirements for producing 100 pounds of milk were worked out. So far as possible the requirements were determined in terms of pounds of feed, hours of labor, etc., so that constantly fluctuating prices would have no effect on the value of the figures. Results may be interpreted at any time by using prevailing prices.

The requirements for producing 100 pounds of milk, based on 847 cows, with an average annual production of 5,252 pounds of 3.9 per cent milk, were as follows: Grain, pounds, winter, 33.1; summer, 8.7; hay and other dry roughage, pounds, winter, 129.9; sum-

mer, 18.7. Silage and other succulent roughage, pounds, winter, 191.3; summer, 27.8. Hauling and grinding concentrates, winter, \$0.020; summer, \$0.005. Bedding, pounds, winter, 11.2. Pasture, acres, summer, .10. Humar labor, hours, winter, 2.07; summer, 2. Horse labor, hours, winter, .6; summer, .4. Overhead and other costs winter, \$0.555; summer, \$0.425. Credit for calves, winter, .025 of one calf; summer, .009 of one calf. Credit for manure, pounds, winter, 382; summer, 56.

HOG FEEDING PROFITABLE TODAY

Corn on hand, is worth as corn just what you can get for it at the elevators. Let us presume that your local elevator will pay you 75 cents per bushel for your corn, regardless of the fact that some of the 1919 crop could have been sold for almost \$2.00 per bushel, and that some owners would have sold for much less than the \$2.00 price had they been able to move it. In other words, let us take a figure which represents somewhere near what it would sell for as corn—then compare that price with what it would be worth converted into pork. The various agencies have determined that 100 pounds of pork should show a profit if it sells for the price of 13 bushels of corn. The 13 bushels of corn would bring, at the above price \$9.75. However, much of the corn consumed by the hogs could have been sold for considerably more than 75 cents per bushel on the days it was fed. In order to show a profit, therefore, the hogs should sell for considerably more than the present selling price of 13 bushels of corn today—and they are doing so.

We have a record corn crop, with a lot of the 1919 harvest in the cribs, and we have a shortage of hogs. Regardless of past losses, which on the whole are compensated by the former profits due to rising prices—we are interested in the present and future. If we fail to feed hogs, our corn will be cheaper because there will be more to go to market direct.

Taking all conditions into consideration, it seems that we are likely to have greater profits in hog feeding in the immediate future than we have seen any time since the profits due to rising prices in the early years of the world war.

"BREEDS OF DAIRY CATTLE"

The department of agriculture is revising a bulletin published in 1917 touching upon score cards and all kinds of information as to dairy cattle breeds. This bulletin is "Breeds of Dairy Cattle," by H. P. Davis.

Breeds of dairy cattle differ in both conformation and general characteristics. Each has been developed for certain ends. In selecting a breed for any dairy enterprise, consideration ought to be given to factors which will make for the success of that particular business.

The prevailing type of each breed and the ideal toward which the breeders are striving are described in this bulletin. Such information, together with a brief history of the origin and development of each breed, should be of value to the breeder in beginning and carrying on his breeding operations.

Only those breeds having a large representation in the United States are included in the discussion.

MEAT EATING

By W. H. Lipman, M. D.

It is often stated that Americans eat altogether too much meat. The same thing has been said many times before about almost every other food. When we begin to look for the facts behind such statements we find that we have searched in vain. These statements undoubtedly date back, at least in part, to the time when certain diseases were supposed to be caused by foods.

Who does not remember that great pugbear—uric acid? We were warned not to eat this or that food, especially meat, because it produced uric acid and uric acid was the cause of rheumatism, but we know better now. We know that rheumatism is an infection, pure and simple, and has nothing to do with any kind of food. We know that a rheumatic joint, so-called, is a joint that has been infected with germs that were carried to it by the blood stream from some other part of the body. In fact, we know that clean, wholesome food, be it milk, meat, spinach or water, or anything, cannot cause disease. It can only do so when contaminated with disease germs.

Quantity Undecided

When we come to the question as to how much or how little of this or that class of food we ought to eat, we find that we cannot draw any general conclusions, first, because science has as yet not positively established just how much heat, energy and tissue building power the various foods possess, although certain arbitrary standards have generally been accepted.

Second, and this is very important, the digestive and absorptive ability of people varies greatly. In other words, while one man might digest and utilize all the value of a certain quantity of a given food, another will utilize only a small part of it.

Third, the needs of people differ as widely as their digestive powers, for example, certain fare will meet all the needs of a banker, editor or stenographer, but would be entirely inadequate for a farmer, blacksmith or a soldier on march.

Feed Patients

There has been a great change in our ideas regarding the feeding of sick people in the past few years. We all remember how we starved our typhoid fever patients by feeding them on nothing but milk. How thin and emaciated they were during convalescence! Seemingly they could not get enough to eat for the next year, but we know better now, and keep them on a generous diet, including certain meats, throughout their illness. As a result, complications have been lessened and the course of illness and convalescence shortened.

Now as to the question of meat eating: As stated before, it is impossible to say that we are eating too much of this or too much of that, as the needs of individuals differ, and although it is quite true that now and then we see someone who eats too much of some kind of food, this does not mean that everybody eats too much.

Comparisons Made

However, we can come to some pretty definite conclusions about meat eating when we study the accomplishments of the people who eat the most meat as compared with those who eat little. The Australians, Americans, Canadians, English, Germans, French and Italians are the heaviest meat eaters in the world, and I think we will all agree that these races have discovered and created everything worth while in science, art and literature, and have made life generally worth living.

It may be a coincidence, but it is worth mentioning that the Australians and Americans consume more meat per capita than any other people, and they surely gave a good account of themselves in the Great War. The authorities are quite generally agreed that the people who eat the most meat have by far the most ambition and initiative and greater resistance to disease than those who eat little meat.

We all remember the classic case of the French and British laborers who were building a railroad in France in the middle of the last century. It was noticed that the British worked better and accomplished a great deal more than the French. For a time

the cause for this discrepancy could not be found until it was discovered that the British ate roast beef every day while the French had meat only once or twice a week. When beef was added daily to the menu of the French their production soon equaled that of the British.

KIND OF SWINE FOR BREEDERS

Swine breeders expect every animal born on their farms to be the best one ever raised, an A No. 1 outstanding champion, and if, according to present standards of breeding, he is not a championship winner, they calmly change the standards to fit the hog—and this is progress. If the animal was admitted to be inferior to the ideal wanted he would not sell for a big price—and that would be retrogression.

The trouble is we want too much and want it too quick. Not every animal is better than its sire and dam, although we should like it to be. By changing our ideals to suit our animals we are sawing off the limb next to the tree. Swine have a tendency when bred for a high dressing percentage to have very fine bone, often so fine they go down on the dewclaws. To get away from this more bone has been favored by judges, which is a good thing. But now we go to the other extreme and try to get a hog's legs as big as possible. Some look like the animals in the "Wizard of Oz." Anyone knows size of bone does not necessarily mean quality of bone—generally the opposite. A big bone is more open and porous than a small one, weighs more, and is not wanted beyond certain limits. Swine breeders cannot overcome rules and laws of breeding simply by convincing

themselves that a thing is what it is not.

Fewer animals kept for breeding and better judgment in choosing them is what we want. Obtaining quantity at the expense of quality is what we don't want. Keep only the best for breeders, sell the others for slaughter—that is progress.—J. E. T. in National Stockman Farmer.

BUTTER, CHEESE AND ICE CREAM MAKERS

The butter, cheese and ice cream makers of California recently gathered in annual convention at Davis. The butter scoring which was conducted during the session resulted in first place going to J. Reichenuth, Bodega Cooperative Creamery, 93.25. Other scores were: Julian Searles, Scott's Dairy, Hanford, 91; Fred Deter, Montague Creamery, 91.75; R. G. McBride, Davis, 91; Orland Cheese and Butter Company, 91.75; F. Simonsen, N. C. M. P., Orland, 92; G. R. Jaehnig, Davis, 92.50; W. P. Evarts, N. C. M. P., Sacramento, 91.50; A. Wirz, Hollister Creamery, 91.50; Napa Riverside Creamery, 92.25.

Cheese scores above 90 were made by N. C. M. P. Assoc., Sacramento, and university farm creamery at Davis.

The event ended in a banquet at which Sam Greene of the California Dairy Council and Dean Van Norman of the farm school made addresses.

ECZEMA

Some cases of eczema are very obstinate. Give the horse a pound of Glauber salts dissolved in two quarts

of water to clear the waste material out of the bowels. Repeat every week. Be careful about the ration. Limit the hay to one pound per 100 pounds live weight daily and feed in addition to the grain ration of corn and oats a handful of oil meal at each feed. If scabs have formed, soak in sweet oil and three or four hours after application wash with warm water with enough castile soap added to make the water soapy. After the scabs have been removed apply twice a day an ointment of vaseline six ounces, sulphur two ounces, zinc oxide one ounce.

JAMES J. JEFFRIES TO SELL HOLSTEINS

The sensational announcement of the present year in Holstein circles is the dispersal of the famous herd owned by James J. Jeffries, Burbank. Every animal in the herd will be sold, including the great herd sire, King Segis Pontiac Jannek, and all of the wonderful show herd that made such a splendid showing at the last Los Angeles Livestock Show. The herd numbers 75 head and will be sold on Jeffries Ranch, Burbank, on Thursday, February 3, 1921.

HOLSTEIN BREEDERS TO MEET

Holstein breeders of Southern California are to meet at the ranch of James J. Jeffries at 10 o'clock Saturday of this week, December 11. Mr. Jeffries will provide a barbecue lunch, after which there will be a meeting of interest to Holstein breeders and an inspection of some of Jeffries' blue ribbon winners, and auto trips to the Hartsook and Maxwell ranches. A wire from M. S. Prescott, editor of the Holstein World, announces he will be here in time to attend this meeting.

OLYMPIC DAIRY FEED

Stands the Cream Separator Test

QUALITY and quantity of milk production determine dairy profits—not the price you pay for feed. Economy begins at the feed trough—not at the feed store.

You cannot compare dairy feeds on the basis of *first costs*. Base your calculations upon the health and strength of your cows, upon the length of their productive life, upon the amount of milk flow, upon the per cent of butter fat, and, finally, upon the price your product brings on the market.

The Result Will be Your Choice of OLYMPIC Dairy Feed

OLYMPIC Dairy Feed contains 1,000 pounds of the high concentrates to the ton, and is compounded upon the same standard of balance as the feed adopted by the Dairywomen's League of New York State during the war, after exhaustive tests and scientific experiments.

Made from properly balanced proportions of Ground Barley, Ground Oats, Linseed Oil Meal, Cotton Seed Meal, Soybean Meal, Corn Feed Meal, Wheat Bran, Corn Gluten Feed and Coconut Meal, five of which are the highest protein constituents now on the market.

IF YOUR DEALER HASN'T OLYMPIC DAIRY FEED, ADDRESS

The Portland Flouring Mills Co.
Merchants Exchange Building
San Francisco, California.
C. B. Sharp, Agent.

Other OLYMPIC Feeds Are

- Calf Meal
- Hog Feed
- Stock Feed
- Horse Feed
- Molasses Feeds
- Scratch Feeds
- Egg Mash
- Crate Fattener
- Molasses Dairy Chop
- Pigeon Feed

Big Type Poland Chinas at Auction

On account of changing my location, I am offering 60 head of Polands at public auction, at

Orland, Cal., Wednesday, Dec. 15th, 1920

The offering includes 30 spring gilts, 10 fall gilts, 10 tried sows and 10 young boars sired by Long Jumbo, Glenn Chief, Yates Big Orphan, Young Hadley and bred to Yates Big Jones, Y. C. 4, Reformer, and Black Bob. Send for catalog.

R. J. Yates

Orland, Cal.

600 Purebred Polands

Sows With Litters Sows Ready to Farrow

Gilts of All Ages Feeders

== AT BARGAIN PRICES ==

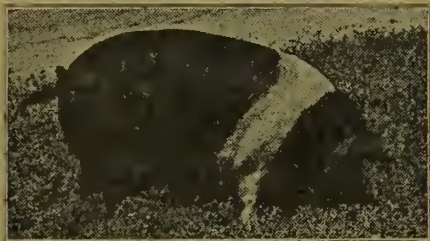
Take as many as you like. Lack of room requires us to discontinue our commercial piggery and you can benefit by acting quickly.

Santa Anita Rancho

Anita M. Baldwin, Owner

SANTA ANITA, CAL.

Blue Ribbon Hampshires



Our Grand Champion Hampshires have paved the way for breeding high-class Hampshires on the Pacific Coast. Blood lines of Lookout Cherokee, Director, Sioux Queen and Gen. Tipton dominate the herd. Both Hampshires and Shorthorns in finest thrift. Call at ranch or address

F. A. Langdon, Mgr.
Perris, Cal.

O.U.R. Hampshire Swine Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

F. C. Fairbanks Ranch Hampshires

The Grand Champion Boar HARVEY'S CHOICE 53147
at head of our great herd of brood sows

HARVEY'S CHOICE

Grand Champion Boar

at Los Angeles, 1919

18 High Class Brood Sows in herd—young stock for sale

A. E. Harvey, Manager

LOOKOUT CHEROKEE

Grand Champion at Liberty Fair

SIOUX QUEEN

Grand Champion at P.P.I.E.

Redlands, Cal.

Italian Vineyard Company

Guasti Berkshires

Weaned plgs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

Alex. Wilson, Supt., Guasti, Cal.

\$4000 Top for Vogel

A large crowd of farmers and breeders attended the semi-dispersal sale of H. E. Vogel at Fresno, Wednesday, December 1. The offering was of high quality and was presented in good condition. The feature of the sale was the 35 pound grand champion cow, Betsy Lamb Prilly. After a spirited bidding contest she was sold to A. W. Morris and Sons, Woodland, for \$4,000, that being the top price of the sale. Betsy is conceded to be one of the great cows of the breed. Morris and Sons secured five of the choice animals of the sale. Frank Helm, Fresno, was the heaviest buyer, taking a total of 13 head, including several of the tops. The Pottenger Sanatorium Company, Monrovia, J. D. Crawford, Fred Hansen and G. W. Fink, Fresno, were each heavy buyers. A total of 70 head sold for an average of \$405. That average included a number of young calves and also a number of cows sold at the close of the sale without health certificates. The top 25 females sold for an average of \$735.

The sale, which was held under the management of C. L. Hughes of the California Breeders Sales and Pedigree Company, made available to many buyers a very typy and desirable lot of breeding material from what is generally rated as one of the most substantial herds in the West.

Col. Ben A. Rhoades of Los Angeles was the auctioneer and he was assisted by Geo. W. Bell of Tulare. A representative list of sales follow:

- 1, Betsy Lamb Prilly, April, 1913; A. W. Morris & Sons Co., Woodland; \$4,000.
- 2, Imperial Bonita Mead, March, 1916; Fred Hansen, Fresno, \$650.
- 3, Miss Aralla Pontiac Burke, November, 1914; Pottenger Sanatorium Co., Monrovia, \$615.
- 4, Princess Valley Mead Walker, February, 1915; A. W. Morris & Sons, \$460.
- 5, Princess Aaggie Mead Walker, December, 1919; A. W. Morris & Sons, \$1,000.
- 6, Theta De Kol of Linwood, April, 1914; Fred Hansen, \$550.
- 7, Princess Wynima Pontiac, May, 1913; Frank Helm, \$450.
- 8, Lady Korndyke Morco Alcartra, June, 1917; G. E. Davenport, Fresno, \$200.
- 9, Kathleen La Verne, May, 1916; Frank Helm, \$725.
- 10, Fidella Korndyke, January, 1914; Pottenger Sanatorium Co., \$475.
- 11, Fidella Alcartra of Westlawn, October, 1917; A. W. Morris & Sons, \$400.
- 12, Oaklane Rector Flyke, May, 1912; Jack Borge, Dos Palos, \$275.
- 13, Westlawn Mayzell De Kol, February, 1918; Pottenger Sanatorium Co., \$310.
- 14, Roquette Burke De Kol, February, 1914; Jack Borge, \$310.
- 15, Westlawn La Polka Burke, December, 1917; J. D. Crawford, Burrell, \$350.

- 16, Princess Luana of Westlawn, May, 1914; Frank Helm, \$700.
- 17, Drussa Bona De Kol, September, 1913; Frank Helm, \$700.
- 18, Eva Riverside of Tuolumne, May, 1913; Pottenger Sanatorium Co., \$640.
- 19, Eva Aaggie Riverside, January, 1916; J. D. Crawford, \$535.
- 20, Eva De Kol Segis, September, 1917; Bridgford Holstein Co., Patterson, \$600.
- 21, Westlawn Charmian, December, 1917; J. D. Crawford, \$275.
- 22, Westlawn Segis De Kol, November, 1918; J. D. Crawford, \$235.
- 23, Queen Fidella De Kol, June, 1917; G. W. Fink, Fresno, \$190.
- 24, Lorene of Westlawn, May, 1918; A. De Wolfe, Ripon, \$210.
- 25, Lady Alice Juliana Burke, April, 1914; Pottenger Sanatorium Co., \$615.
- 26, Lady Jane Burke, April, 1914; H. De Wolfe, \$660.
- 27, Burke Mechthilde Fancy, March, 1917; Chas. P. Novels, Long Beach, \$710.
- 28, Westlawn La Polka Kathleen, June, 1917; J. D. Crawford, \$510.
- 29, Hermiana Ceres Chruela, September, 1913; A. E. Marsh, Kerman, \$200.
- 30, Ideala Newtonla, June, 1911; J. D. Crawford, \$260.
- 31, Fidella Cloverleaf Jullanna, April, 1912; Fred Hansen, \$250.
- 32, Autumn Bud of Sunnyside, November, 1911; F. W. Bishop, Fresno, \$210.
- 33, Westlawn Fidella Alcartra, November, 1917; Frank Helm, \$250.
- 34, Westlawn Gwemmar Alcartra, November, 1917; Frank Helm, \$240.
- 35, Cupid Ideal, October, 1916; Milne Bros., Riverdale, \$325.
- 36, Vera Lloyd, August, 1916; Chas. Novels, \$400.
- 37, Westlawn Princess Aralla, December, 1917; Frank Helm, \$300.
- 38, Confidential Cloverleaf, December, 1914; Frank Helm, \$975.
- 39, Confidential Aralla De Kol, August, 1917; Chris Thompson, Tranquility, \$260.
- 40, Arline Bona De Kol, December, 1913; Frank Helm, \$300.
- 41, Oma Eltina, January, 1915; Pottenger Sanatorium Co., \$290.
- 42, Princess Fidella Juliana, December, 1914; W. M. Barcus, Fresno, \$195.
- 43, Princess Kwemmar, March, 1917; Bridgford Holstein Co., \$500.
- 44, Fidella Claudine, March, 1916; J. V. Masten, Fresno, \$210.
- 45, Westlawn Primula Pontiac, February, 1917; J. D. Crawford, \$350.
- 46, Belle Segis of Linwood, April, 1917; J. D. Crawford, \$300.
- 47, Josephine De Kol Parthena, June, 1920; Frank Helm, \$250.
- 48, Liffretta Korndyke Pletje, March, 1911; W. W. Beard, Kerman, \$300.
- 49, Mercedes Korndyke De Kol J. hanna, 3rd, December, 1915; Chris Hansen, Tranquility, \$405.
- 50, Minnie Korndyke of Nevada, February, 1915; Z. T. Withrow, Fresno, \$210.
- 51, Woodlawn Cornucopia Josephin August, 1919; Frank Helm, \$250.
- 52, Astrea Segis Pontiac, March, 1920; Chas. P. Novels, \$320.

BULLS

- 1, King Prilly Mead, April, 1919; Rot T. Curtis & Sons, Exeter, \$400.
- 2, Westlawn Kathleen Mead, January, 1919; Frank Helm, \$285.

Milo Proves Welcome Immigrant

MILO, the sorghum grain crop which was introduced into this country—probably from Africa—about 1880, has come to stay. The bureau of plant industry, United States department of agriculture, advances the statement that milo produces better yields than any other grain sorghum in those sections of the sorghum belt where the rainfall is low and the altitude high. So definite is its adaptation to these conditions that milo sowing has practically ceased in South Carolina and Georgia, where it was first introduced, and is now confined to the Southern Great Plains area and the far Southwest. Here moisture and altitude give the grain a better environment. Here also milo furnishes an essential grain crop under conditions too severe for corn. Its use is limited to the South and Southwest. Selection Eliminated Faults

The usefulness of the improved milo with its short, single stem and its single, erect, heavy head is well appreciated. As introduced, milo failed in many desirable points; the stems were of unequal height, and the heads were partly erect, partly leaning, and partly hanging or goose necked. Selection has eliminated most of these faults and there is little physical resemblance between the original type and the improved one.

In 1899 about 25,000 acres of milo were grown in this country, and the crop was worth \$200,000, but in 1918 a crop of 1,205,000 acres was grown, and the yield that year was valued at \$21,300,000. No better testimonial need be offered. At a department of agriculture field station in the Texas Panhandle, Standard milo, over an 11

year period, gave an average yield of 20 bushels to the acre. The Dwarf variety, at the same station and for the same period, yielded 24 bushels to the acre.

Chemical analysis shows that milo grain contains 9.31 per cent water, 1.61 per cent ash, 1.99 per cent nitrogen, 12.49 per cent protein, 71.83 per cent carbohydrates, 3.22 per cent fat and 1.48 per cent fiber. For purposes of comparison the average content of corn follows: 10.60 per cent water, 1.50 per cent of ash, 10.30 per cent of protein, 70.40 per cent of carbohydrates, 5 per cent of fat, and 2 per cent of fiber.

Milo is seen to have a higher protein and carbohydrate content than corn, but its fat percentage is low. As fat is the most valuable part of the grain for fattening stock it is a parent that milo falls a trifle below corn for this purpose. Experts agree that milo has about 90 per cent of the feeding value of corn. As food for humans, it is about equal to corn.

Cutting Off the Heads

Where the planting is small the common method of harvesting is to cut off the heads with a knife and to pile them into a wagon. The heads are then cured by piling in windrows or a better method—by putting them in well ventilated bins. A corn bind which cuts and binds the stalks can be used or the milo may be harvested with a grain header.

The grain is larger and softer than wheat. It is threshed as wheat, threshed but with the cylinders revolving at only two-thirds the speed used for wheat, and sometimes with fewer teeth in cylinder and concaves. The precautions are necessary, says F. H.

rs' Bulletin 1147, to prevent the milo rains from cracking.

Ground milo heads (head chops) or he ground grain (milo chops) is fed o cattle, sheep, hogs and poultry as or is fed. It is also fed in the undle as roughage. For most purposes it should be cracked or ground and should be balanced with other eeds rich in protein, alfalfa, clover, cottonseed meal or the like.

POSTERIOR PARALYSIS IN SWINE

Swine breeders are becoming much concerned with a condition often ound in hogs known as posterior aralysis.

In such a condition the animal par- ally or totally loses control of its ind quarters; otherwise, it remains pparently healthy.

When seeking the specific cause of he affection each of five factors may e considered as the source of dis- urbane:

First, injuries received from large nimals running in the same lot or asture or otherwise.

Second, impaction of the posterior arge bowels with masses of dung hich may produce pressure on the essels and nerves in the pelvic or hip egion.

Third, kidney worms (Stephanurus entatus). Although this worm is not ound to any great extent in California vertheless it is accountable to a arge degree for such conditions in ome sections of the country and ould receive consideration especially n autopsy.

Fourth, heavy suckling. The brood ow either may not be receiving a roper ration or there may be defec- ive assimilation and consequent fail- re to absorb the nourishment required oth for the maintenance of herself nd her pigs to compensate the "usual apid growth."

Fifth, rheumatism or lumbago. This ay be produced in hogs that sleep n damp quarters either in pens, ma- ure piles, or hay stacks. A board off he cot may permit a draft to blow on he sleeping hog and produce a weak- ned condition of the loins.

Some persons consider a hog quite esistant to cold because of the thick yer of fat under the skin. This is a mistaken idea and many swine affec- ions can be prevented by supplying he animals with comfortable quar- ers. (S. O'T.)

HOME TANNED HIDES GIVE UNCERTAIN PROFIT

Apparently it doesn't pay the farmer o tan his own leather. The bureau of hemistry, United States department of agriculture, is conducting leather naking experiments upon the scale to hich the average farmer would have o adjust his work, and specialists say hat the results obtained thus far do ot warrant general practice. Good eather can be made in individual tan- eries, but the results are too uncer- ain to give reliable profits.

The work was taken up by the de- artment when it became evident that he farmers were feeling the injustice of a transaction wherein they sold a whole cowhide for less than they paid ut for a pair of work shoes. Investi- gation shows that the leather dealer is ot entirely to blame for the low rices that the farmer receives for his ides. Too often the hide from the arm cow is taken off in a careless manner that leaves the skin full of uts and holes—farm hides are never as uniform as those bought from the acking houses where the animals are arefully graded and the skins re- moved by expert skimmers. For that eason the hide buyer is always will- ing to pay more for the packer's pro- duct than he can offer the farmer.

Then, too, the farmer sells his cow- ide to the junk dealer, who deducts his profit from the price he pays. Whenever it is possible to collect a umber of hides and skins it will pay he owner to deal directly with a large ealer, the specialists say.

USE THE RANGES

The United States department of griculture has issued Circular 134 hich touches upon livestock grazing s a factor in fire protection in na- ional forests. It has often been on- sidered that such grazing was quite he opposite of protection, but the enefits as determined by experts of

the department are summarized in tht following conclusions:

Recognizing the value of normal grazing in fire protection of timber- lands a study of its application to the national forests suggests:

Timely use of present ranges or the removal of rank vegetation before it becomes unpalatable.

Utilization of all suitable unused lands by the development of water and trails and the elimination or control as rapidly as possible of all factors hich prevent present use.

Closer consideration of the class of stock to be grazed where fire protec- tion is involved.

Location of driveways and trails so as to form the most efficient fire lines and means of communication.

Overgrazing of strategic points. Minor damage at such point may re- sult in saving large areas of forest from destruction by fire.

Study of lightning fires on the for- ests with a view to determining whether lightning zones exist and whether grazing may be made to assist in preventing the spread of fire.

Fuller enlistment of the moral and active support of some 25,000 addi- tional persons in the forests on ac- count of grazing uses.

Closer correlation of the livestock industry of the forests with the fire protection plans.

Veterinary

Scours

I have a mare ten years old which has had scours continually for the last six months. Previous to that time she was subject to it at certain times. Aside from the scours she appears very well. She is in very good condition. She eats and drinks heartily and is fed altogether on barley hay. Since she feels so well it does not seem possible that the trouble could be indigestion. Will this condition cause indigestion in time? Is it advisable to use some remedy to correct this trouble and if so what would you advise?—Subscriber, National City.

It would seem from the description of the trouble that there is a very strong possibility that your mare's teeth are at fault. I would suggest that the best thing for you to do would be to consult a veterinarian and have him float the teeth. The food is probably not being sufficiently masticated. There are, however, a number of other conditions that might cause the above mentioned trouble. Some horses are more or less predisposed to trouble of this kind. I would suggest that you do not give feed or water just before using but give the feed and water as long as possible before the horse is to be put to work. It might be desirable to give a purgative for this purpose and in a case where this trouble has been hanging on as long as you state, castor oil would be the best although raw linseed oil may be used. You can give about a pint or pint and a half of either, as a drench. If it is necessary it can be mixed up with milk or warm water. This will probably not be necessary, however. This should be followed by the use of easily digested feeds which should be given sparingly. It would perhaps be well to give the animal only lukewarm water as cold water will sometimes prove slightly irritating. If the purging continues it can sometimes be checked by giving a little wheat flour in water or by giving the animal starch water to drink. Some medicines may also be given but if the above mentioned remedies are not satisfactory it would be advisable to consult a veterinarian.—G. E. G.

MULLET IN SALTON SEA

Referring to your article on the mullet fisheries of the Salton Sea in November 20 issue, the theory of the fish coming into this sea by swimming up the river from the Gulf of California is not only plausible but quite probable; for many mullets and some sheephead come up the Withlacoochee River in Florida from the gulf, some 50 miles.

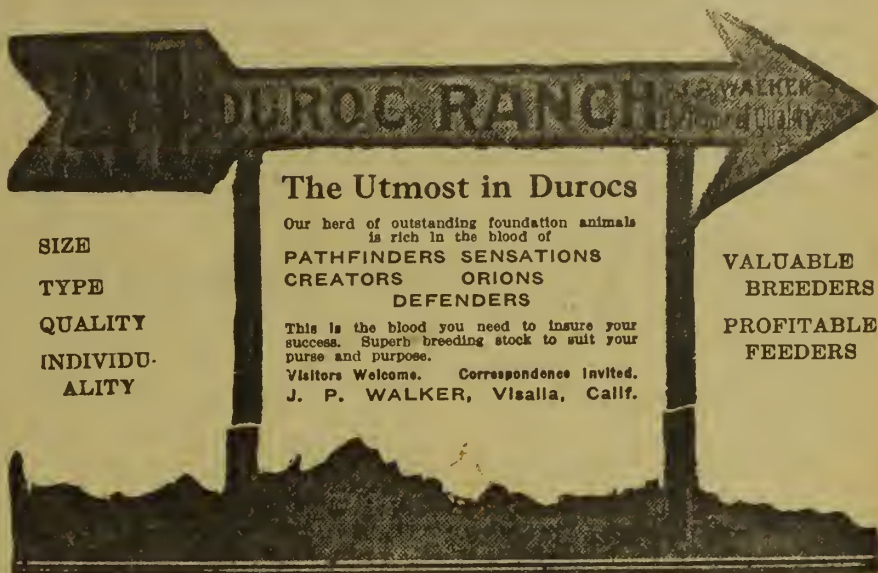
The writer has speared many mul- lets from a boat at night in the waters of Blue Spring, a tributary of this river, whose water is as clear as crystal and from eight to 12 feet deep. —R. R. Snowden.

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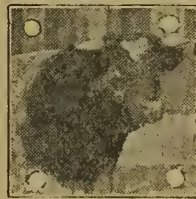
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WEBSTER, WEBSTER & BLEWETT, Savings and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

FARM LAND FOR SALE

Agriculture—the Mother of Civilization but who is going to do the work who the hired man quilts or the boys go to the city. Don't try to farm so much land that you make life a burden. We have an ideal one man proposition to offer you. Soil and climate where you can grow anything that grows in California. Water piped under high pressure to you door for irrigation and domestic purposes. Good schools and churches in a 100% AMERICAN colony. A limited amount of cleared land for \$200 per acre. **PARADISE RANCHITA,** Paradise, California.

For Sale—55 acres best sandy loam soil on state highway 1½ mile west Merced California. All under irrigation. Ideas pump plant. Good house, barn and out buildings. 19 pure bred Guernsey cattle 4 extra good young brood mares, 28 acres in alfalfa. 100 tons hay in barn, two ton silos, other things, all farm tools necessary, part cash and terms. For full information write Box 644, Merced, California.

For Sale by Owner—50 acres choice river bottom alfalfa land, gradually changing to prunes, apricots, pears, peaches, vine etc.; 2½ miles from growing railroad town 30 miles from Fresno, California. N. alkali or hardpan, abundance of water. Priced at half value to insure quick sale and half down. Price \$9400. Box S W F Cultivator, Los Angeles.

For Sale—39½ Acres under government project, all level; 13 acres in good standing alfalfa, family orchard, good barn and other little buildings. 1½ trees for 6 acres included. Balance in barley. Can be bought for \$12,000. Half cash, balance on easy terms at 6 per cent. Address Owner, Andrew Peter, Orland, California.

For Sale or Exchange, 120 acres of alfalfa land in Antelope Valley, near Lancaster. 20 acres in crop, plenty of flowing water, level land, good house, barn and implements, near railroad, price \$12,000, one third cash, balance easy terms or will consider first class exchange in Los Angeles property. E. B. Care Cultivator.

For Sale—60 Acres alfalfa land in good water belt 4 miles from town. About 30 acres cleared, 7 in alfalfa, pumpkin plant, windmill, house, plenty sheds and corrals. Price \$9,000.00. May exchange for smaller place within 40 miles from Los Angeles in walking distance from school. Address: Box 266, Lancaster, California.

For Sale—80 Acres of Land suitable for Beets, Alfalfa or Grain, on paved road ½ mile from school. Artesian water a 200 ft. No buildings, land is all plowed. Will sell at the attractive price of \$10,000. Herman Naumann, Owner, Oxnard, California.

For Sale—55 acres of A-1 land near school and good town, near high school. Water goes with land. 30 acres of this land good for fruit or vines. Nine yearling mules, two good saddle horses. Chas. Hubbard, Riverdale, California.

For Sale—10 acres, 640 Valencias, 30 Fuerte Avocados, 11 room house, garages, water, gas, electricity. West of Charter Oak. Address Owner, Box 50 Charter Oak, California.

For Sale—5-10-20-40 Acre Alfalfa and Dairy Ranches. Under U. S. Government Irrigation. Write for full information. Falk & Son, Orland, Glenn County, California.

\$20.00 to \$25.00 Per Acre—Fine level irrigable fruit and alfalfa lands, abundant water, fertile soil, ideal climate, close to railroad. Write Chamber of Commerce Willcox, Arizona.

For Sale—20 acre date garden, ¼ mile Indio. Best date growing section Coachella Valley. E. A. Miller, Box 19 Indio, California.

For Sale—240 acres, very desirable; 20 acres very rich delta suitable for gardening or potato soil. Great bargain \$25.00 per acre. Box 3, Wasco, California.

For Sale—3½ acres, irrigated, young orchard, small house, well-box. Address I. H. Behymer, Yucalpa, California.

For Sale—Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

Alfalfa, Orchard and Delta Lands. Alex. Murdock, Brentwood, California.

TURKEYS

Turkeys—"Goldbank"—"Copper King V strain. Selected Giant Bronze tom sired by son of famous "Copper King V. First Prize Yearling, N. B. T. Club Show Madison Square, N. Y., January, 1919. Bred to 20 lb. hens. Egg orders taken. Prices reasonable. Address: BRONZ KING MOUNTAIN FARM, P. O. Box 30, Calistoga, California.

For Sale—Pure bred young Bronze toms—\$15.00; hens, \$10.00. Satisfaction guaranteed. Have pure bred Buff Orpington cocks and cockerels \$5.00, \$7.50; hen \$3.50 to \$5.00. Mrs. M. L. Trewhitt, Route B Box 47, Hanford, California.

Earl E. Sanders, Modesto, breeder of Mammoth Bronze turkeys and Single Comb White Minorcas is booking order for eggs, chicks and breeding stock. Route D, Box 1880.

Mammoth White Holland Turkeys for sale—Choice hens and toms from our famous breed of large vigorous turkeys. Earl V. Smith, Loma Vista Ranch, Willets, Calif.

Large Number of Choice Bronze Tom and hens, also geese and herding Collie Dogs. Shipped from St. Helena and San Miguel. John G. Mee, San Miguel.

Choice Breeding Stock—All ages. Order early. A. W. Gauger, Dos Palos, California. Breeder of Mammoth Bronze Turkeys.

Bourbon Red Turkeys from extra fine prize winning stock. Write for prices. Mrs. John M. Bernstein, R.R., Hanford, Calif.

Bourbon Red Turkeys, Buff Orpingtons, The Ferris Ranch, S. Reservoir, Pomona, California.

Mammoth Bronze Toms for breeding. Large type, vigorous, cheap. Box 18 Olive Avenue, Patterson, California.

Bourbon Red Toms for sale. L. S. Gross, Scottsdale, Arizona.

SEEDS AND PLANTS

FOR SALE—POST PAID
amous Catalonia Sweet Spanish Onion Seed
(the sweetest in the world)
and
Valencia Sweet Spanish Onion Seed
these seeds are just imported from
Spain and are in fine condition to germi-
nate. They can produce four hundred or
more sacks per acre. Rich ground not
necessary. Best time to plant from Sep-
tember to January to insure big crop.
Sample packages 30 cents. Write for price
of the pound. Jose Llach, Ventura, Cal-
ifornia.

errydale Berries and Roses—"De Roo's
Mary Lewis" New Everbearing Rasp-
berry. The finest, largest and best flav-
ored berry grown. Can ship 500 miles
in perfect condition. Plants strong and
need no supports. Plants ready for deliv-
ery now. Price per 12, \$3.00; 100,
\$20.00; 1,000, \$150.00. Sample plant 30
cents, parcel post. Write for catalogue,
sent on receipt of 5 cents in stamps.
Desires wanted. Our salesmen are
taking good up to \$600.00 per month
at **ERRYDALE GARDENS**, Dept. D, 1715
Cobster Street, San Francisco, California.

awberries—1,000,000 plants, leading var-
ieties; 200,000 Cuthbert raspberry; 100,
000 Black Cap; 100,000 Loganberry
etc. Order now; low prices. Also 100,000
peach seedlings—will graft in
pines or prunes on contract for fall deliv-
ery 1921. Lafayette Nursery Company,
Lafayette, Oregon.

For Sale—Best rooted grape vines of
Thompson, Malaga, Emperor, Sultana,
Muscat and Fig Trees of Calimyrna,
ack Mission, Adriatic and red wonder-
ful Pomegranate Trees at cheap price.
This stock is growing at Madera, Delano
and Cutler. P. O. Box 695, Dinuba, Cal-
ifornia—S. K. Hahn and Company.

erry Plants—Strawberries, Loganber-
ries, Currants, Gooseberries, Blackber-
ries and Raspberries, for immediate deliv-
ery. All stock first class and strictly true
name. Write for prices. M. J. MONIZ,
erry Specialist, Sebastopol, California.

etpald, Brandywine 1.75; Oregon and
Ettersburg 80, \$2.00. Booking orders
for Corys and Burbank Thornless, 35,000
each. Order quick. Bishop's Nursery,
Bghland.

erry Winningstadt Cabbage Plants,
strong and healthy stock, \$3.00 per
100. Moss curled parsley, \$4.50 per
100. M. Pazos, 1639 E. 53d St., Los An-
ges.

andywine Strawberry Plants from
stock which produced \$3,000 worth of
ries from acre this season. Price
asonable. Lon King, 1158 West Fourth,
verside, California.

ubarb Plants—Wagner's Giant 1 year,
per dozen 50c; per hundred \$4.00. Wag-
ner's Giant, 2 year, per dozen \$1.00; per
hundred \$8.00. Seed per pound \$5.00.
errier Bulb Co., Santa Cruz, California.

erry Thornless Mammoth—Largest and
est blackberry; ripens early; few seeds.
rite for descriptive price list. Get
ants from William Mortenson, Route
Box 209, Lodi, California.

awberries six months in the year.
Plant Everbearers, Superb, Progressive,
nericus, \$250 per hundred prepaid.
atalogue. Fred Leissler, R. 6, Box 429,
attle, Washington.

For Sale—Mariout Seed Barley. Good
strong seed and free from foreign seeds
dirt. Price \$5.00 per hundred pounds.
and cash with order. Fairdale Farms,
F. D. 1, Ferris, California.

awberry Plants For Sale—First year's
growth and well rooted. Marshall and
proved New Oregon. Write for price.
Christiansen, R.F.D. 2, Canby, Oregon.

For Sale—Mountain grown strawberry
plants. Brandywine \$1.50 and Banner
00 per hundred by mail postpaid. B.
yan, Camp Baldy, Calif.

awberries—Wm. Belt, best among 15
varieties tested. Two dollars per hun-
dred fifteen per thousand. Gervais Nur-
ery, Terra Bella, California.

mpkin Seed—Mixed Pumpkin Seed,
good germination, 25c per lb. Aurora
ed Mill, Stockton, California.

For Sale—Unrooted grape cuttings, fruit
trees, rooted grapevines. Burke's Nur-
ery, Lodi, California.

ne Klondyke and Brandywine plants for
sale, \$12.00 per M. L. E. Hall, R. D.
2, Box 61, Pasadena, California.

awberries—Plant 'em now. Cash
Nurseries, Sebastopol.

MISCELLANEOUS

PROTECT PRUNING CUTS

ee cuts or wounds, if left exposed, are
ry likely to become infected. Prevent
fection by prompt application of PABCO
RUNING PASTE. Ask your dealer.
Manufactured by the Paraffine Compan-
y, Inc., San Francisco, California.

INSURE YOUR TREES AGAINST INFECTION

ur orchard is a valuable investment.
make sure that every tree produces a
maximum return, protect pruning cuts or
her wounds from infection with PABCO
RUNING PASTE. Ask your dealer.
Manufactured by the Paraffine Compan-
y, Inc., San Francisco, California.

DON'T LET YOUR TREES DIE

otect pruning cuts and wounds against
fection with Pabco Pruning Paste. Ask
ur dealer. Manufactured by The Para-
fine Companies, Inc., San Francisco, Calif.

DON'T NEGLECT TREE WOUNDS

lected tree wounds lead to wood-rot
wood decay which is responsible for an
ailing loss of valuable producing trees.
otect pruning cuts or other wounds on
ur trees with Pabco Pruning Paste.
Ask your dealer. Manufactured by the
Paraffine Companies, Inc., San Francisco,
California.

asting—Contracts taken anywhere in
state for tree hole blasting and planting
res. Satisfaction guaranteed. Special
ices on large acreage. Zuur & Com-
ny, Nurserymen and Treeplanters,
nta Rosa, California.

MISCELLANEOUS

NEW PINE LUMBER FOR SALE

Will sell delivered or at yard:
250M 1x6 S1S1E common,
100M 2x6 S4S common,
50M 2x6 S4S common,
50M 2x10 S4S common,
50M 2x12 S4S common
Also 400,000 ft. 1-in and 2-in. once used
denailed form lumber.
B. R. Lakin, 926 Orange St., Los Angeles.
At rear of new Arnold Garage Building.
Phone 16637. Ask for Mr. Lakin or Mr.
Busby.

Powerene Is Equal to Gasoline at 5c a
gallon. Salesmen and agents wanted.
Exclusive territory granted. Powerene is
guaranteed to be harmless, to remove
and prevent carbon, doubling the life of
all gasoline motors, saving repairs, add-
ing snap, speed, power. An amount
equal to 20 gallons of gasoline sent to
any address in the United States, charges
prepaid for \$1.00. W. Porter Barnes,
Box 424A32, Santa Rosa, California.

For Sale—About 100 ton A-1 pure harley
hay. Will put aboard car Hollister.
For price write or call Harry Locke, two
miles east on Santa Anna Road, Hollister,
California.

I Have Cash Buyers for salable farms.
Will deal with owners only. Give de-
scription and cash price. Morris M. Per-
kins, Columbia, Mo.

For Sale—1,000 Bolton 4 and 6 qt. fire pots
for frost prevention—complete with
covers, all or part, at half price. I. Ford,
915 W. Cypress Ave., Redlands.

For Sale—24 Pioneer and Jubilee Electric
Incubators, slightly used—capacity 640
and 270 eggs. Fanciers Exchange, 640 S.
Main Street, Los Angeles.

Leaf Tobacco—prepaid, 3 lbs. either
chewing or smoking \$1.25. WHICH?
5 lbs. weak \$1.30. Guaranteed. Aden
Francis, Dept. Y, Dresden, Tennessee.

MACHINERY

Used engine and complete pumping plants
for sale. You can save yourself several
hundred dollars, buying now from us.
These have just been replaced by elec-
tricity and many of them are as good as
new. They are better than the light en-
gines put out recently. A size for every
farm.

- 25 H. P. Fairbanks Morse.
- 32 H. P. Fairbanks Morse.
- 10 H. P. Fairbanks Morse.
- 18 H. P. Weber.
- 17 H. P. Sheffield.
- 7 H. P. Commercial.
- 12 H. P. West Coast.
- 18 H. P. Western.
- 20 H. P. Samson.
- 15 H. P. Fairbanks Morse.
- 15 H. P. Samson.
- 6 H. P. International.
- 20 H. P. Fairbanks Morse.
- 15 H. P. Western.
- 25 H. P. Western.
- 20 H. P. Fairbanks.
- 16 H. P. Stover.
- 20 H. P. Simplicity.
- 12 H. P. Simplicity.
- 16 H. P. Western.
- 3 H. P. Simplicity.
- 15 H. P. Sterns.
- 15 H. P. International.
- 3 H. P. Fairbanks.
- 15 H. P. Z Fairbanks.
- 20 H. P. Y Fairbanks (new in crate.)
- 25 H. P. Y Fairbanks (new in crate.)

These engines have pumps with them
to match. Come look them over and you
will buy.
Crowe Hardware & Electrical Works,
Phone 90, Tulare, California.

For Sale—Rebuilt windmills, tanks,
pumps, irrigating pipe fittings, cylin-
ders, rods, valves.

WHY PAY MORE?
New 1,000 gal. galv. tanks, \$49.25; 2,000,
\$69.25. Used material absolutely cheap-
est good servicable machinery can be pro-
duced for. Also buy. Demmitt Co.'s of-
fice, 120 N. Main, Los Angeles.

For Sale—10 ft. Superior Drill. Two
power lift tractor plows. Tractor dou-
ble disc harrow. Drag harrow, three
walking plows, spring tooth harrow. New
and slightly used. See us when in the
city. Cheap for cash. ARNOTT & COM-
PANY, 112 So. Los Angeles Street, Los
Angeles.

New Gas Engines For Sale—Have several
engines from 6 h. p. to 16 h. p. equipped
with oil burner attachment for sale at
cost. Installing motors and cannot use.
Address Box 655, Cultivator, Los Angeles.

For Sale—Kirstin One Man Stump Puller
as good as new. Have no more use for
it and will sell cheap. Address P. O. Box
341, San Fernando, California.

For Sale—Merry Garden Tractors. Circu-
lars and demonstration free. Dwight
E. Smith, L. A. County Agent, 1645 North
Normandie Avenue, Los Angeles.

For Sale—At low price, Utilitor tractor,
complete equipment, practically new,
first class condition. W. M. Booth,
Downey, California. Phone 692.

For Sale—Saunders 50-inch tractor disc
plow in good shape; \$250 cash. Flem-
ing Bros., Friant, California.

For Sale or Exchange—2 ton truck in
good condition, \$800. Would consider
orchard tractor. Box 333, Placentia.

LIVESTOCK

BUTTE CITY RANCH

Shorthorn Cattle, Shropshire Sheep,
Berkshire Hogs, Shetland Ponies, Bronze
Turkeys, White Plymouth Rocks. Stock
for sale at all times. W. P. Dwyer and
W. S. Guilford, Box C, Butte City, Glenn
County, California.

For Sale—Handsome young Togg. Buck,
born June 23, 1920; well marked, fawn;
disbudded. Sire pure bred Togg. Prince
Bismark 988. Dam "Anita" 7/8 Togg.,
good milker. A. M. Starr, R. D. No. 1
Box 627, Long Beach, California or call at
3404 Grant Street.

For Sale—Fine large 5 year old Ayrshire
cow from McFarland's fine exhibit at
L. A. Stock Show, milking and bred.
Price \$300.00. Also Hampshire sows and
weanlings, both sexes, \$20.00 up. R. M.
CARTWRIGHT, Gardena, California.

Duroc Hogs and Shropshire Sheep. Pure
bred stock for sale at all times. J. J.
Prendergast, Redlands.

WANTED

Practical Farmer and Orchardist—Prefer-
ably married man, with some ready
cash; to locate on and cooperate with me
to clear, plow and plant 60 acres choice
fruit, grape and nut land, 10 minutes west
of Paso Robles, San Luis Obispo County,
joining famous "Laderwiski's Ranches,"
Midway between New Oil fields at "San
Miguel" and "Carisa Plains" where three
large Oil Syndicates expect to strike
"gushers." Fine proposition for a hus-
tler. C. C. Wilmot, 437 South Broadway,
Los Angeles.

Wanted Ten Thousand Good Dairy Cattle
to consume our surplus alfalfa hay.
Dairy opportunities unexcelled on the
Newlands Irrigation Project. Never fail-
ing water supply. Adequate storage.
Mild climate. Good dairy market. Great
variety of crops. Our alfalfa hay unex-
celled in feeding value. Supplements not
essential. Orders handled: Leasing or
feeding contracts available. Address
Newlands Project Alfalfa Association,
Fallon, Nevada.

Wanted—Walnut Meats. Fred L. Mit-
chell & Son, 214 French Street, Santa
Ana, Phone 551-M.

Wanted—To hear from owner of land for
sale. O. K. Hawley, Baldwin, Wisconsin.

GOVERNMENT LAND

300,000,000 Acres Free Land in U. S.—
Send for free descriptive circular of our
100 page book THE HOMESEAKER
which tells you where this land is and
how to acquire it, or send \$2.00 for book
direct. The Homeseeker, Dept. M, 336 S.
Broadway, Los Angeles, California.

For Sale—Government irrigated lands.
Dry farm lands, stock ranches and city
property. For information about the
United States Government Project at Or-
land and prices on fruit and alfalfa farms
and dairy ranches write to Collier and
Leonard, Orland California Box 164

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and
correspondence stationery for the nur-
ery, seed and florist trade; half tone cuts
of many standard plants. Correspond-
ence invited. The Kruckeberg Press,
237-241 Court St. Los Angeles

FERTILIZERS

Gypsum and Lime—Price Right
Order early for prompt delivery
E. B. Matthews, 1010 N. Madison Ave.,
Pasadena.

FARMS NOT WEARING OUT

We often refer to some crops such
as potatoes "running out," to our lands
as depreciating in real producing value
and sometimes infer that generally we
are on the downward grade, but we
note in report of agricultural college
extension service of the state of Ohio:

Ohio's crop yields have increased
approximately 20 per cent in 20 years
according to the recent census. Bet-
ter farming methods are declared to
be showing results. For the ten years
preceding 1900 the average yield of
wheat per acre in the state was only
14.7 bushels; for the ten years preced-
ing 1920 it averaged 17.1 bushels. With
oats for the ten years preceding 1900
the average yield was 30.5 bushels;
for the ten years preceding 1920 it was
36.4 bushels. With corn, which occu-
pies more acreage than any other crop
in the state, the average yield for the
ten years preceding 1900 was 31.4
bushels; for the ten years preceding
1910, 35.6 bushels, and for the ten
years preceding 1920, 38.5 bushels.

"Drainage, rotation, better seed,
fertilization and cultivation are lead-
ing to increased yields," says Dr. J.
I. Falconer of the college of agricul-
ture. "That it is still possible to
considerably increase the crop yields
of the state is shown by experiments
at the Wooster experiment station,
where yields of nearly twice the state
average have been secured for the
past ten years. If the prices of farm
products are sufficient to justify the
expenditure of labor and capital, the
agricultural output of Ohio could be
easily increased by 25 per cent in the
next ten years. Whether or not this
will be done will depend largely on the
prices received for the products of
the farm."

We think the census will also show
that as to California there is a de-
cided upward trend in acreage as well
as total production.

ALASKAN WOOD PULP

Cheap paper and print are essential
in these days for human progress.
Therefore, the recent visit of Chief
Forester Greeley to Alaska is perhaps
as important as many things that fill
pages in our newspapers. It turns out
that our Alaska, which we bought for
\$7,000,000 only 53 years ago, has more
than 100,000,000 cords of pulpwood
now standing, and can produce 1,500-
000 tons of paper annually under sci-
entific forest management. If this
hitherto neglected resource of Amer-
ica is vigorously developed and the
cost of paper is brought down to five
cents a pound or less, no mathemati-
cian can estimate what it means to

this nation in years to come. Simply
in dollars and cents, however, it would
pay the total cost of Alaska 21 times
over every single year for all time to
come.

Californians are now constructing
the first Alaskan pulp plant at Snet-
tisham (the Alaska Pulp and Paper
Company). They begin with 100,000-
000 feet of pulpwood bought from the
forest service. It is also said that
there is pulpwood to supply at least
six large mills at various points on
Puget Sound.—Charles H. Shinn.

EAT MORE RICE

Some people do not like rice. This
is largely because they do not know
how to cook it properly nor how to
combine with other foods. When prop-
erly prepared there is no better or
cheaper food and no other can equal
its combination of deliciousness, econ-
omy and high food value.

It will also interest many to learn
that here in California we grow a type
of rice which is the finest cooking rice
produced anywhere. The reason it is
not more popular is because most of
us don't realize that our Golden State
short grain rice is superior to the long
grain rices of the Orient and the South-
ern states. The mellow, sweet Cali-
fornia rice meets with instant demand
wherever its qualities are understood,
and there is no food superior in flavor
and wholesomeness to our own rice.

DEEP EYED POTATOES

After three years' work at the Mon-
tana experiment station with a deep
eyed potato variety in an endeavor to
improve the commercial value by se-
lecting to a shallower eyed type, the
yielding power was greatly reduced,
and careful field counts showed 90 per
cent of the plants to possess degen-
erate tendencies. Studies of hills and
tuber characteristics in seed plats
planted in 1919 on a tuber unit plan
and classified as normal vigorous,
intermediate, and degenerate, showed
conclusively that shallowness of eye
was correlated with degeneracy. In
practically all varieties, the most per-
fect tubers as regards size, form and
depth of eye, came from intermediate
plants, while in advanced degenerate
types the depression about the eye was
often entirely absent.

Tests were also made to determine
the value of thinning as a substitute
for seed pieces of uniform size. All
hills were thinned to a single stem
as soon as the plants were large
enough to pull. Plats planted with
seed pieces averaging 1.04 ounces gave
average yields of 20,575 pounds of mar-
ketable tubers per acre, while those
planted with seed pieces weighing 0.33
ounce yielded 19,447 pounds per acre.
On other plats 1.3 ounce seed pieces
yielded 17,867 pounds compared with
16,097 pounds from 0.33 ounce seed.
Field counts before thinning showed
plats planted with 1.3, 1.04 and 0.33
ounce seed to average 2.27, 2.22 and
1.47 stems per hill, respectively. Re-
sults, though not conclusive, show
that variations in yield following plant-
ing of large and small seed pieces are
largely a matter of stand, i. e., the
number of plants produced per seed
piece planted.

DUCKS DESTROY MOSQUITOES

Experiments and observations by
such scientists as McAtee, Lockwood
and Dixon have proven that ducks
may play an important part in the
struggle against malaria. As soon as
they are hatched the ducklings wander
over to the pools and feed on the
larvae of insects, among which are
those of the anopheles mosquito. Duck
breeding for this purpose has been of-
ficially recommended in Indo-China for
the most unhealthy regions of Tonkin,
Eastern Cochinchina and Cholon.

Estimates that the tentative Boulder
Canyon dam project on the Colorado
River basin would cost at least \$75-
000,000 have been laid before a confer-
ence here of the boards of directors
of the Coachella Valley Water Users
Association and the Imperial Irriga-
tion District by Arthur P. Davis, direc-
tor of the United States reclamation
service.

The state fish and game commission
is proposing to ask the legislature to
make a game sanctuary in Butte and
Yuba Counties. The proposal is to
take in a 20,000 acre tract.

GERMOZONE

"the Best Remedy for
Poultry and Pet Stock"

The old reliable, proven remedy for Roup, Colds, Canker, Swelled Head, Bowel Trouble, Snuffles, Wounds, Sores, Loss of Fur or Feathers, Skin Disease, Etc.

H. A. Kiewert, 5042 N. Long Ave., Chicago, Ill., says: "I had some of the worst kind of cases of rump in my chickens and I thought I would not save any but I have saved these birds, thanks to Germozone." H. A. Haines, Rosalia, Kas.: "If we had tried Germozone at first it would have saved us \$1,000 worth of expensive experiments." Mrs. T. A. Morley, Gallen, Mich.: "I have used Germozone 17 years and could not get along without it." E. W. Thiel, Waukesha, Wis.: "I have used your Germozone for white diarrhoea in baby chicks and sure got wonderful results. I also use it right along on grown fowls."

Germozone is sold by most drug, seed and poultry supply dealers, or mailed postpaid in 25c, 75c and \$1.50 packages, from Omaha. Poultry Book and Book on Diseases FREE.

GEO. H. LEE CO., Dept. F-30 OMAHA, NEB.

EGGS—EGGS—EGGS

Increase Your Egg Production
100% By Feeding EmRoCa
Egg Builder

Mr. Geo. Thompson, Alameda, Calif., writes: Have never had my hens lay coming through a molt until I fed EmRoCa Egg Builder; some of my hens were naked of feathers and still laying. Was also of great value to my pullets in bringing them into laying. Would not be without EmRoCa EGG BUILDER.

A \$1.00 Trial Package, Postpaid, for \$5.00
EmRoCa LABORATORIES
Hearst Building San Francisco, Cal.

NOTICE

All Poultry Breeders and Poultry
Supply Houses

Wagner Medicated Poultry Roost

No more Spraying
No more Lice
No more Mites

Complete and permanent eradica-
tion of Mites and Lice.

E. W. Badger Sales Co.

Distributors for California
LONG BEACH, CAL.

Sold in Los Angeles through
German's, N.E. corner of 6th and
Main Streets.

FOR GREATER EGG
PRODUCTION
FEED
COULSON'S EGG FOOD
FULL PARTICULARS
IN OUR FREE BOOK
"CHICKENS FROM
SHELL TO MARKET"
Coulson's Co.
PETALUMA, CAL.

KEEP BEES

Let them gather honey for your table
and make your fruit more fruitful.
Free booklet and price cost of bee-
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Farmers, Miners, Builders—people in
every kind of business are saving money
buying used or renewed pipe from us.
We sell every kind of pipe. Send in a list
of your requirements today and get our
prices. We have saved hundreds of peo-
ple 33-1/3 to 50 per cent on their pipe
bills. Here's a partial list of some of the
miles of pipe we have in stock for im-
mediate delivery:

8,000 ft. 6 Inch Riveted 16 Gauge
700 ft. 8 Inch Riveted 16 Gauge
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500 ft. 36 Inch Riveted 12 Gauge
10,000 ft. light wrought iron 8 Inch
pipe with cast iron collars.

All above pipe thoroughly overhauled
and inspected and ready for immediate
use.

We also have large quantity standard
pipe and screw casing, pressure tested
and guaranteed.

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your pipe requirements today.

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205-7 N. Los Angeles, St., Los Angeles

SUCCESS ON A TRAPNEST FOUNDATION

(Continued from Page 757.)

ing off in February and the other a
month later. "Why should we hatch
in January when we do not care to
have the pullets lay before October?"
is Mr. Gibson's point of view. Last
year he lost four per cent of the first
hatch and seven per cent of the sec-
ond, but the loss in the latter case
might easily have been avoided. It
was due, apparently, to allowing the
chicks unlimited access to sand at the
beginning. They filled their crops with
it to their undoing.

Care of Pullets

After six weeks in the brooder house
the chicks are transferred to colony
houses. These colony houses are
simple affairs, 9x12 open front, built
of 1x3 lumber and covered with tarred
paper, each holding 100 chicks at the
start, but the 100 is soon cut down to
75 or less by culling and removal of
cockerels. Seventy-five birds to a
flock is Mr. Gibson's ideal. If there
are more it is because reduction is ex-
pected.

Each colony house stands in the mid-
dle of a quarter-acre yard, which was
planted to wheat during the winter.
When the chicks are put in these
yards they find not only ample range
and standing wheat to harvest but
the shade of a splendid live oak for
hot days. So numerous are the oaks
in Happy Valley that they look like
orchard trees, only finer. Every yard
has its oak, and in the shade of these
oaks the pullets gather day after day.
There could be no more perfect shade,
and it is no wonder the pullets grow
like weeds.

Portable hovers are used in the
colony houses at first, but are soon
removed, and the chicks find their
way to the roosts from the lath lad-
ders which are their first roosting
places.

Symmetrical development is never
sacrificed to early production. The
pullets are not expected to lay before
six months. If they lay a little sooner
no harm is done, but too early laying
is decidedly detrimental. In order to
secure full maturity before laying be-
gins, as soon as the pullets begin to
sing and show reddening combs they
are put on the conditioning mash
recommended by Professor Dougherty,
which consists of 95 per cent bran and
5 per cent bone meal, and are kept on
it till growth is complete, when they
are given the laying mash again. Later
on, perhaps in November, when they
are about eight months old, the amount
of beef scrap in the mash is reduced
from 18 or 20 per cent to 8 or 10 per
cent, in order to retard laying some-
what and prevent the fall molt to
which February and March pullets are
liable.

Feeding the Layers

The mashes recommended by the
university for both growing stock and
layers are mixed on the place and
kept before the birds in hoppers. The
scratch grain mixture for layers con-
sists of 1 part each of wheat, barley
and cracked corn and 3 parts milo, all
by weight. Three-quarters of the night
ration is thrown in the litter an hour
before sunset. At sunset, when half
the hens are on the roost, the last
quarter is given. This is to make
sure that every hen has all she wants
and that a little is left for morning.
A moist mash is fed only when an
appetizer is needed—for instance,
when production begins to slacken in
late spring.

Green feed is given at 10 a. m. and
a sufficient amount is given to keep
the birds picking the rest of the day.
Alfalfa is the green used from March
to January, and barley takes its place
the rest of the year. No milk is used
except for young stock.

Labor Saving Devices

Every poultryman has his own pet
schemes for saving time and labor.
One of Mr. Gibson's is what he calls
the lazy man's way of making wet
mash. He takes a sprinkling can such
as our grandmothers watered the gar-
dens with and sprinkles the top of the
mash in the hopper.

Then there is what he calls his
feed saver. Instead of the wire so
often used on top of the mash to keep
the birds from scratching it out, he
has devised a frame made of three
strips of parting bead 3/4 of an inch

apart and tough to fit the hop-
per. This is laid on the mash and
the hens eat from between the slats.

The awnings which keep out sun
and rain, instead of being held by
props or fastened with chains, are
swung on hinges one-third of the dis-
tance from bottom to top. By this
means they may be hung at any angle
required. All roosts are swung on
wires so that they never touch the
sides of the house, and the ends of
the roosts are readily lifted to allow
every bit of wood to be painted with
insecticide.

Eggland Ranch is an excellent
example of the "one man" ranch. Mr.
Gibson keeps no help, but cares for his
1,200 hens himself, with what assist-
ance his capable young wife can give.
"We can never take a vacation to-
gether," he lamented, "for when I go
she has to look after the hens." But
1,200 hens that produce a labor income
of \$3 per hen are more profitable than
twice that number of the ordinary
kind, and the Gibsons are well satis-
fied to do without expensive hired
labor and keep the profit.

* * *

Since the above was written by
Mrs. Koethen the state poultry farm
demonstration conducted by directors
of the poultry division of the Univer-
sity of California over a period of 12
months has been completed and Mr.
Gibson's place has been given highest
score. There were 85 poultry farms
in this contest. The number of laying
hens on Mr. Gibson's place at the con-
clusion of the contest was 839 and
these 839 averaged 180.9 eggs for the
12 months. The next highest compe-
titor was given a score of 170.7.

The Santa Cruz contest has like-
wise been completed and Mr. Gibson's
pen of selected layers in that contest
averaged 197.8 eggs.

Poultry Queries

Conducted by J. A. Koethen

May Be Tuberculosis

One of my March pullets died about
ten days ago. Upon examination I
found her very light in weight, in fact,
there was hardly any flesh on the
breast bone. The liver was greatly
enlarged and full of white spots. Re-
cently I noticed a second hen standing
about as if sick and found her as
emaciated as the first. A post mortem
revealed the same enlarged liver, light
in color but without spots. What is
the trouble?—Subscriber, Paicines.

When there is marked emaciation
there is always a suspicion of tuber-
culosis. The spots on the liver of the
first hen are another symptom and
one that is considered almost conclu-
sive. The fact that the emaciation
is so noticeable in the breast is also
an indication of tuberculosis. Morse
says: "There is a combination of
symptoms that might serve to arouse
your suspicions; steadily advancing
emaciation; anemia, shown by pallor
of comb wattles and the skin about the
head; general weakness; lameness,
ruffling of the feathers and in many
cases diarrhoea. When combined with
the foregoing you notice a bright eye
and a ravenous appetite you may have
very strong suspicions." "At the post
mortem you may have your suspicions
strengthened by finding liver, spleen,
intestines and mesenteries studded
with yellowish white cheesy nodules
of various sizes." There is no cure
for tuberculosis when it has reached a
stage where it can be diagnosed. All
you can do is to bury deep or burn all
birds that die, and disinfect thor-
oughly. As emaciation is the first
symptom that can be noticed it would
be a good plan to go through the flock
and pick out all birds that are notice-
ably under weight. Put them by them-
selves, feed them liberally and watch
them. It is possible you are feeding
a ration that does not contain enough
fat and carbohydrates. If you are not
feeding it corn should certainly be
added to the scratch feed and corn
meal to the mash. As you do not men-
tion your method of feeding I can only
make this suggestion.

Lima bean growers are hard hit by
the heavy increase in freight rates,
now \$1.30 as compared with 97 cents.



Earl E. Sanders

BREEDER OF

Mammoth Bronze Turkeys

AND

S. C. White Minorcas

Is Booking Orders for Eggs, Chicks, and
Breeding Stock

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Smokes Meat by Simple, Easy Metho-
That Saves 20 Pounds in Every
100—Gives Delicious Flavor

E. Ultseh, Florence, Ala., uses a
easy, better method of smoking mea-
for home use and market. He says
"For years I have been using Wright's
Smoke. I tell you it is fine. The mea-
has such a fine taste and no insects o-
any kind trouble it. I simply won't g-
back to the old way. This year
smoked eight hogs and the meat i-
fine—it sells like hot cakes."

Mr. Ultseh simply paints his mea-
with Wright's Smoke, eliminating al-
bother and loss. Wright's Ham Pickl-
is fine for sugar-curing—simply mix-
with 27 pounds of salt and pack mea-
in it. The Wright method make-
meat curing a simple matter. Thot-
sands recommend it.

Large bottles of Wright's Smoke o-
Wright's Ham Pickle cost little at an-
drug store. If your dealer hasn't ge-
unine, guaranteed Wright Food Pro-
ducts, write E. H. Wright Co., 83
Broadway, Kansas City, Mo., for free
booklet.—Adv.

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4000 Seed Barley

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nia Cultivator a habit. They will broaden your
knowledge of the manufacturing improvements.

NATIONAL EGG LAYING CONTEST

Mountain Grove, Missouri, final report.

S. C. Rhode Island Reds win the high honors, both in hen and pen. Pen owned by W. A. Magruder, Eolia, Missouri, won the cup for October with a record of 97 eggs, also the large cup and \$50 for the high pen over all breeds, with a record of 1,233 eggs for the year, or an average of 246.6 eggs per hen.

Hen owned by R. M. Ellis, Tipton, Missouri, won prize for high hen over all breeds by laying 296 eggs during the year, \$5. The 300 hens in the Ninth National Egg Laying Contest, which closed October 31, 1920, laid 56,311 eggs during the 12 months of the contest, making an average of 187.7 eggs per hen. This is an increase of 3.7 eggs per hen over the average of the eighth contest. There were 120 hens laying 200 or more eggs during the year, a gain of eight hens over 112 last year. Since the first contest held nine years ago the average egg production has increased yearly with the exception of one year. Several of the breeders who had birds entered in the first contest have had a pen entered each year.

Practically all breeds made an excellent record for the year and it is an evident fact that with proper care and a well balanced ration most all breeds of poultry can be kept at a profit. The feed ration used in the contest was as follows: Grain; 50 pounds cracked corn, 50 pounds wheat. Mash; 25 pounds bran, 25 pounds shorts, 30 pounds corn meal, 10 pounds ground oats, 12 pounds beef scraps, 1½ pounds fine salt. A moistened mash was fed each morning throughout the year, and the principal grain feed was in the evening, early enough for the birds to consume all they wanted before dark.

The average feed consumed per hen for the year was 33.48 pounds mash and 51.26 pounds grain. The average cost of mash per 100 pounds for the year was \$3.69; the average cost of grain was \$3.61. The total feed consumed per hen for the year was 84.74 pounds, at an average cost of \$3.09 per hen. The average cost of straw for litter per hen was .08, two pounds oyster shell was .03, egg cases for shipping eggs was .38, or a total expense of \$3.58 per hen. The average egg production for the year was 187.7 eggs per hen, the average price received was approximately .46 per dozen. The net sale of eggs for the year was \$7.17 per hen, leaving a net profit of \$3.59 per hen above the cost of production. These eggs were sold on an open market to commission merchants; none were sold for breeding purposes. All feeds were bought on a local retail market, with the exception of the beef scraps and oyster shell.

Ten highest pens for the year: S. C. Reds, Missouri, 1,233 eggs; White Wyandottes, Missouri, 1,171; Barred Rocks, New York, 1,168; S. C. Reds, Missouri, 1,140; R. I. Whites, Missouri, 1,140; S. C. White Leghorns, New Jersey, 1,133; S. C. White Leghorns, England, 1,132; S. C. Reds, Alabama, 1,129; Barred Rocks, Canada, 1,119; Columbian Rocks, Missouri, 1,117.

Winning pen in each class: S. C. Reds, Missouri, 1,233 eggs; White Wyandottes, Missouri, 1,171; Barred Rocks, New York, 1,168; R. I. Whites, Missouri, 1,140; S. C. White Leghorns, New Jersey, 1,133; Anconas, Missouri, 1,057.

Winning individual of each class: S. C. Red, Missouri, 296 eggs; R. I. White, Missouri, 271; White Wyandotte, Arkansas, 270; White Rock, Idaho, 264, tie; Ancona, Missouri, 264, tie; S. C. White Leghorn, England, 262.

AMERICAN EGG LAYING CONTEST

Leavenworth, Kansas. Report for October, 1920.

Ten Highest Pens for 12 Months

R. C. R. I. Whites, Kentucky, 1,218 eggs; S. C. W. Leghorns, Pennsylvania, 1,197; S. C. W. Leghorns, Texas, 1,144; S. C. Reds, New York, 1,135; S. C. White Leghorns, Iowa, 1,128; White Wyandottes, Pennsylvania, 1,103; S. C. White Leghorns, Washington, 1,072; S. C. White Leghorns, England, 1,071; S. C. R. I. Reds, Illinois,

1,053; S. C. White Leghorn, Michigan, 1,043.

Ten Highest Pens for October

R. C. R. I. Whites, Kentucky, 74 eggs; S. C. R. I. Reds, New York, 63; White Wyandottes, Canada, 56; S. C. R. I. Reds, Illinois, 52; White Wyandottes, Pennsylvania, 47; White Wyandottes, Illinois, 47; White Wyandottes, Canada, 45; S. C. Reds, Missouri, 43; S. C. White Leghorns, Illinois, 42; S. C. White Leghorns, Pennsylvania, 38.

Record of Leader to Date

White Wyandottes, 253 eggs; Partridge Wyandottes, 197; S. C. R. I. Reds, 246; White Orpingtons, 216; White Rocks, 187; Barred Rocks, 230; R. C. R. I. Whites, 285; S. C. Anconas, 185; Brown Leghorns, 189; White Leghorns, 272.

STAND BY THE ORGANIZATION

Every-cooperative marketing or other cooperative association has its tersting time. None ever yet started without mistakes being made and no community ever endeavored to start one but there were more or less selfish people to be considered. It is very attractive to these people to have others hold the sack while the "independents" have all the advantage of the cooperative movement. The testing time now seems to be before the Poultry Producers of Central California. A writer in the Petaluma Poultry Journal, Chas. Blom, addresses an open letter to the poultry people of Sonoma County. He addresses it to the women because: "during the past 30 years I have noticed that the greatest burdens on a poultry ranch generally rest on the shoulders of the poultryman's wife. To date I have never seen a successful poultry plant that did not owe its prosperity to a woman."

Then in regard to the necessity for maintaining the present cooperative movement Mr. Blom says:

"The unorganized farmer today is what he always has been, a slave or servant to the middleman. We see this pretty thoroughly illustrated in the dairy, cattle, hog and sheep business today. Look up San Francisco prices. Thin cows from three cents up.

"Should the Poultry Producers be so unfortunate as to go under, grass would soon be growing on the main streets of Petaluma. We cannot go back to old marketing methods. Markets farther and farther away have to be discovered, and this takes money. The orange, raisin and prune associations are spending millions of dollars yearly in advertising alone. The first purse raised by the raisin men for advertising purposes when they were in the swaddling clothes stage of the game was \$100,000.

"Let these poultrymen that want to go back to old times come out in the open and give their reasons. Let them tell us why they are quitting and what they expect to gain by so doing. One not acquainted with the quitter would naturally think the paper would be flooded with answers to my letter. I'll prophesy that there will not be one line in answer to my letter. I know the type. I've lived among them for a life time. Their religion is misery, tear down, but never build up."

THE PROLIFIC CHICKEN LOUSE

The rapidity with which chicken lice multiply is marvelous. For instance, so prolific is one pair of lice that in less than two months time they are the ancestors of over 100,000 descendants.

The greater part of the life of the louse is spent on the body of the fowl. The barbs of the downy feathers are the favorite places of abode for the eggs or nits.

Since dipping of lousy fowls has been found impractical, due to resulting colds and disease, dusting has been resorted to with excellent results. For this purpose home made powders are very efficient and a most effective one is made by mixing one

part of stock dip or crude carbolic acid with three parts of gasoline, to which is added as much cement or plaster of Paris as it will take up. When the final mixture has become dry and powdery apply a liberal dust-

ing to the fowl. To apply it most effectively hold the fowl up by the legs so that the feathers will be well separated and the powder, when applied, will more readily reach the favorite locations of the lice.



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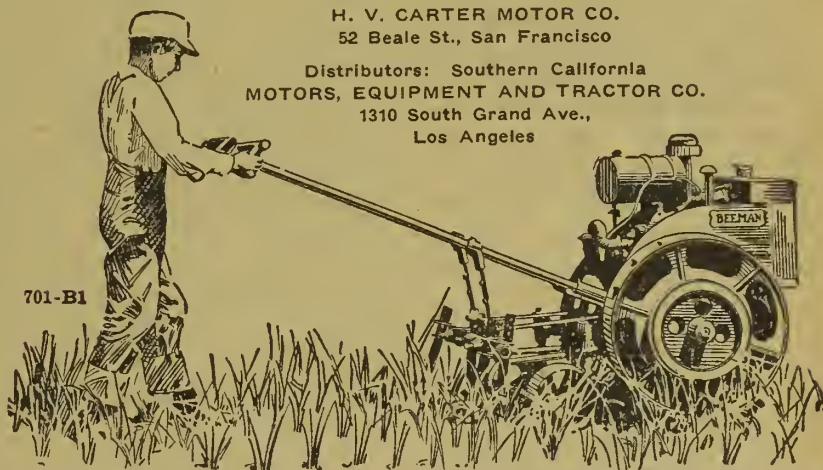
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We Want Your Turkeys and Other Poultry

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We guarantee you top market prices, correct weights and mail you check immediately after the sale

A TRIAL IS ALL WE ASK

We would be pleased to have you send us your name so we can keep constantly in touch with you regarding the market prices and conditions.

References: Bank of Italy, San Francisco.

Half Moon Fruit & Produce Co.
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Your requirements, whether large or small, will receive our careful attention

Los Angeles Markets

Los Angeles, December 8, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 55 cents.
Dec. 1 2 3 4 5 6 7
'20 ... 57 57 55 55 55 55

CHEESE

Brokers' prices:
California flats, 30@32.

EGGS

Fresh extras (case included): Produce Exchange closing price 76 per dozen case count, Produce Exchange closing price 73 per dozen; pullets, Produce Exchange closing price 72 per dozen; pewee pullets, 60.

Dairy Exchange price last week on extras:
Dec. 1 2 3 4 5 6 7
'20 ... 76 76 77 78 78 76

POULTRY

Price to producers: Hens, lt., 29; heavy 30; colored, 31; broilers, 40@47; roasters, 31; old roosters, 14; fryers, 40; ducks, old, 23; ducklings, Pekin, 3½ up, 25@28; others 23; geese, 25; turkeys, live, young tom, 45; dr., 50; old, live, 40; dr., 41; hens, live, 45; dr., 50; squabs, 45@47. Belgian hares, live, 16@21; old, 9.

LIVESTOCK

Los Angeles, Dec. 7.—Weighed and delivered off cars without food or water:
Hogs (hard grain): 125 to 175 lbs., 12.50; 175 to 225 lbs., 13.00.

Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.00@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.

Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained December 7 and 8 o'clock, December 7, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market firm; Stockton: Burbanks, best, 2.00@2.35 sacked. Idaho Russets, 2.00@2.15 mostly. Sweet mostly 1.00@1.25 per lug.

Onions: Supplies heavy, market dull. Stockton: Whites, 1.50@1.75; Browns mostly 1.10@1.25 per 100 lbs. sacked; Yellows, 1.00@1.15, cwt. Garlic, lb., 12@14.

VEGETABLES

These are the actual prices obtained December 7, by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, Refugee mostly 10@12; Limas, 8@10.

Beets: Doz., 35@45; sk., 2.00@2.25.

Cabbage: Supplies heavy, market slow, wide range in quality. Best mostly 1¼ @2 per lb.; per field crate, mostly 75@1.00. Carrots: Doz., 25@35; sack, 1.00@1.25. Cauliflower: Supply liberal, field cr., 1.00@1.25; low as 75.

Celery: Dozen bunches, 85@1.00; cr., 2.00@2.50; Northern cr., 3.00@3.50.

Cucumber: Market firm; local, best, lug, 2.75@3.25 lug.

Egg Plant: Lb., 4@6.

Lettuce: Field crate, best, 50@75; few high as 1.00.

Peas: Local lb., 12@14; low as 8.

Peppers: Bells and Chillis, lb., 3@5. Rhubarb: Crimson-Winter, best bx., 80 @1.00.

Squash: Local summer, lug, 85@1.10; Hubbard, lb., 1½ @2.

Tomatoes: Local lugs, mostly 75@1.00 lug; best 1.25.

Turnips: Per doz., 25@35; sk., 1.10@1.35.

DECIDUOUS FRUITS

These are the actual prices obtained December 7, by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal; market firm. California bushel boxes Bellefleurs, 4 tiers, mostly 1.85@1.95; Jonathans fy., 3.00 @3.25; Delicious, fy., 3.25@3.75.

Bananas: Lb., 10½ @11.

Cranberries: Bbl., Late Howe, 21.00@22.00; Oregon, bx., 5.75@6.25.

Grapes: Emperor, Cornichon, best, 10 @12, poorer low as 7.

Muscats, 12@14; Tokays, 10@12; Cornichons, 10@12; Malagas, 12@14; poorer, all varietals, 5.

Pears: Bartlett, northern, lb., 9@11; best, 12@14.

Persimmons: Lb., 10@18.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.75@3.00; special packed brands, 3.50@4.00; Arizonas, 4.00@4.25 packed box.

Lemons: Market dull, wide range in prices: Local stock: Packed, box, 2.75 @3.25; loose, 1.00@1.50; lug, mostly 50@60.

Oranges: Supplies increasing, market dull. Valencias, supplies practically cleaned up. Navels, new crop, local packed, mostly 3.25@4.00; small sizes low as 2.75, special brands mostly 5.00@5.50; few high as 5.75. Grove run 1.75@2.50 loose.

HONEY

Movement slow. Carloads f. o. b. usual terms: per lb. 5-gallon cans White Orange and White Sage, 16½ @20; extra Light Amber Orange and Sage, 19; Light Amber Orange, 18½; Light Amber Sage, 12@18½; Light Amber Alfalfa, 11@17. Beeswax: sacked, in less than car lots 40@42 per lb. Prices given represent quotations; practically no sales being made. Wide range due to extremely unsettled market conditions; low prices are considered possible in near future.

NUTS

California Walnut Growers' Association announces prices in 1920 walnuts: No. 1, soft shell, 2½; No. 2, 18½; Huddled, 25½; standard budded, 22½ per lb.

GRAIN AND FEEDS

Grain Exch. prices bid December 7:

Milo: Carlots, 1.72@1.78½.
Corn: Bulk, Yellow, 2.06@2.20.
Barley: 1.72½.
Kafir: Kansas, 30.00.
Kafir: Eastern, 1.66½.

HAY

Alfalfa Growers of California, report under date of December 7:

The market showed but little change during the week in most parts of the state. Somewhat stiffer prices were paid for fancy grades, the supply of which is quite insufficient while in the local Los Angeles market sales of track lots of medium and ordinary grades were made at some concessions in price, owing to temporary large arrivals. Buying is still practically altogether of the "from hand to mouth" order, more so even than before, in sympathy with the pronounced tendency in all lines of business of reducing stocks on hand to a minimum. The seemingly endless decline in prices, of grain, cotton, etc. which has been one of the principal causes of the present all around congestion and depression the country over, has for the first time been relieved last week by a sharp reaction from the previous lowest price levels, which is an encouraging sign, as it revives the hopes for a change for the better; this will probably not be far off after the proper measures planned by congress and the reserve bank for financial aid in the marketing of crops, have been put into effect. In the meantime there is a good deal of talk in all parts of the state about many growers of wheat, barley, corn, cotton, rice, sugar beets, etc. all planning to put their acreage into alfalfa, as this is about the only general farm product the price of which has not gone all to pieces.

There were 1,400 tons received on the tracks in Los Angeles the week ending December 4, with 125 tons left over as against 1,000 tons the week before.

Rabbit alfalfa41.00
No. 1 dairy alfalfa31.00
Standard alfalfa28.00
Stock alfalfa24.00

Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats22.00@26.00
Barley18.00@25.00
Alfalfa22.00@30.00
Barley straw6.00@10.00

San Francisco Markets

San Francisco, December 7, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations:
Extras52½

Dairy Exchange prices extras this week and year ago:

Nov. 30Dec. 1 2 3 4 6
'20 ... 54 54½ 54½ 53 .. 52½
'19 ... 67 67 .. 67
Rets. wk. ending Dec. 6, 3,499 cents.

CHEESE

Dairy Exchange quotations:

Jack, full cream22@26
Jack, half skimmed17@20
Ore. Y. A.35
Cal. Flats32½
Oregon Trips29½
Cal. Y. A.35

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras87
Extra Pullets69½
Undersized66

Dairy Exchange prices, extras this week and year ago:

Nov. 30Dec. 1 2 3 4 6
'20 ... 80½ 85 82 84 .. 87
'19 ... 90 90 .. 89½
Rets. wk. ending Dec. 6, 137,784 dozen.

POULTRY

The turkey market is showing weakness due to arrival of turkeys from Australia and promise of more to come.

Wholesale prices are:

Broilers, 15 pounds per dozen, 60@65.
Colored fryers—2 to 3 lbs., 37@38.
Colored young roosters (smooth), 8 to 4 lbs., 38.

Old roosters, (colored), 20@23; market firm.

Leghorns, young, 15 lbs. to 24 lbs. per dozen, 45@48.

Leghorn hens, 3 lbs., 35@37; under, 25; Eastern, 31@35.

Large colored hens, 38@40.

Young Pekin ducks, 30; old ducks, 23 @25; young geese, 27@30; market easy.

Live Belgian hare, 23@25; dressed, 28 @30.

Turkeys: Dr., 45@55; live, 35@38.

Squabs: Large, 75@80 per lb.

Pigeons: 3.00@4.00 per dozen; market firm.

LIVESTOCK

Western Meat Company prices are:

Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 9@10; second quality, 7½ @8½; thin, 6@6½.

Cows and heifers: No. 1, 7½ @8; second quality, 6@7; thin, 3@4.

Calves: Live weight, 9½ @10; medium, 8@9; heavy, 7@8.

Lambs: M., 3½ @10; yearling, 8@8½.

Sheep: Wethers, 7½ @8; ewes, 4@5.

Hogs: Weighing 100 to 150 lbs., 11; 150 to 225 lbs., 12; 225 to 300 lbs., 11½; 300 to 400 lbs., 10½.

California Farm Bureau Marketing Association reports sales:

No. Hogs Av. Wt. Dock Price
Modesto, November 30

89 190 ... \$11.30

84	205	...	11.00
6	281	...	10.50
18	164	20	10.50
20	144	...	9.50
11	442	340	8.50
3	133	...	8.50

Three cars 26 consignors.

Tegner December 1

72	197	...	10.60
8	275	20	9.60
21	131	...	9.50
6	338	250	8.60

One and one-half cars, 17 consignors.

Chowchilla, December 2

87	183	...	11.55
26	175	...	11.50
70	145½	...	10.50
5	310	20	9.50

Two cars, 17 consignors.

Fresno, December 3

48	198	...	11.65
23	200	...	11.40
3	320	...	10.65
63	208	...	10.00
23	153	...	9.10
22	141	...	8.60
18	319	680	7.60
4	450	...	7.50

Three cars, 17 consignors.

Wasco, December 4

93	199	...	11.00
91	177	...	10.50
14	337	200	8.00
16	121	...	8.00
17	226	...	8.00
47	137	...	8.00

Two cars, 19 consignors.

Total for week 11½ cars, 96 consignors.

POTATOES AND ONIONS

Wholesale prices on street:
River, 1.60@2.10 for No. 1, 1.15@1.35 for No. 2; do. Oregon Burbanks, 2.25@2.65; Salinas, 3.00@3.50; Idaho Gems, 2.65; sweet potatoes, 3@3½ per lb.

Onions: Yellow, 65@85 per cental; Australian brown, 65@85; do, white 1.50@1.75.

Garlic: New, 8@9.

VEGETABLES

Wholesale selling price:
Beans: Lb., garden, 10@12; Italian, 8 @10; Limas, 12@13.

Beets: Sk., 1.00@1.25.

Brussel Sprouts: 5@7 lb.

Carrots: 1.00@1.25 sk.

Cauliflower: Doz., 1.00.

Cucumbers: Cr., 2.50@3.00; hothouse, 3.25.

Cabbage: Lb., 1.

Celery: Cr., 1.50@2.50; doz., 15@25.

Corn: Sk., 2.00@2.50; fy., 3.00@3.50.

Egg Plant: Southern, 8@10 lb.

Lettuce: Cr., 1.75@2.00.

Onions: Green, per bx., 75@1.00.

Peas: Lb., 12½ @15; fy., 15@20.

Peppers: Lug bx., Stockton Bells, 75@1.00; Chili, lb., 5@6.

Rhubarb: 2.50@2.75 lug.

Spinach: Lb., 6.

Squash: Hubbard, 75@1.00 sk.; Marrowfat, sk., 75@1.00.

Tomatoes: Bx. fy., 1.50@1.75.

Turnips: Sk., 1.00@1.25.

FRESH FRUITS

Apples: Bellflower, 1.30@1.50; choice, 1.15 @1.35; C grade, 75@1.00; Spitzenberg, 2.00@2.75; Jonathan, 2.50@3.00; Hoover, 1.50@2.00; Newtowns, 3½ tier, 2.20@2.50; 4 tier, 2.35@2.50; King David, 1.75@2.50.

Avocado: Case, 5.50@6.00; small black, 1.00.

Bananas: Lb., 10½ @11; red, 12.

Cranberries: Per bbl., 22.50. Oregon, 4.50@5.00 box.

Grapes: Cr., 3.00@3.50.

Ollives: Lb., 10@12½.

Pears: Winter Nellis, 3.00@3.75.

Persimmons: Bx., 1.50@2.00.

Pineapples: Doz., 5.00@6.00.

Pomegranates: 1.50@1.75 per peach box; 2.00@2.50 per half orange box.

Quinces: Bx., 1.50@2.00.

CITRUS

Navel oranges, 4.00@5.00. Lemons, 2.50 @3.75 per box; lemonettes, 1.50@2.00.

Grapefruit, new crop, 2.50@3.00; do, Arizona, 4.00@4.50. Limes, 1.50@2.25 per half-orange box; Mandarins, 2.00@3.00 for box or crate.

DRIED FRUITS

California Associated Raisin Co. prices:

Muscats: Package seeded, Sun Maid, 25 pound boxes, 20½ cents a pound.

Loose, 25 pound boxes, one crown, re-cleaned and floated, 20½ cents a pound; two crown, re-cleaned and floated, 23½ cents a pound; three crown, re-cleaned and floated, 24 cents a pound.

Layers, three crown flat pack, 20 pound boxes, \$4.40 box; ten pound boxes, \$2.40; five pound boxes, \$1.30 box.

Cluster, four crown pack, 20 pound boxes, \$4.70; ten pound boxes, \$2.55 box; five pound boxes, \$1.40 box.

Six crown flat pack, 20 pound boxes, \$5.50 box; ten pound boxes, \$2.95 box; five pound boxes, \$1.60.

Sun Maid, 20 15-ounce net cartons to box, \$5.20 box.

Sun Maid, 12 two-pound cartons to box, \$6 box.

Sun Maid, Imperial, four five-pound cartons to box, \$6 box.

Vineyard run, Sun Maid, 100 pound boxes, \$21 box (strapping extra, 19 cents per box).

Thompson Seedless, Sun Maid, re-cleaned, 25 pound boxes, 21 cents pound; 48 16-ounce packages, 21½ cents package.

Sultanas, Sun Maid, re-cleaned, 25 pound boxes, 20½ cents pound.

Figs: Fancy black, 25-lb. boxes, 12 lb.; extra choice black, 25-lb. boxes, 10 lb.; choice black, 25-lb. boxes, 9 lb.; fancy white, 25-lb. boxes, 18 lb.; extra choice white, 25-lb. boxes, 1 lb.

Prunes: 30-40s, 25-lb. boxes, 19 lb.; 40-50s, do, 17 lb.; 50-60s, do, 15 lb.; 60-70s, do, 13½ lb.; 70-80s, do, 11½ lb.; 80-90s, do, 10 lb.; 90-100s, do, 9½ lb.

Apples: Fancy, 50-lb. boxes, 14 lb.; extra choice, do, 10½ lb.; choice, do, 10 lb.

Peaches: Blue ribbon brand, 48 11-oz. to case, 10.00 per case; do, 24 2-lb. boxes to case, 11.00 case; extra fancy peaches, 25-lb. boxes, 22 lb.; fancy, do, 20 lb.; extra choice, do, 18 lb.; choice, do, 17 lb.

Apricots: Fancy, 25-lb. boxes, 30 lb.; extra choice, do, 26 lb.; choice, do, 25 lb.

standard, do, 22 lb.

Pears: Fancy, 25-lb. boxes, 20 lb.; extra choice, do, 17 lb.; choice, do, 14 lb.

BEANS

Philadelphia: 2 lem. 1.80-2.45.
December 3
New York: 3 or., 4 lem. Nav. 3.05-8.35, Val. 3.15, lem. 1.85-3.30.
Boston: 2 lem. 2.25-2.80.
Pittsburg: 2 Nav. 4.55-6.50.
Philadelphia: 1 lem. 1.50-2.05.
Cincinnati: 1 lem. 1.50-1.80.
Cleveland: 1 lem. 2.10-3.60.
December 6
New York: 14 or., 5 lem. Nav. 2.75-7.60, Val. 2.50, lem. 1.75-3.15.
Boston: 2 or., 2 lem. Nav. 6.15-7.35, lem. 1.85-2.90.
Cleveland: 2 or., 1 lem. Nav. 5.35-7.70.
Pittsburg: 2 or., 1 lem. Nav. 4.10-5.15, lem. 2.70.
Philadelphia: 2 lem. .85-2.90.
St. Louis: 2 or., 1 lem. Nav. 4.56-5.20, lem. 2.10.
Cincinnati: 1 mixed Val. and Nav. Val. 2.20, Nav. 3.10.
December 7
New York: 7 or., 2 lem. Nav. 3.60-7.40, lem. 1.45-2.50.
Boston: 1 or., 2 lem. Nav. 6.15-6.80, lem. 2.05-3.25.
Philadelphia: 1 lem. 2.60-3.30.
Pittsburg: 1 lem. 3.25.
St. Louis: 1 Nav. 3.50-4.15.

Book Review

HOME AND FARM FOOD PRESERVATION

"Home and Farm Food Preservation," by Wm. V. Cruess, assistant professor of food technology, University of California, published by Macmillan Company, New York, \$2.00. This is a book which should be in

of the raisin crop in California is over \$10,000,000 annually. The other dried fruit industries are smaller but their aggregate value amounts to many millions of dollars yearly in the United States. From this, the importance of commercial food preservation may be seen.

There are 35 chapters and many half-tones and line drawings. The chapters treat of why food spoils; ways of preventing spoiling; methods of food preservation; canning of fruits, vegetables, meats; fruit juices; syrups; jellies and marmalades; jams, butters, and pastes; candied fruits; fruit drying; vegetable drying. After discussion of the general proposition of saving the wastes of fruits in various forms, then other chapters give specific directions as to every step in practically every kind of food preservation. Even milk and its products are thoroughly discussed. Sterilization and pasteurization of milk, the storage of butter, making of cottage, cheddar and other types of cheese, are all touched upon, and in cases where more extended details are needed other books or bulletins are referred to. The 35 chapters of the book make up three parts. The first touches upon theory of food preservation, the second upon methods, and the third upon specific recipes. In addition there is an appendix with tables with formulas

was the one representing the deciduous fruit industry. This group met at the office of the dean of the college of agriculture at Berkeley on Monday, November 22. The past work of these departments and their plans for the future were thoroughly reviewed and the funds necessary to carry on the work discussed. Arrangements for this meeting were made by R. N. Wilson, secretary of the committee. On the following day the committee met at the office of Director Hecke at Sacramento and reviewed the work and plans of the office of pest control, viticulture, standardization, crop statistics and quarantine service as divisions of the state department of agriculture. The committee also made a trip to the university farm and secured information relative to its needs.

Representatives selected by the various groups met on Wednesday, December 1, to formulate budget figures and present the claims of agriculture to the state board of control and to Governor Stevens for the purpose of securing sufficient funds for the next biennium to permit the work of these departments to progress as it should. —F. K. H.

POISONING BOLL WEEVIL

The Alabama experiment station has

of \$19.51 per acre. Experiments carried out in Texas show equally good results.

WAGE SCALE IN RICE FIELDS

The Glenn County Rice Growers Association at a recent meeting at Willows canvassed the serious situation of the rice growers and decided to lower the schedule of wages paid in the harvesting operations. The following scale was adopted:

Horse with harness, \$1 per day; binder drivers, \$5.50; shockers, \$4; team, man and wagon, \$7; four horses, man and wagon, \$9; bundle wagon drivers, spike pitchers, bundle pitchers, \$4; sack sewers, \$7; separator tenders, \$9.50; sack bucks, \$5.50; jiggers, \$7; stationary engineers, \$5.50; trucking, 20c to 30c ton mile, according to condition of roads; threshing, 25c to 40c hundred; tractors, 75 h. p., \$5 an hour; threshing machines, 36 inch, \$35 per day; wagons, 50c a day, with bundle racks, 75c a day; binders, \$7.50 to \$10 a day, with auxiliary engine, \$15. Board is charged at \$1.50 per day.

BAHIA GRASS

Bahia grass (*Paspalum notatum*), recently introduced into Florida, has been shown in tests at the station to possess ability to spread and make a good sod while being subjected to heavy pasturing. This grass is said to be indigenous to South America and northward to Mexico, and to have been introduced into this country by the U. S. department of agriculture in 1913.

STEADY GROWTH

The new home of The A. H. Averhill Machinery Co., California distributors of the Russell machinery with factories at Massillon, Ohio, is drawing to completion at San Jose. The warehouse proper, a building 100x150, consists of a substantial frame covered with heavy galvanized sheet iron. To this will be added a roomy office and well equipped shop. The A. H. Averhill Machinery Co. has been selling the Russell line of gas and steam tractors, threshers and saw mill machinery on the Pacific Coast since 1882. A larger and better equipped plant has become a necessity because of the increasing demand for Russell goods. The California house has been located at San Jose for the last 25 years. The thousands of various Russell machines now in use in the state testify to the steady growth of this company.

WEATHER REPORT

San Francisco, Cal., Dec. 4, 1920.

Stations	Rainfall			Temp.	
	Wk.	Season	Norm.	Max.	Min.
Eureka	1.24	13.15	10.62	62	32
Red Bluff	.80	8.54	6.13	62	36
Sacramento	.68	5.33	4.03	60	33
San Francisco	.64	5.07	4.53	60	47
San Jose	.66	4.35	3.52	64	34
Fresno	.24	2.19	2.19	63	40
San Luis Obispo	.08	2.93	3.72	78	40
Los Angeles	.06	1.78	2.56	78	50
San Diego	.02	.47	1.48	74	47

Snow on ground at Summit 48.0 inches.



Scene on Hawaiian Pineapple Plantation

the hands of every fruit grower of California who may have any fruit wastes which may be saved by drying, canning or preserving or even making into syrups, vinegar, etc., or anyone who may have occasion to preserve meats. The author says in his preface: "Since early historical times food preservation has been second only in importance to food production. Grapes and other fruits were dried by the ancients to preserve them; fruit juices were fermented to make wines and vinegars; cereals and vegetables were stored to protect them against moisture and decay; olives were preserved by salting; and meats were salted, dried and smoked. The use of sugar and vinegar in preserving fruits and vegetables came later. The preservation of foods by sterilization in sealed containers is a development of the nineteenth century and dates from its discovery by Nicholas Appert in France about 1800. Cold storage, as a means of preserving all perishable products, has, during the past century, developed into a very great industry. "Three billion cans of food, valued retail at \$600,000,000, were sold in the United States in 1916. The meat packing and cold storage industries compare favorably with the canning industries in size. The wholesale value

for soldering fluid, federal standards for vinegar, together with vast number of references to books or bulletins on home canning and other subjects.

STATE AID FOR AGRICULTURE

The agricultural legislative committee is in action. This committee, which came into being as the result of much discussion at the Chico fruit growers convention, is the first organized attempt by farmers and fruit growers of California to secure their just proportion of consideration at the hands of lawmakers and officials of the state.

For the purpose of investigating the needs of the college of agriculture at Berkeley, the university farm at Davis, and the state department of agriculture at Sacramento, the committee was divided into groups representing the various agricultural interests as follows; poultry, animal husbandry, dairy, agronomy, and deciduous fruit. During the last half of November the groups have met and gone into the work and plans of the divisions of the college and the agricultural department in which they were most vitally interested.

Perhaps the largest of these groups

published a report of control work with the boll weevil by dusting cotton with calcium arsenate, conducted by the station entomologist in 1919.

In nine plats in four localities in which power dusting work was completed, results which seemed to be reliable were obtained on 120.78 acres. The average yield per acre of seed cotton on this area was 903.5 pounds, representing a gain over the yield on the check areas of 247.5 pounds per acre, or an increase of 38 per cent. The total cost for treatment for the entire area was \$1,130.63, or an average of \$9.36 per acre for this part of the entire dusted area. The total net profit for the entire area amounted to \$2,775.79, which is an average of \$22.82 per acre net profit from the dusting work with power machines.

In three hand dusted plats with a total of 4.7 acres, from which complete records were obtained, there was an average yield of 668 pounds per acre, or an increase of 22.3 pounds per acre over the yield of check plats. The total gain from the dusting on the 4.7 acres was 1,044.75 pounds, worth \$135.82. The total cost for treating the 4.7 acres was \$44.13, leaving a total net profit for that area amounting to \$91.69. This is an average net profit

HELP THE TIRED WORKER

A Request In the Spirit of Christmas

Christmas shopping has begun!

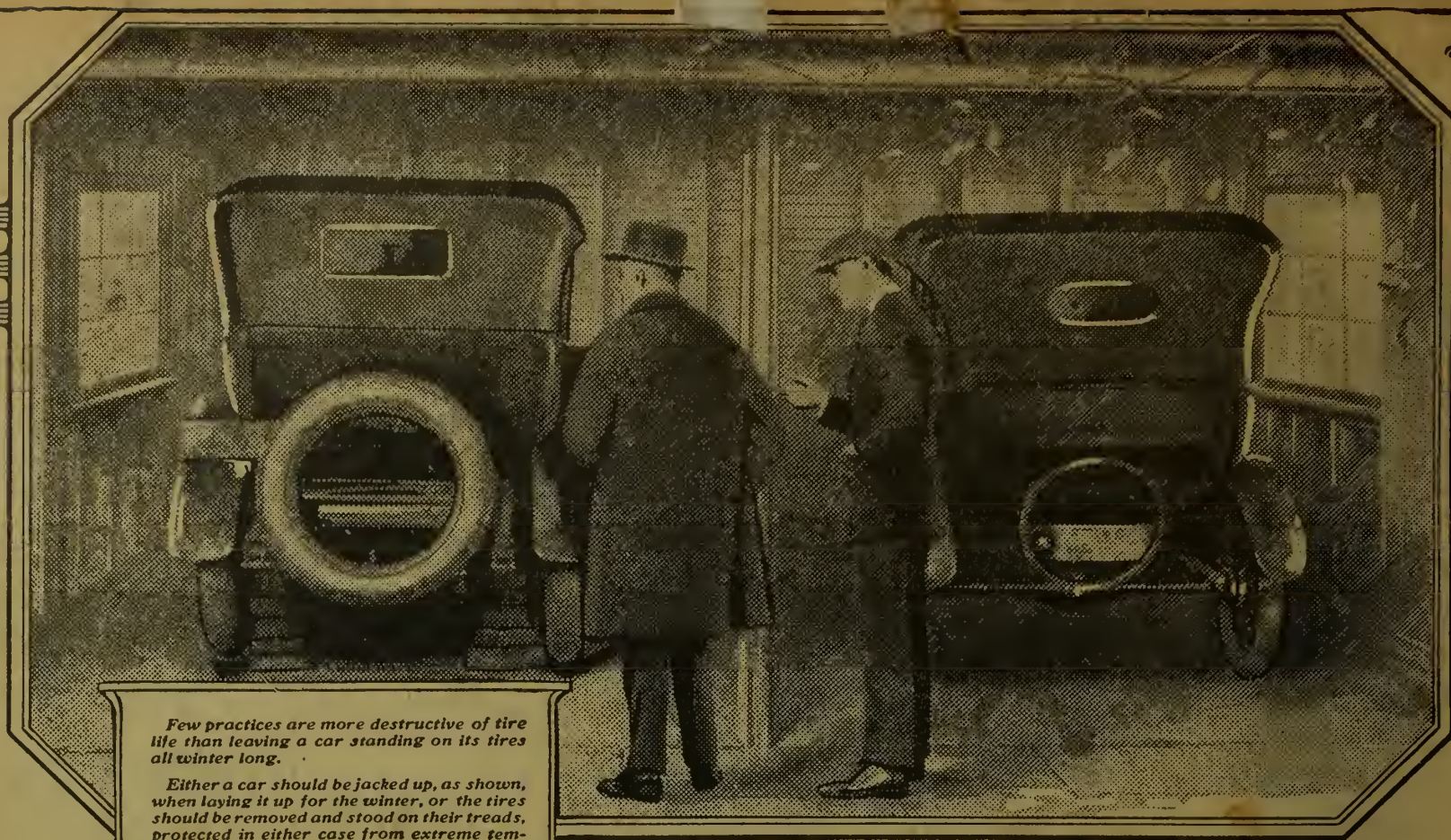
In addition to many passengers, we must, until December 25th, carry many packages and bundles,

Each day from 6 to 9 A. M., and from 4:30 to 6:30 P. M., every car this railway has (except those undergoing repairs) is in service moving the workers to and from their work, and at BEST some must stand for a part of their journey.

During the Christmas period, will you not contribute to the comfort of many tired workers by planning your journey to and from the city between 9 A. M. and 4:30 P. M.?

Will you help us to serve BEST those who NEED service most?

Pacific Electric Railway



Where there is Secrecy and Evasion there is Something to Hide

SMALL wonder that the tire-buyer's mind has been disturbed in the past few months. Suppose a man came up to you and offered to sell you a tire.

You would want to know something about it before you bought—where it came from—who made it—what it might be expected to do—and what the man who is selling it to you expects to get out of it.

* * *

Now reverse the situation. Go into a tire store.

You will never learn anything about the tires you

find there from the *prices*.

The size of the discount will never tell you anything about the *actual value* of the tires.

There is *only one* way of telling anything about the tires you find in a tire store—by their *reputation*—the standing and responsibility of the company behind them.

If a dealer has the *right kind* of tires in his store they will be known. They will have a reputable name on them. The buyer will be given *facts* about the tires.

* * *

The facts about United States Tires are easily obtainable.

Thousands of dealers all over the country stand ready to give them to you.

Dealers who are more interested in securing the *confidence and good will* of the motoring public than they are in merely selling a number of tires.

The United States Rubber Company stands behind these dealers with all the strength and influence at its command.

Backing their responsibility with its own. *Staking all of its great and wide and varied resources on the quality of its tires and of its dealers.*

* * *

United States Tires are *always* worth what you pay for them.

And the dealer who sells them to you is worth just that much more as a straightforward tire merchant.

United States Tires

United States Rubber Company



Fifty-three
Factories

The oldest and largest
Rubber Organization in the World

Two hundred and
thirty-five Branches

CALIFORNIA CULTIVATOR

and *LIVESTOCK* and *DAIRY JOURNAL*

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

Vol. LV

December 18, 1920

No. 25

A Christmas Carol

James Russell Lowell



"What means this glory round our feet,"
The Magi mused, "more bright than
morn?"

And voices chanted clear and sweet,
"Today the Prince of Peace is born!"

"What means that star," the shepherds
said,
"That brightens through the rocky
glen?"

And angels, answering overheard,
Sang, "Peace on earth, good will to
men!"

'Tis eighteen hundred years and more
Since those sweet oracles were dumb;
We wait for Him, like them of yore;
Alas, He seems so slow to come!

But it was said, in words of gold
Nor time nor sorrow e'er shall dim,
That little children might be bold
In perfect trust to come to Him.

All round about our feet shall shine
A light like that the wise men saw,
If we our loving wills incline
To that sweet life which is the law.

So shall we learn to understand
The simple faith of shepherds then,
And, clasping kindly hand in hand,
Sing, "Peace on earth, good will to
men!"

And they who do their souls no wrong,
But keep at eve the faith of morn,
Shall daily hear the angel song
"Today the Prince of Peace is born!"



Section of the Coco Ranch apricot orchard showing remarkable growth of trees which were planted in March, 1920. Assistant Superintendent Frew (with cap) in the foreground.



These lima beans on the Coco property produced, under proper irrigation, 1,300 pounds to the acre. President Teague (in straw hat) in the foreground, Manager Thorpe at his right, Superintendent Goodspeed in the background.

You Can Make BIG Money on CHEAP Land

The time has passed when men will grow rich on high priced orchard land. Interest on the investment and high taxes will eat up most, if not all, of the profits.

It is just as unwise to buy POOR land, simply because it is cheap.

Occasionally a tract of fine quality can be obtained at a reasonable figure. Such a tract is the 1,900 acre orchard property of the California Orchard Company, located on the State Highway between Los Angeles and San Francisco, in the famous Salinas Valley.

This tract, carefully selected by soil and horticultural experts, and probably the largest and finest undeveloped orchard proposition under irrigation in California, was purchased by the Company at the remarkably low price of \$126.50 per acre.

The deal was made direct with the former owners. No agent's commission was paid. Every dollar paid for stock by stockholders has gone into the treasury of the Company—no commission to anyone.

Development Already Well Advanced

The Officers, Directors, and principal Stockholders of the Company are all men of long and successful experience in California farming and horticulture, which alone assures complete success of the enterprise.

The Company took possession of the property January 1, 1920. Since then development has been phenomenal.

Headquarters buildings, boarding house, bungalows for family men, have been built.

Four 16 inch wells have been drilled, each producing over 250 inches of water, (a total of over 9,000 gallons per minute); 116,000 feet (22½ miles) of concrete irrigation pipe lines have been installed, and 16,000 feet of 20 inch and 16 inch steel pipe line laid.

Over 400 acres of trees are now planted to orchard, and 500 acres additional will be planted the coming spring. A nursery with over 125,000 trees was set out, from which will be selected the trees for completing the entire plantings fifteen months hence.

Until the trees reach bearing age, lima beans, peas, and vegetables will be profitably intercropped.

Eight varieties of trees are being planted about as follows:

Apricots	250 acres	Peaches	250 acres
Almonds	250 acres	Prunes	250 acres
Walnuts	250 acres	Pears	250 acres
Apples	250 acres	Plums	100 acres

All of these varieties have proven successful in the neighborhood.

By producing a wide variety of crops, some to pack and sell fresh, some dried, others to canneries, thereby averaging good markets with occasional bad ones, heavy crops with light ones, this investment is bound to prove safer than when staking all on one variety of product.

It is possible only with a LARGE PROPERTY of this kind to obtain the services of horticultural specialists. The Company's present Superintendent is Mr. W. E. Goodspeed, an agricultural college graduate, later instructor, and, prior to joining the army, Manager of Field Department of the California Walnut Growers Association.

Mr. Goodspeed has gathered around him an excellent staff of young and energetic workers, all

specialists in their particular lines, all of which insures the most economical and efficient development of the property.

The California State Commissioner of Corporations granted the Company privilege to sell 5,940 shares of stock AT PAR \$100 per share. This was all sold within the past year, except 268 shares, which according to permit cannot be offered ABOVE par.

The Company now offers this remaining allotment therefore AT PAR and feels that the funds thus raised will be ample to finance its operations till its orchards come into bearing.

However, if it is later found advisable to offer additional treasury stock, the price will surely be greatly advanced, as the intrinsic value is already between \$150 and \$200 a share.

To those having funds available we strongly recommend California Orchard Company stock as a safe, and ultimately most highly profitable investment. You may buy as little as one share.

This offering will be grabbed up quickly. Suggest you write today for prospectus, terms of sale, and any other desired information.

California Orchard Co. (Coco Ranch) 1326 East 7th St. Los Angeles, Cal.

OFFICERS AND DIRECTORS:

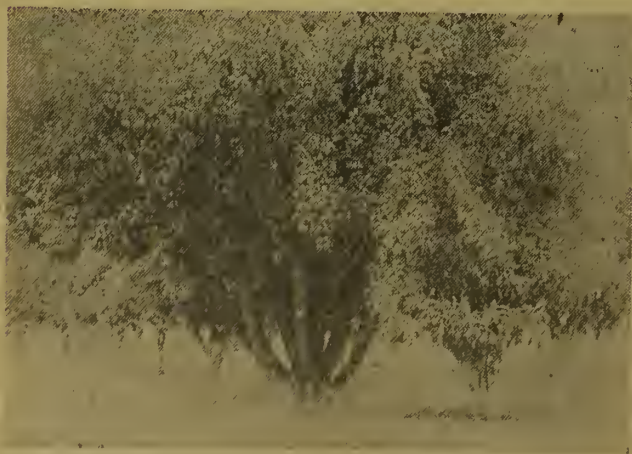
C. C. TEAGUE
President
Manager, Limonelra Co.

J. LAGOMARSINO
Vice President
Farmer Banker
President, California
Lima Bean Growers
Association,
Director, Bank of Italy

C. THORPE
Secretary
Manager, California Walnut Growers Association

A. L. HOBSON
Farmer and Stockman
President, Hobson Brothers Packing Company.

H. E. WOOD
Capitalist, New York



This pear tree on Salinas Land Company ranch one-quarter mile from Coco property shows the prolific crop of excellent fruit which trees in this locality produce. It was difficult under the light conditions when this photograph was taken to bring out the tremendously heavy crop of pears on this tree. It was simply loaded with beautiful fruit.



Seven year old apricot orchard located four miles north of Coco property. The 1920 crop of this orchard sold for \$435 per acre. With sufficient water available, as is the case with our own land, production would have been more than twice as heavy—evidence of what can be reasonably expected under our favorable conditions.

California Cultivator

Vol. LV, No. 25

Los Angeles, December 18, 1920

One Dollar Yearly

Back to Normalcy With Livestock

By R. P. Royce

THAT the agricultural industry of the nation is passing through a critical period of readjustment there can be no doubt. In nearly every commodity there has been a drastic lowering of values, and in most cases the drop has been altogether too severe to be justified by conditions. If the last statement is true, and the writer believes that the majority of producers will agree, it is safe to predict that before long values will show considerable strength above present ranges for the reason that natural de-

mand is bound to put values where they rightfully belong. Generally speaking, we can be equally certain that we will not see a rebound to levels maintained during the war years. There is a definite and apparently inexorable demand for lower living costs and we who are interested in agriculture might just as well make up our minds to that truth now as later and plan to get our operations on a sound basis. The present is no time to jolly ourselves into be-

lieving that values will speedily get back to the peak points from which they have fallen or to throw up our hands with the feeling that the bottom has dropped out of everything. We are simply getting back to earth and while doubtless many producers are going to be pretty hard squeezed, in the main we will all pull through.

The future prosperity of agriculture will depend to a large extent on how we as individuals meet the present situation.

In any scheme of readjustment we will do well to remember that while organized effort can be made to accomplish much, such accomplishment will be in direct proportion to the individual efforts and intelligence of the cooperators.

So far as livestock production is concerned it is admitted that values have reached an unwarranted level, but in that respect livestock is no different from practically all other agricultural products. Furthermore, we can be fairly certain that livestock values will

(Continued on Page 806.)

Get Busy Quick With Peach Blight

FOR a score of years peach growers have been fighting peach blight, and in some sections, especially in the interior valley, find it necessary to persist in the fight. The best period of the year to accomplish the destruction of the pest, or at least to control it, is in the fall or early winter as soon as the leaves drop and make possible clean work. All peach orchards should be sprayed prior to January 1 with a good fungicide, preferably Bordeaux, though some feel that lime-sulphur 1-10 is equal in its beneficial effects and, in addition, rids the trees of San Jose scale. In a bulletin on the subject Prof. Smith remarked: "September is too early and February and March too late; December gives best results."

Here enters another disease which also complicates the situation. This is peach leaf curl. The same spray which succeeds with the blight also succeeds with the leaf curl but, unfortunately, the blight has to be sprayed very late while peach leaf curl is best controlled by very early spring spraying. Hence it appears to be almost necessary to give two sprayings.

Presumably nearly all of the peach growers are today using the commercial mixture of lime-sulphur wash, but for those who may prefer, here is the formula for the home made lime-sulphur solution: Stone lime, 50 pounds; sulphur (sublimed or powdered), 100 pounds; water to make 50 gallons.

Heat in a cooking barrel or vessel about one-third of the total volume of water required. When the water is hot add all the lime and at once add all the sulphur, which should previously have been made into a thick paste with water. After the lime is slaked another third of the water should be added, preferably hot, and the cooking should be continued until a clear orange colored solution is obtained (usually 45 to 60 minutes), when the remainder of the water should be added, either hot or cold, as is most convenient. The boiling due to the slaking of the lime thoroughly mixes the ingredients at the start, but subsequent stirring is necessary if the wash is cooked by direct heat in a kettle. After the wash has

been prepared it must be allowed to settle and then be strained through a fine sieve as it is being run into the tank. The resultant product is a concentrated solution of lime-sulphur, which should be diluted about six times with water for a winter spray.

In case the commercial lime-sulphur is used, either nine or ten parts of water to one of the lime-sulphur is effective, not only effective, but we believe rather more economical, especially in view of the fact that a mistake in cooking or preparation of the home made mixture lessens its effectiveness. After this spraying, which should be done at once, trees may be allowed to rest until the buds begin to swell in the spring, when a thorough spraying with Bordeaux mixture will have some advantage in control of the blight and more of value in leaf curl control. We have asked County Horticultural Commissioner Ryan to give us the latest in curl leaf. Mr. Ryan says:

Leaf Curl of the Peach

Peach leaf curl, or "curly leaf" of the peach, as it is often called, is one of the most common and easily identified diseases of the peach. The leaves as they develop in the spring will curl and become distorted and take on an unnatural color which sometimes develops into a bright pink or red.

There seems to be no way of determining in advance whether the disease will appear or not. Some varieties of peach seem to be more susceptible than others, and individual trees in the same orchard will show a difference in the amount of injury. Cold, damp weather in the spring is most favorable for the development of leaf curl.

Sometimes a swelling of the affected shoots will occur, but the characteristic injury to the leaves is unmistakable. A considerable loss of young fruit often occurs, and as the deformed leaves die and drop from the tree a loss of older fruit is often caused when the injury is extensive even though a new crop of leaves is later developed.

The disease can be almost entirely prevented by spraying thoroughly so as to cover all parts of the twigs and buds just before the buds open in the

spring, using commercial lime-sulphur, 1-10, or Bordeaux mixture, 5-5-50 formula.

Spraying is of little value after the leaf buds have opened and the fungus has had a chance to enter.

TWIG BLIGHT OF PEACH AND APRICOT TREES

By T. D. Urbahns

The severe blighting of peach, apricot and plum trees in many localities during the spring of 1920 and causing a loss totaling many thousands of dollars to California fruits, was without doubt mostly caused by the disease known as brown rot (*Sclerotinia fructigena*).

The spores from which this disease develops multiply upon the mummified fruit and infested twigs, on the trees or on the ground. These spores being so light that they are readily carried in the atmosphere, drift freely about with the wind. Atmospheric humidity and the absence of sunlight appear to be favorable to the development of this disease. Its first appearance may be noticed on the blossoms. Many of them are killed and the disease then works down the fruit spurs to the twigs. The fruit and leaves of the affected twigs wilt in a few days. Frequently the disease enters a fruit spur two or three feet from the end of a branch, killing the cambium layer and sometimes girdling the smaller branches which in turn wilt and dry. The fruit fails to set, twigs die back and gumming of the branches follows.

A week or more of bright sunlight and dry atmosphere retards the spread of this disease, but poor air drainage, spring showers and fogs result in its continued spread. Fortunately, our summer climate, being one of low atmospheric humidity in most of our interior valleys, is unfavorable to the further development of this much dreaded disease. Otherwise we might expect even greater losses by its becoming active upon ripening fruit and fruit en route to marketing points.

The best authorities on plant diseases still differ somewhat in their opinions as to the complete control of this fungus disease. It is however apparent that certain definite practices in orchard sanitation are of value in checking its ravages and that spraying practices are necessary for its

practical control. Even with the best of methods this fungus disease is difficult to control under unfavorable weather conditions.

Control methods should unquestionably begin in the fall or even in the summer. The infected branches should be carefully pruned away and burned. All decayed fruit should likewise be destroyed and every precaution taken to remove the mummified fruit remaining on the trees during the winter. This should either be burned or thoroughly covered by plowing.

With the best possible clean-up in an orchard it would be practically impossible to remove all sources from which the brown rot spores originate. It then becomes necessary to destroy such spores as may adhere to the bark or bud scales, by the application of an effective fungicide. This may necessitate one, two, or more sprayings, depending upon the effectiveness of the materials used and the thoroughness with which the work is done. Either the Bordeaux mixture (6-6-50) or the lime-sulphur, winter strength, should destroy all spores actually saturated with the fungicide in early spring before the breaking of the buds. Fall spraying is unquestionably of value but should not be completely relied upon because many additional spores of the brown rot disease may again become lodged on the bud scales between the time of fall spraying and the blossoming period.

The value of spraying after the blossoming period is unquestionably reduced because it is practically impossible to reach the diseased tissue within the fruit spurs and twigs by the external application of a fungicide. A lime-sulphur spray (1-15) at the time the blossoms are opening and another application (1-25) after blossoming, is sometimes recommended. Additional sprayings with wettable sulphurs are also sometimes applied to protect the growing fruit.

The writer understands that detail experiments are being conducted by Dr. Howard of the University of California to determine the comparative value of the different spray applications. Let us hope that through this source we may soon have additional light that will aid us in the protection of trees and fruit from the brown rot disease.

Agricultural News Notes of the Pacific Coast

Northern California

Sacramento County starts a farm bureau drive this month.

Williams, Colusa County, will have a community Christmas tree.

Magalla, Butte County, records for the season over 30 inches rain.

A new farm center has been organized at Trenford, Yolo County.

Orland, Glenn County, expects to ship out between 500 and 600 boxes of oranges.

The winter vegetable crop is moving from the Sutter Basin. Grain seeding has begun.

Large shipments of celery are now going out from Antioch and Walnut Grove sections.

Land owners of Colusa County have expended more than \$2,000 in rodent control since March, 1919.

Hundreds of rice field workers have lost their jobs and left for cities because of recent storm damage.

The annual meeting of the Alameda County farm bureau was held at Hayward on Saturday, December 11.

Sutter County farmers are indignant over many purchases of land by Japanese just before going into effect of anti-alien law.

The Arbuckle chamber of commerce is already laying plans for a bigger and better Arbuckle Almond Show and Colusa County Fair.

Vegetable and produce growers of the state are being organized into a cooperative marketing association by the state market commission.

California is among the first states in the production of onions with a record of 2,000 carloads out of the state and a record of 300,000 sacks raised annually.

Humboldt County has a newly organized milk goat association. The association has purchased necessary machinery and negotiated for a cheese maker from Switzerland.

Glenn County farm bureau meetings: Codora, December 13; Capay, 15; Plaza, 17; board of directors, 1 p. m., 18; Willows, 20; Larkin, 21; Grapevine, 22; Elk Creek, 27.

The Chico-Orland state highway section hopes to have bridge built over the Feather River at a total cost of about \$130,000, the bridge to be completed before the end of 1921.

Fig growers of the Oroville section held a meeting the last day of November and were addressed by I. J. Condit who is now connected with the California Peach and Fig Association.

George Compere, deputy quarantine officer at San Francisco, took a 20 foot tumble from the ladder at the side of an incoming steamer to the deck of a tender below and was quite seriously injured.

As a part of the work of the fruit growers short course given at the university farm at Davis attendants made tour of the orchards of the Delta district viewing demonstrations in pruning and other cultural operations.

The Pacific Rice Growers Association has fixed upon \$2.60 f. o. b. to growers. Clean rice prices are named as follows: Fancy head, \$5.25; choice head, \$5.00; fancy screenings, \$3.40; choice screenings, \$3.15; brewers, \$2.85. On this basis fancy No. 1 paddy should net the grower \$2.60 to \$2.70 at shipping point.

Central California

Monterey reports a great number of whales offshore.

Santa Cruz poultry producers are uniting in marketing eggs.

Hanford, Kings County, is holding a poultry show this week.

The highway between Watsonville and Santa Cruz is now paved.

Birds reduced the toyon berries so that the crop this year was small.

The Lion ranch at Gilroy is being subdivided into 10 to 40 acre tracts.

Santa Cruz County is making a campaign on coyotes and other predators.

Livingston, Merced County, is talking of development of a rice growing section.

Owens Valley maintains that it will be one of California's finest pear producing sections.

Tracts which have grown cereals for years are giving way to orchards and vineyards near Clovis.

A grain growers club has been organized from the membership of Stanislaus County farm bureau.

Inyo County's Pear Producers Association was recently organized at Bishop. W. Waterson is president.

The Tulare County farm bureau has been holding a series of vine pruning demonstrations conducted by A. E. Way of the Kearney Vineyard.

A bond issue of \$2,000,000 has been proposed for the acquisition by the Fresno irrigation district of the Fresno Land and Canal Company.

Lindsay district, Tulare County, reports its 18 packing houses operating at full capacity. One hundred carloads per day are being shipped out.

The Tulare County farm bureau has decided to establish a purchasing and a selling division through which members may buy at wholesale prices farm implements and other supplies.

Kern County farm bureau meetings: Mountain View, 20; Pond, 22; Inyo-Kern, 23; Rosedale, 24; Shafter, 29; Arvin, 31.

Rice growers of the Oakdale districts have been seriously handicapped in harvesting operations by heavy rains, but they report yield from land already harvested much better than anticipated.

Farm bureau representatives recently appeared before the state railroad commission and representatives of the California Edison Company at Visalia and made appeal for consideration of farmers rights in revision of rates.

J. F. Niswander, vice president and general manager of the peach growers, estimates that the 1920 fig crop will amount to 9,000 tons. The crop is being assembled in the warehouses of the Peach and Fig Growers Association. There is very little sale of figs at the present time.

At a meeting of sheep growers at Stockton, November 29, the following resolutions were passed and sent to California representatives in Congress: "The Central California Wool Growers Association in session at Stockton, California, strenuously urges your immediate action looking to federal aid for the protection of our industry and from total loss due to competition with foreign wools and frozen meats."

Southern California

The Garden Grove Walnut Growers Association is operating a cracking plant.

The Highgrove Fruit Exchange claims the honor of sending out the first Navel oranges from the Riverside district.

Cantaloupe growers of Imperial Valley are discussing acreage for next year's planting. Contracts are not yet being made.

Garden Grove Walnut Growers Association has closed its first pool. Twenty-five carloads have already been sent out.

The Japanese farmers association estimates that 8,500 acres will be planted to lettuce in the Imperial Valley this winter.

Imperial Valley cotton growers have been saved \$153,000 because of association's management of the harvest labor campaign.

Sugar beet growers of the southern end of the state met at Santa Ana last Saturday and took steps to form a cooperative association of growers.

The Anaheim Citrus Fruit Association netted to members for last year's fruit \$798,605.25, about \$2.38 per loose box as delivered from the groves.

Manager Churchill of the California Lima Bean Growers Association reports a heavy carryover of small white beans in this state and in Michigan.

Imperial Valley is joining in the campaign to secure reconsideration of the recent increase in freight rates which will prove almost prohibitive.

Better quarters for girls employed in packing houses is being urged by the citrus growers of the San Dimas-La Verne district of Los Angeles County.

Los Angeles County farm bureau held an all day outdoor session on the Santa Anita Ranch last Saturday. The occasion was the regular annual meeting.

Navel oranges have colored nicely and liberal shipments have been made from the southern end of the state. The real shipping season will not open until early January.

The Alfalfa Growers Association will follow a new system of marketing alfalfa, working through representatives of farm bureaus and local representatives in various purchasing centers.

The southern end of the state was visited by a light rain which was considered the tail end of the recent severe storms of the North. A few sections received but little more than one-tenth of an inch.

After January 12 there will be a quarantine in force against grape cuttings from north of the Tehachapi being brought into Southern California. This is intended to prevent spread of phylloxera.

The California Fruit Growers Exchange, through its industrial relations department, states that unless some definite effort is made the supply of Mexican labor in Southern California will all have returned to Mexico.

Stage lines operating between San Diego and Imperial Valley, Los Angeles and San Diego and Los Angeles and Santa Barbara have received authorization from the state railroad commission to raise their rates approximately 15 per cent.

The Coast and General

Isle of Pines is now shipping grapefruit to New York.

The national congress convened on December 6. Great crowds were in attendance.

A drainage district is to be created along Beaver Creek, Oregon, to drain 2,000 acres.

Many Lane County, Oregon, dairymen purchased stock at the Pacific International.

Italy reports an excellent crop of nuts this year, almonds and walnuts especially good.

Dairymen of Dubois, Pennsylvania, have established a successful milk distributing system.

The Oregon Growers Cooperative Association recently shipped a carload of prunes to Holland.

The Northwestern Fruit and Potato Growers Conference will be held at Spokane, Washington, December 13-17.

Washington apple shippers are not sending much fruit to Eastern markets because of excessive freight rates.

The United States department of agriculture will use the wireless telegraph in its market news reporting service.

The Central Oregon Potato Growers Association will ship seven cars of seed potatoes to the Yakima Valley of Washington.

Dairymen of Oregon have formed the Oregon Dairymen's League to handle marketing and generally to build up the business of members.

The Western Winter Poultry Show will be held at Portland, Oregon, December 13-18. W. S. Russell of Oakland will be one of the judges.

One thousand acres of new land on the Yakima Indian reservation, Washington, will soon be thrown open to lease. This land is under irrigation.

The Alabama legislature has recently passed a law requiring that all oriental peanuts, peanut products and vegetable oils be branded "Oriental."

The second annual convention of the American Farm Bureau Federation at Indianapolis was attended by agriculturists of note from all over the nation.

Florida citrus growers say they are up against a ventilator car shortage which is the worst ever known. Many of the cars offered are said to be absolutely unfit for use.

There has been considerable interest in Oregon in flax raising and growers have been investigating the cost of flax pulling machines. The conclusion is that hand pulling is at present much cheaper.

At the National Beverage Exposition held in Cincinnati early in November more than 10,000 sampled the grape juice sent by the California Grape Growers Exchange, the entire supply being quickly exhausted.

The joint annual meeting of the Washington State Horticultural Association, the Northwestern Fruit Growers Conference, the Washington State Grade and Pack Conference, the Northwest Potato Growers Conference, the Washington State Beekeepers Association and the Inland Empire Beekeepers Association will be held at Spokane, December 13-17.

Improvement of Nursery Stock

By L. B. Scott Before Ontario Institute



THE improvement of nursery stock is a subject which is worthy of serious consideration. Any factor which tends to improve nursery stock is one which should interest fruit growers. In this connection I know of no more important thing than the proper selection of bud wood and the proper type of bud wood to use in nursery propagation.

While the fact that bud variation exists in horticultural varieties has been known for many years, it remained for A. D. Shamei of the United States department of agriculture to point out the great frequency with which bud variations occur, and that by means of careful bud selection the better strains and the best individuals within these strains could be perpetuated. Mr. Shamei was the first man to realize the great importance of bud selection and his comprehensive investigations, which were begun in 1909 for the United States department of agriculture and which have been continued without interruption by him and his associates since that time, have meant a great deal to fruit growers, not only in California, but in all parts of the United States. In fact, all sincere attempts at the improvement of fruits by bud selection have been a direct outgrowth of his investigations.

The investigations which Mr. Shamei and his associates have conducted for the federal department with citrus and deciduous fruits, in addition to showing the variation which exists in many established orchards, have also pointed out the reason for this variation, namely, the lack of care which formerly has been used in the propagation of trees. It was the common practice of nurserymen engaged in propagating any fruit to cut buds from nursery rows and from nursery prunings or, if buds were taken from orchard trees, to make no attempt to select them from trees which were known for their bearing qualities, but simply to cut bud wood where it could be obtained at a minimum of time, effort and expense.

The department investigations have shown that several years records must be secured before any individual tree can be designated as suitable for use as a source of bud wood. As a

result of this work the term "selected bud wood" or "performance record bud wood" has come to mean bud wood cut from superior bearing orchard trees on which actual records of the amount and quality of fruit produced by all the individual trees in the orchard for a series of years have been secured.

The formation of the Nurserymen's Bud Selection Association of California was heralded by fruit growers, nurserymen and others interested in California horticulture as a progressive step towards the solving of the question of securing a better type of bud wood, and thus assuring the public a better type of orchard tree.

We were at once confronted with the problem that there was an immediate demand for bud wood and, with the possible exception of a few olive and walnut records, practically no individual tree records of deciduous fruits had been secured in this state. I at once saw that it was impossible to furnish bud wood to the nurserymen this season which could in any sense of the word be called "selected." I also realized that if my time and that of other employees of the association were given entirely to the cutting of bud wood for this year's propagation that no attempt could be made toward securing a better type of bud wood for future propagation. We therefore began securing estimated records of production in a number of different orchards to see if this plan might not prove a short cut toward securing information regarding individual trees which could be used as sources of bud wood. A few weeks' work along this line soon convinced us that, while some progress could be made, the only way whereby we would feel absolutely safe in stating that we were in a position to furnish selected bud wood would be by securing actual individual tree records, as had been done with citrus fruits, for a series of years, and then only taking bud wood from the individual trees which, after a series of years, had shown themselves to be the best producers. Accordingly on July 31 the reorganized

plan of work for our association was presented and approved by our directors. This, in brief, was that the entire time of the investigational staff of the association would be devoted to the securing of individual tree records for a period of three years and that no bud wood would be furnished to the members of the association until three years records had been secured, which would mean that bud wood, which could be called "selected" or "performance record bud wood," would not be handled by the association until 1922. It was further agreed that bud wood would only be cut from bearing trees in established orchards and that the owners of the trees would be paid a reasonable price for the bud wood. Acting on this plan we immediately began securing individual tree records and since that time have secured between 15,000 and 20,000 individual tree records of the following varieties: Prunes, French, Robe de Sargent and Imperial; peaches, Paloro, Albright, Sims and Phillip's; pears, Comice, Winter Nellis, Glout Morceau, Beurre d'Anjou and Easter Beurre; apples, Winter Banana, Bellflower, White Winter Pearmain and Newtown; and a few walnut records.

In order to supply the buds which are used by the different members of the association of the important commercial varieties of deciduous fruits, it is necessary to secure a great number of individual tree records, as we will undoubtedly find that in many orchards not more than ten per cent, or at the most 20 per cent, of the trees will prove suited for sources of bud wood. If the work is extended to include all the other varieties which are now being propagated by members of this association, as it is hoped it will be, it will be necessary for us to secure somewhere in the neighborhood of 75,000 or 80,000 individual tree records.

Judging from our experience in securing records this year we have been able to estimate the cost to the association when the work is extended to all varieties commonly propagated. The records can be secured at a cost

of not to exceed \$20,000 per year, which cost will include salaries, office expenses and all field expenses, which, considering the magnitude of the work involved, is a very small sum of money.

The following is a summary of the actual production records on 1,056 French prune trees. These trees are five years old and the data is presented at this time because the soil conditions and other environmental conditions in this particular orchard are as uniform as probably can be found in any place in the state. In studying these figures you will notice there were 65 trees which produced 100 pounds and over, 32 trees from 90 to 100 pounds, 152 trees from 80 to 90 pounds, with the largest number of trees ranging from 40 to 80 pounds. There were, however, 74 trees which produced from 30 to 40 pounds and there were 64 trees which were found to produce from 0 to 10 pounds. These records are not only suggestive but are very interesting, in that they show the great amount of variation which exists in this particular orchard, which was considered by the owner as the most uniform block of prunes he had knowledge of in his locality.

The work of the association this year, at least, has demonstrated conclusively that it is not an impossible task to secure a sufficient number of actual individual tree records so that individual trees can be picked out which can be used as sources of bud wood. It has further shown that it is possible to cut all this bud wood from trees in established bearing orchards, provided the public is willing to wait a few years until a series of records can be secured.

1920 Individual Tree Performance
Records of a Five Year Old
French Prune Orchard,
Containing 1,056 Trees

0 to 10 pounds.....	64 trees
10 to 20 ".....	21 "
20 to 30 ".....	40 "
30 to 40 ".....	74 "
40 to 50 ".....	130 "
50 to 60 ".....	135 "
60 to 70 ".....	201 "
70 to 80 ".....	142 "
80 to 90 ".....	152 "
90 to 100 ".....	32 "
100 and over.....	65 "
	1056 "

Nurserymen's Bud Selection Association

By Max Crow



THE first steps toward the formation of an association for the selection of buds on a commercial scale for propagating purposes were taken at the 1919 meeting of the California Association of Nurserymen at Chico a year ago. Wm. T. Kirkman, Jr., president of the Nurserymen's Association at that time, is chiefly responsible for getting the work started on a practical basis; it was he who urged the association to get busy, and his efforts resulted in the appointment of a committee of five to meet in San Francisco within 30 days to devise a plan for the organization of a practical working association. This committee met in San Francisco on December 18, 1919, and after long discussion of ways and means all present signified their willingness to assist in putting the movement on its feet, and the following nurserymen being present they were appointed to act as directors for

the first year and to arrange the necessary preliminaries: Wm. T. Kirkman, Jr., J. E. Bergtholdt, J. S. Armstrong, Geo. C. Roeding, Max J. Crow and H. A. Hyde. Subsequent meetings as necessary were held, articles of incorporation filed, by-laws adopted, and the Nurserymen's Bud Selection Association of California was formally launched with a capital stock of \$150,000, divided into 1,500 shares of a par value of \$100 each. To date 233 shares have been subscribed for by 17 nursery firms.

The preliminary work necessitated many meetings covering several months so it was not until February 20, 1920, that a general manager was appointed and the directors began to feel that the wheels were really turning and that much valuable work could be accomplished during the following fruit season.

During the organization of the bud association the men engaged therein had nothing whatever to guide them; the ground covered was absolutely new and naturally some mistakes were made; but persistence, a full realization of the benefits to be gained for the fruit interests of the state and a give-and-take spirit carried the thing along and I am perfectly safe in declaring that the Nurserymen's Bud Selection Association of California is an accomplished fact and so firmly established that its principles will be carried on for all time to come.

Some seem to think that the benefits from the association will be all to the nurserymen. The actual facts are that 95 per cent of the benefit from the work we are doing will be to the orchardists of this state. All the nurseryman will get out of it is the satisfaction of giving his customers a

tree always true to name and propagated from good parentage, and possibly a few cents above the scrub tree price to cover the actual cost of the extra care and expense of genuine bud selection.

During the past summer we have had from three to five men constantly in the field, examining, tagging and getting production records on the various fruits as they ripen. Up to date our workers have secured individual production records of 7,912 prune trees, 4,076 peach trees, 1,407 apple trees, 1,712 pear trees and 458 walnut trees. In addition to this several orchardists have been located who, for several years, have been in the habit of keeping production and other records of the individual trees in their orchards, and I am glad to say that in nearly every case these public spirited men have given, or offered to give, the association copies of their

(Continued on Page 796.)

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EDITORIALETTES

Californians are wondering over the Johnson immigration bill. It was rumored that all immigration was to be prohibited for a period of 12 months excepting that America's "treaty with Japan" should be honored and the Japanese permitted to come. After passage of the bill by the house wire announced: "All immigration restricted for one year." Californians are wondering whether these dispatches mean what they say or whether there is to be a favored nation.

Later it develops that the bill as passed by the house provides complete exclusion—with some exceptions such as students, artists, etc.—and will doubtless be vastly more effective than the "Gentlemen's agreement."

The postal savings rate is still two per cent. These funds are deposited in banks at two and a half per cent. This is good business. But the government still needs money, so, to be liberal with the banks, it turns and borrows back from them some of its own money and pays six per cent—this on short time certificates. This, likewise, is good business—not. However, here is another angle which shows that the government is doing good business. The borrowing on these certificates at six per cent is a powerful aid in hammering down

values of Liberty Bonds which are drawing only four and a quarter per cent. This has resulted in a loss to the people of around \$14 on each \$100 they advanced to the government. Here is where good business comes back, for the dispatches announced only a few days ago: "Federal government clears over \$100,000,000 in buying its own bonds." Good business—poor ethics.

Put a candle in the window on Christmas eve. It is a beautiful custom in many cities. Why should not the rural homes all over the country send out their rays of cheer? For many years Cleveland, Ohio, through certain musical organizations has had groups of carol singers who go from house to house, at least to those having the lighted windows, and sing carols and accept offerings in aid of worthy and needy young musicians. This year all energies are bent toward saving the starving children of Europe and Asia, and the response is proving liberal, though, no matter how liberal, the full needs of those suffering countries cannot be met. Put a light in the window.

Not content with having all the candidates for president within her borders, Ohio is now ready to aid in cabinet making. She seems to have a well working publicity bureau pushing for secretary of agriculture. All we can say to Ohio is: "For the love of Mike! Be reasonable!" California has two or three candidates; give them a chance to speak their pieces.

The farm bureau folks had a great convention in Indianapolis last week. They discussed the awful financial situation in which many farmers find themselves, and in discussing some transactions at Washington, in which they asserted farmers were discriminated against, they omitted the dis.

A few sentences from the resolutions: "The present price situation has lost the American farmers seven billions this year." "Need of rural personal credits important." "Increase farm loan limit to \$25,000." "Condemn interstate commerce commission for valuing railroads at five billions in excess of commercial value." "Return to states power to regulate rates, car distribution, etc." "We demand enactment of Truth in Fabrics bill." "Right demanded as to collective bargaining." "Delay action as to stockyards till committee of 15 investigate." "Women membership approved." Daylight saving condemned." More next week.

DREAMING DREAMS

Since the days of '49 Californians have stood on the river banks at times of winter floods and lamented the passing of all that wealth as an element of destruction and wished it could be held until mid-summer and poured upon the thirsty land. The standing on the bank has continued all these years with but few examples of action. There has been occasional flood conservation and rich crops have resulted, but this so seldom as to serve merely as a striking example of what we should all be doing. We have united more or less in shouting "Store the Floods." Several have dreamed these dreams of utilization of the wealth nature has given to us. More recently there has been direct action, or at least request for action, with gathering of data which may convince the majority of us that the time for doing has arrived.

Col. R. B. Marshall, either as an engineer of the U. S. geological survey, or because of his own desires, has been gathering of the Sierra Nevada information as to some of her resources, and has dreamed of a great system of canals in which the flood waters of the Sacramento, after being stored in the mountains, shall be carried around the northern end of the Valley and down its west side even to the middle of the San Joaquin Valley, and again another canal shall gather of the waters of the Feather River and, as it passes down the foothills pick up the stored floods of the American, the Calaveras, the Mokelumne, the Merced, the San Joaquin, the Kings and even scores of other rivers and carry them down the east side of the great central valley, even into Kern County, around the southern end of the valley and up to meet the great canal which comes down the west side. Again, the waters of the Kern shall be taken through the mountains, through even 30 miles of tunnel, and poured over some of the rich valleys of Southern California. The cost is enormous, even to hundreds of millions, some think possibly to a billion of dollars, but even then the assertion is made: "California can do it."

We recall that some years ago when the city of Los Angeles was only a third its present size and its people not possessed of great wealth, there were those who said "It can't be done," when that little city, with its inhabitants almost as one, decided to bring the waters of the country's highest mountain 250 miles. "It will cost \$40,000,000 which is a greater burden than the people can bear." They raised the money; they brought the water to the city; the city has grown beyond the wildest dreams; it has grown until today engineers are making investigation and find that if this rate of growth is to be continued, in 40 or possibly 45 years new water supplies must again be secured.

Now has California faith in her own resources, her own capital and her own engineers? Col. Marshall's dream is not yet complete in all its details; it may be even wild in some of its particulars; but nothing is too big for California, and we believe the people who are seriously asking as to the future possibilities of this state are wise in giving attention to these dreams and to the association which has been formed to make them come true.

WILD JUSTICE

Some states of the South which have looked with more or less of approval on the work of vengeful and uncontrollable mobs now find opportunity to divert attention and are pointing toward the Pacific. Some Californians even are pointing to the town with saintly name north of San Francisco Bay and charging her with bringing terrible disgrace upon our state. A horrible crime—or many of them—was committed and swift justice visited upon the criminals, and some of us are asking of Santa Rosa why she did it.

But is Santa Rosa or any one community alone responsible? The crime, or rather the series of crimes, which resulted in the lynching began in San Francisco. We may say they began there many years ago. It may be recalled that but very few years ago a movement was started, led by the minister of one of the churches, in an attack on the dens of vice. The move-

ment was charged by some with being the work of fanatics of one single church organization, and many felt at the time, in fact, it was openly claimed, that the movement was not fully supported by peace officers nor courts. And since that movement subsided it is freely said that there has been more or less of winking at various violations of moral and civil law.

We may go back still farther and to the southern part of the state. An October morning in 1910 witnessed a terrible explosion from dynamite in which 21 persons lost their lives. The perpetrators, some of them, were captured, and two, at least, made confession in order to escape the extreme penalty. Another was later captured and sentenced to a term, we believe it was ten years. He is now seeking parole.

Again, only a few weeks or months ago a fiend was accused of being a super-Bluebeard and marrying and then murdering a dozen, or was it a score, of women. Because of the difficulty in securing evidence, which "difficulty" seemed astounding in view of the facts which were later shown, a confession of the crimes was accepted with agreement to remit the extreme penalty.

When the basest and most horrible of crimes can be committed with this apparent immunity from extreme punishment, why should people with basest desires make effort to control? Why even hire an attorney when escape from enforcement of the laws of the state is so easy? Again, coming nearer, or to November 2, 1920 when the people of the state of California said; "We will have nothing of 'An Act Enforcing the Provisions of Article XVIII of the Constitution of the United States.'" The people who said in effect: "We will have nothing to do with the constitution of our country," did not mean their verdict to be taken as it has been by many, nevertheless it was an expression which could be construed in only one way by the criminally minded.

We are horrified that such action seemed necessary in California, but it may serve as warning to our courts and peace officers that if the servants of the people do not vigorously enforce its laws, the people will.

When the procedure of our courts and the practice of the law has come to be so largely devoted to quibbling over technicalities and to legal evasions of law, while the most beastly and indefensible crimes go unpunished or lightly punished, it is evident that the time has come for a reconstruction which will allow administration of justice.

A VOIDING ACCIDENTS

An Eastern town has enacted a very simple, short and effective ordinance. Practically the entire text consists of "At all street intersections the man at your right has the right of way." If we could all remember that it would be the greatest of all preventives of auto accidents, that is, if we except reckless speeding. Unfortunately, prevention of accidents calls for common sense, and that seems to be especially lacking in many drivers of automobiles.

It will help some if we all try to remember the above concise rule. If we are driving north the man going west has right of way; likewise if we are going south the man from the west. But the simplest of all is to remember "the man at the right."

For the Good of the Greatest Number

Two distinct aims, each of them conceived in the interest of the public we serve, have animated this Company in all its activities since the beginning.

One is to produce products of uniformly fine quality; the other is to manufacture and distribute these products in sufficient volume to keep their cost low.

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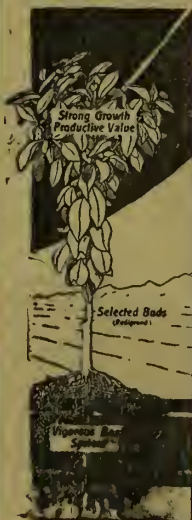
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Control of Mealy Bug

Investigations by R. S. Woglum of the United States department of agriculture of the citrus mealy bug (*Pseudococcus citri*) resulted in the discovery that it could be successfully controlled by four important predators (*Symphorobius*, two species, *Hyperaspis* sp., and *Cryptolaemus* sp.) provided ants, particularly the Argentine ant, were eliminated from the infested territory.

The control of the Argentine ant by use of poisoned syrup having been accomplished, it was found that *Cryptolaemus* was the only one of the four predators which fed freely on the citrophilus mealy bug (*P. gahani*), but that other important predators of this pest were the *Leucopis* sp. and *Scymnus* sp. The combined efforts of these species failed, however, to control severe infestations, although quite effi-

cient in lighter infestations. Spraying with the insecticides effective against the citrus mealy bug did not prove satisfactory, and fumigation proved to be a failure.

Studies of the citrophilus mealy bug revealed a spring migration of the mature females to the trunk and rough places on the main branches, where they deposit the egg masses for the succeeding generation. This led to the use of burlap bands on the trunks, applied not later than April 1, as an additional inducement for the insect to oviposit there. The trunks and lower main branches were subsequently sprayed with an effective insecticide (soap powder, 40 pounds; distillate crude, 28 per cent, 30 per cent Baume, 10 gallons; water to make 200 gallons) before the eggs hatched. In this way a 20-acre demonstration plat was cleaned up.

Citrus Canker

In a contribution from the bureau of plant industry, United States department of agriculture, results are given of an investigation to determine whether or not the citrus canker organism (*P. citri*) is capable of persisting in the soil to such an extent as to make the soil an important medium in holding over or disseminating the organism.

Tests on many types of soils showed a rapid decline of *P. citri* in all. This decline was retarded slightly by rendering the soil alkaline with lime water or by lowering its temperature, and more decidedly by withholding water or by previous sterilization with steam. Extremely long persistence in

small numbers was noted in soil held in air dry condition. *P. citri* was found to penetrate the soil to depths ordinarily cultivated, but the normal decline seemed to occur at such depth. In water the decline was more rapid than in soil, but previous sterilization of water had a decided effect in prolonging resistance. Certain bacteria commonly found in soils are said to have a marked deleterious effect on *P. citri* in artificial culture media, and the presence of such organisms in soil is believed to be concerned in producing a decline of *P. citri*. Young roots of grapefruit seedlings did not seem to be readily infected except through wounds.

From Schoolroom to Vineyard

By Ernest Brauntou

This is a story of Tokay grapes grown by an amateur, with a high degree of success, a success attainable by any person who will diligently apply a little thought and muscle to the task of starting a vineyard. E. H. Ride-nour, a school teacher of Stockton, secured ten acres of land near Lodi, San Joaquin County, 18 years ago, and having a little means secured cuttings of Tokay and a few other varieties, rode out the 14 miles from Stockton on Saturdays and holidays on a bicycle, planted the cuttings and attended to their needs with his own hands. They all grew.

The vines are planted ten by ten feet and have never been irrigated or fertilized yet the ten acres have grown to 33. In 1919 the crop was 600 crates of 28 pounds to the acre. This year the crop is slightly less than last year but on September 1 Mr. Ride-nour refused \$400 an acre for the crop on the vines, the purchaser to take all risks regarding weather, labor, car shortage, etc. (and the latter already exists.). This is the fourth year of light rain in that section, and during last rainy season but seven inches was precipitated, yet this vineyard is in fine condition. Tokays are picked when testing 17 per cent sugar, but while they now test from 17 to 21, no picking has been done for the grapes are very slow in coloring.

In this vineyard pruning is done just before the bleeding stage, if possible. If done earlier and hot winds come the stubs dry out too much. Some vines in this neighborhood are on their own roots, some on *Rupetris* St. George, some on *Lenoir*. The latter is favored for heavy soils. *Phylloxera* is not present and few pests hamper; occasionally leaf hoppers and a beetle that eats the leaves appear, but not in serious numbers. Dust appears the vineyardist's chief trouble, and along unimproved highways the loss is often quite serious on two or more rows next the road. To overcome contamination by dust in the vineyard described, straw is

scattered freely in all rows down which grapes are hauled. A new variety known as *Huniola* is being tried and gives much promise. It is midway in color between *Emperor* and *Tokay*, but skin is more tender than that of *Emperor*. It is a slightly smaller grape but a heavy bearer and has but one seed, sometimes none.

APRICOT DISEASE

That the disease known as bacterial gummosis, which has attacked the apricot in practically every important apricot growing district in the state, is most active in the late fall and winter months and that the grower should remove the infected bark with disinfected tools, treating the wound also with proper disinfectants, are the statements made by J. T. Barrett, professor of plant pathology, University of California. The disease is comparatively new to this state, having been first recognized in 1916. The first visible symptom is an exudation of gum, usually at or near diseased fruit spurs.

NEW CATALOGS

The plant catalog season is at hand and the first one to arrive is that of the Armstrong Nurseries, Ontario. It has nearly all its old features and many new ones. The one of most value to our readers is a section entitled: "Planting Instructions for Tropical and Sub-Tropical Trees." The most striking of the new illustrations are those of the *Haden* mango and the six citrus fruits they are budding on one tree for use in small gardens and also for the fun of watching so many varieties develop on one trunk, giving citrus fruits of some sort every month in the year. This catalog contains the fullest list of sub-tropicals of any yet issued in California.

A good septic tank should be water tight, prevent agitation of the contents by inflowing sewage, and include a sand filter bed or subsurface disposal system to accomplish the final work of purification.

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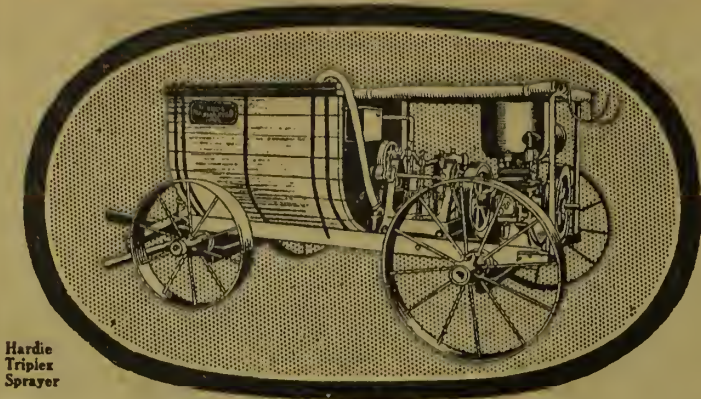
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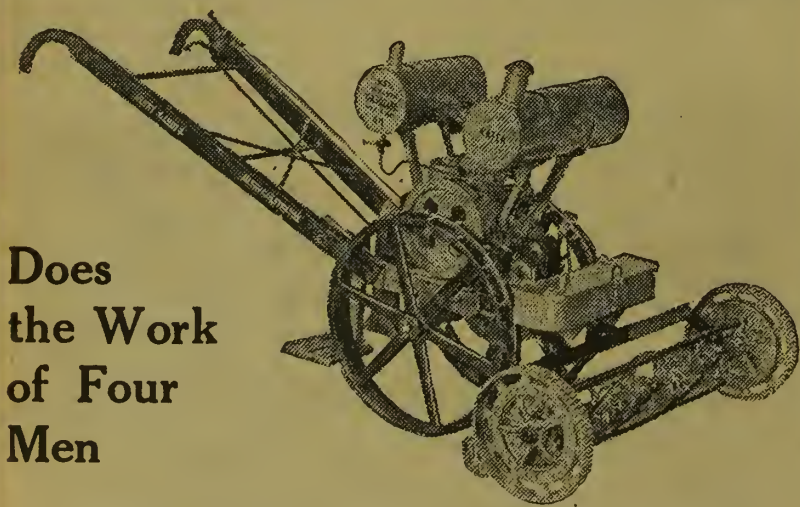
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Prof. Bioletti Prunes Grapes

By Ernest Braunton



IN KIRST Brothers ranch at the east end of the La Canada Valley, Professor F. T. Bioletti of the state agricultural college pruned five varieties of grapes in the presence of 100 or more interested observers and auditors who were keen to see and hear this famous specialist. For he "sheds" his coat and goes at the vines as though his life's work had been vineyard pruning. The first variety operated on was one of the less vigorous, known as

Mataro

"You can't put grapes on a vine by pruning. Only care will do that. But you may put grapes off by pruning. Conditions determine the crop. We prune to allow vines to produce what they will, shaping largely for convenience. First, get a clean, straight single stem, without wounds and resultant scars, so you may cultivate beneath the head and also see that no suckers grow from the trunk. Stems early allowed to sucker or sprout and afterward pruned clean will not produce vigorous vines, and scars will encourage entrance of insects and induce fungous growths. Stake all vines when young.

"Allow two to five arms to grow, according to variety and to properly distribute crop. Do not allow these arms to become too long or vine is weakened and arms may break or split off. The crop is partially dependent on number of fruit buds, but do not leave too many. Properly balance so as to get maximum crop and maximum quality. If vine made normal growth, leave as much wood as left the previous year; if growth is weakly leave less. The ideal is to have the head or crown vasiform, but occasionally it is advisable to leave a cane in the center." The next talking and pruning was bestowed upon an

Emperor

"This is one of the strongest and most vigorous growers and needs good heavy soil and plenty of water and should then bear eight or ten tons to the acre. This soil is too sandy for Emperors and I am not sure how I should prune. The variety will not thrive here even with good care. After more than a score of years of careful study and experiment I am not sure that fertilizing aids grapes, though much of it is done. Cultivate, irrigate, prune and care for grapes and the crop problem is solved. Stake Emperor high, one cane only (on all varieties), and leave four or five spurs, or longer growths than were left on the last variety, a weaker vine than this sort. Stake high, a four or five foot cane. This vine has two original stems (saws one off). One is as good as 14 for you can't get more spurs, and pruning is much complicated. Never prune any vine so long as green leaves remain or you are pruning away the food factory, therefore losing grapes and permanently weakening vine.

"The commonly accepted practice with Emperor is the vertical cordon and to leave two or three buds on every lateral, for it is of great vigor. But vertical cordons have disadvantages. The crop ripens at different heights at different times and in different shades of color. This variety must have an abundance of sunshine and so the vine will go as far from the root as it can. Finally, the head becomes high and strong and the lower canes dwindle and die. A later, and perhaps better method of training is a horizontal cordon, tied to a wire continuous one way throughout the vineyard, preferably north and south, using but one cane as in the vertical cordon. Paint wounds or cuts on trunk with asphalt and cover with soil, but we seldom paint wounds or stubs above, but if done use light colored material for the black asphalt induces sunburn.

Muscats

Prune to keep vine head high and clear above soil. Don't let frame spread too far or too horizontal. If it becomes so, leave for present year to get crop, but encourage new growth

from center and next year cut old arms away. I am leaving 50 per cent more wood than was left last year for this vine is a strong one. These prunings are too long jointed for good cuttings which, if short jointed, need be but 12 to 15 inches long. Roots which come out not more than 12 inches below surface are best on all vines. If they appear at this depth and others appear on joints above, cut upper ones off and shorten those below. In very light soils cuttings may be long or roots will dry out; if too long in heavy soils lower ends will rot. Cut lower end of cutting close to joint, but don't cut "ring" away. Do not leave stubs below, to rot away, for borers enter only through dead wood and from this go into live wood. One-fourth inch of pith below is ample but leave an inch above joint at top end. In planting leave one bud above and one at top of soil. If anything happens to one, the other may live. Make cuttings now or later and need not plant until March.

Cornichon

"This is called half-long pruning. Leave long spurs (four buds) for crop and short spurs for next year's bearing canes, for old ones should be cut away. On weaker canes leave shorter spurs, of two buds. You will note these vines do not like strong winds, as nearly all growth is on one side. Always leave long spurs on Cornichon and as in other varieties, cut away canes below or those drooping, but do not leave old wood too long. Too many 'water sprouts' suggest you have not left wood enough. Leave all water sprouts above or from top of crown, but none below. Muscats are of the weaker varieties.

Tokay

"The Tokay is a medium strong variety, yet not so strong as Emperor. Pruning depends on vigor of vine. Leave spurs of three or four buds. In Imperial Valley we prune a year old vine as you do a two year vine here or a three year old in the more northerly counties. All vineyards should be staked; you cannot get good vines without it. Cut top of young vine close down to a joint and tie just below this joint to the stake, just as hard as it can be tied. This upper joint will not grow, but it prevents wind blowing vine out of string. Ties below should be very loose, so you can run your finger through the loop."

A score of boys from the seventh and eighth grades in elementary agriculture were present from the Los Angeles schools, with three supervisors, and Professor Bioletti complimented some of the boys on the very intelligent questions they asked him.

CALIFORNIA MANGOS

Every tropic and sub-tropic land has striven to grow the mango, considered by many the world's finest fruit. It is yet to be demonstrated if California can produce mangos of good com-



The Haden Mango

A hardy variety now being tested in California. One-third natural size.

cial value. Several seedlings have fruited well in favored spots, but none of real merit. Nearly all have been too full of fiber or have had a strong disagreeable flavor. The best the writer has eaten were excellent as to taste but the seeds were so large that there was little flesh.

At Delhi, India, about 1330 a Turkoman poet wrote in praise of the mango, stating it was the world's finest fruit, and it is evident that it had been so esteemed for centuries. An Indian emperor who reigned in the sixteenth century planted an orchard of 100,000 mango trees and 300 years later English horticultural explorers found some of these trees still in good condition and yielding well. Many later writers referred to the mango as the finest of tropical fruits.

SULPHUR

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards six times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand and Fleur de Soufre, packed in double sacks, are the fluffiest

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Tree cuts or wounds, if left exposed, are very likely to become infected. Prevent infection by prompt application of PABCO PRUNING PASTE. Ask your dealer. Manufactured by the Paraffine Companies, Inc., San Francisco, California.—Adv.

Of late years special efforts have been made by the United States government to find varieties of merit suited to the warmer parts of this country, for they are common in all parts of tropical America. In Florida their range is necessarily too far south for production of really good fruits and varieties are needed that will flourish in the citrus belts of that state and California. With that end in view the bureau of plant industry introduced the Mulgoba, which has now been displaced by the hardier Haden. None of either are yet fruiting but it is expected that edible fruits of Haden will soon be available from vigorous young trees now growing in warm spots. It may seem strange to Californians that this king of fruits belongs to the same family as the poison sumac (poison oak) and the so-called pepper tree. But the excellent pistachio nut is equally closely related.

—E. B.

CONTROLLING APHIS

The U. S. department of agriculture is giving particular attention to that universal pest, the aphid. It has issued "Control of Aphids Injurious to Orchard Fruits," written by Quaintance and Baker. It is Bulletin 1128 and may be obtained free by writing Division of Publications, Washington, D. C.

Aphids are small, delicate, winged or wingless insects which feed upon plant juices, draining them from the foliage, fruit, twigs, or roots, through a beak pushed into the plant tissues.

Many kinds injure orchard fruits, currant, gooseberry and grape. The most important are discussed in this bulletin.

Contact sprays, such as kerosene emulsion, soap washes, nicotine solutions, etc., must be used to kill aphids. Directions for preparing and applying them will be found in the bulletin.

Stomach poisons, such as arsenate of lead, Paris green, and other arsenicals, are of no use against aphids.

Species which winter in the egg stage on the plants to be protected may be sprayed early in the spring as the buds are expanding, to kill the first brood and insure against injury later in the season.

Leaf curling species, especially, should be treated with this bud spray in years when they are expected to be abundant. They cannot be reached satisfactorily after the leaves have unfolded and the aphids have begun to be troublesome.

Those species which do not curl the leaves may be controlled readily by sprays when they are noted as becoming numerous.

Annual bud spraying in the case of the apple appears to be good orchard practice and, continued for a series of years, doubtless would prove profitable.

SPREADING AVOCADO INFORMATION

William A. Spinks, the avocado enthusiast of the foothills above Monrovia, was recently in New York. The Waldorf Hotel people deemed it an important occasion in that Mr. Spinks gave those who cater to discriminating people some information regarding California grown avocados. They made rather an interesting story of the "avocado pear," which they say "should be called ahuate." * * * "The fruit matures constantly during the spring and summer months." We think, however, if the Waldorf-Astoria people will visit California or give us definite order for fruit to be delivered any month in the year we can soon fill the order.

GROWERS ORGANIZING

Secretary Bigelow of the state market commission announces formation of the Imperial Valley Vegetable and Melon Growers Association, the Coachella Valley Onion Growers Association, the Lakeside Fruit and Vegetable Association, in San Diego County; the Carlsbad Vegetable Growers Association, in the same county; the Merced Vegetable Growers Association, the Fruit Growers Association of Riverside County, the Cherry Growers of California and the Poultry Producers of Imperial Valley.

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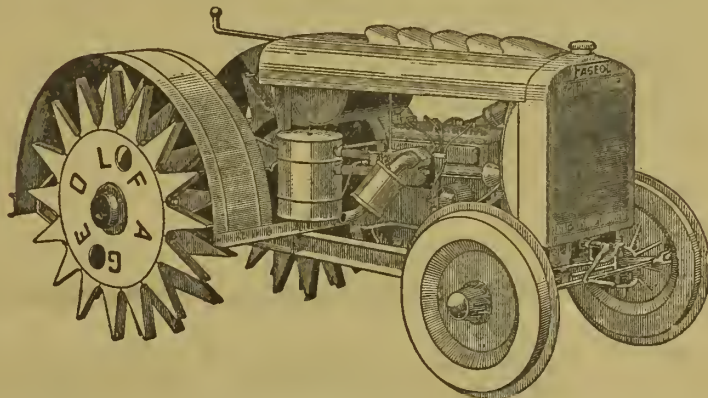
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When Writing Advertisers Mention California Cultivator

Varying Orchard Culture

About the middle of August a representative of the Cultivator spent some time in the orchard of E. A. Marshall at Porterville, Tulare County, for Mr. Marshall seemed much puzzled over the unsatisfactory condition of much of his orchard. The soil is very heavy and had not been plowed for several years. It evidently needed plowing very deeply, subsoiling, in fact, and organic matter introduced to prevent it again becoming impervious to air and water. A portion lately plowed deeply and heavily irrigated was the only part making new growth. H. L. Morrison, secretary of the Porterville chamber of commerce, was present, and we have just received from him some data on this and other local orange orchards.

"Six years ago Mr. Marshall purchased this orchard and at that time the trees were in fairly good condition.

He forgot about the plow, using the disk only until his trees 'went back.' This summer, in July, Mr. Marshall in one portion of his grove began plowing deeply and irrigating every 15 days lightly. In one month's time he had a wonderful new growth on his trees. At the present time he is following the old idea in the remainder of his grove, but when I asked him regarding splits he readily admitted injury and said: 'There are not so many splits on the trees where I am irrigating every 15 days as there are in the remainder of the grove where I irrigate only every 30 days.' This same answer I am getting from a number of other growers. The trees at the present time are 14 to 18 years old and the particular portion that we traveled over when you were here has a very heavy crop of fine fruit, which we believe is produced by plowing deeply enough to cut through the plowsole. He has

sprayed twice during the season for red spider, has irrigated every 15 days, and has stopped all pruning.

"In going from one grove to the other in this section, we find four things that are being done by the suc-

cessful growers: first, they have stopped pruning; second, they practice deep plowing; third, they irrigate every 15 days, or often enough to keep the soil in moist condition; and fourth, spray. The spraying can be carried



A Tulare County Orange Tree
In the orange orchard of E. A. Marshall, Porterville.

on to such an extent that it is dangerous to the life of the trees. The average grower pays so much per tank to the men who are putting the spray on. We find a number of men who, knowingly or unknowingly, are causing a decided loss to the growers. Instead of using the spray nozzle as it is originally built, they bore a larger hole in the center of the nozzle, throwing a stream instead of the spray required. We also find that you can use the same spray on two groves, on one without any harmful effect and in the other the trees will be burned. This we believe is caused by the condition of the trees or, in other words, if the trees are in a healthy condition the spray can be applied without danger. If the soil is allowed to dry the trees have not the natural resistance, and when the spray is applied the foliage is injured, while trees in good condition are not."

NURSERYMEN'S BUD SELECTION

(Continued from Page 789.)

records; so that for next summer's cutting we will have access to more than 20,000 trees on which we have a production record of at least one year.

Some will say that one year's production is not sufficient to establish a record. That is fully granted. The association has no intention of claiming anything not actually borne out by facts. We realize that before we can give our customers a tree truly pedigreed, records covering anywhere from five or ten to 12 years must be secured. On the other hand, I do not think there is a practical orchardist in the state today who will not say that just one year's record is of some value. I think all will admit that propagation from a healthy, vigorous tree, typical of a given variety, which tree has a record for even one crop of large fruit and lots of it, will produce nursery stock which has a far better chance of being profitable in the orchard than a nursery tree grown by the hit and miss methods of the past; and as time goes on we will be able to secure additional production records, to get subsequent notes on variations and desired characteristics, and each year the nurserymen members of the bud association will be advancing a step, giving their customers a little better stock than the year before and gradually working toward the time when we can send out nursery stock with as valid and genuine a pedigree as any Holstein or Jersey in the country. So please do not think that the Nurserymen's Bud Selection Association is promising the planter more than can be given him. All we claim for the present is to furnish a tree a degree better than the one it was possible to produce the year before.

During the summer of 1921 it is our aim to have enough competent men in the field to furnish practically every bud used by our membership; all these buds to be taken from the very best trees as shown by the records secured during the summer of 1920. On many of the parent trees we will be able to have a two years record as a number of fruits such as apricots, cherries and other early sorts will have borne another crop before bud cutting time is on.

Our membership must agree to in-

Over Another Threshold

SOON you will put the calendars of a new year up on your walls. You have weathered the labors of the past four seasons—with what benefits and damages you recall full well. Now the cycle of a new year looms ahead, and we must prepare to gather the fruits of 1921.

It is a time when conservative manufacturing enterprises and business houses are reviewing the past, taking stock of resources, and building future campaigns. Leaks are stopped, needs are reckoned with, and plans are made with extreme care.

Winter is the best time in most sections for complete farm inventory, for overhauling machines and making repairs, for accurate reckoning of profit and loss, for planning crop changes, for discarding old habits and considering new methods.

Every farmer knows this. It is good to see that there is more and more definite planning of full year's work at the close of every December, on the farms of America. It is so easy a matter to slide through the comparative resting period of Winter, and then Spring with its hundred duties bursts forth and finds many important matters and details unattended to.

We are glad to note this trend toward business-farming because we hope to be allied with Agriculture many more years and because our interests are so closely mingled with the interests of the farming world. So then, while we are setting our own house in order for 1921, we pause to publish the hope that you, the reader, may set forth into a new year of farming enterprise with all plans laid for a most profitable twelve-month.

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sert no buds in their nurseries other than those furnished by the association, so far as the association is able to supply them. Members must agree to keep trees produced from buds furnished by the association entirely distinct and separate from any trees that may be, for any reason, grown from buds cut by themselves or other parties. Our members must permit the officials of the association to have access at all times to their records and nurseries and these officials shall be justified in adopting any necessary means to see that no tree is sent out as a selected tree unless the bud was furnished by the association. In other words, the association officials will see to it that only trees grown from buds furnished by them are sent out as

selected stock. Our membership has been unanimous in its determination to safeguard the integrity of our work and I feel perfectly safe in promising that any nurseryman attempting to send out stock grown from buds not furnished by the association, but claiming such trees to be selected stock, will be promptly dropped from membership and denied all privileges.

The question has been asked, why should an association be formed for this work; why should not the nurserymen do this selecting individually? If at all familiar with the nursery game a few moments thought will convince anyone that it is utterly impossible for any one nurseryman to handle the matter of bud selection in a thorough and practical manner. The state is too big, the number of varieties too great, to permit any one man to get really practical results. Furthermore, the expense would be too great to be borne by any one nursery; and, again, what nurseryman can sidetrack all of his other affairs and put in a whole summer selecting trees from which to cut his buds? He might do it for one summer, but could he do it year after year as will be necessary to get best results? The obvious answer is no to all of these questions. The only possible way that the work can be done properly is by an association having competent men who devote their entire time season after season in observing, securing records and cutting the buds of the very best types obtainable, for the association members.

As to the value of bud selection little need be said. It is not a new theory advocated by a few extremists. On the contrary, it has been practiced to a certain extent for more than 60 years right in these United States. E. P. Powell of New York, T. T. Lyon of Michigan, H. E. Van Deman, one of our former secretaries of agriculture, and numberless others of our leading horticulturists were and are strong advocates of bud selection; and you are all familiar with the astonishing results attained with citrus fruits during recent years. It is a universally accepted fact that livestock can be greatly improved by proper breeding. What is proper breeding? It is simply the selection of a certain type or certain types and the development of the desirable characteristics. It is known to work perfectly with livestock and in horticulture experiments have shown conclusively that a great deal can be accomplished not only in the fixing of certain desirable characteristics, but that production can be wonderfully increased simply by propagation from desirable parentage. The best horticulturists of the United States are unanimous on this point and right here in California our leading orchardists are demanding of the nurseryman that they furnish trees grown from buds selected with greater care than has been possible in the past.

I have endeavored to tell you what we have been doing in the way of bud selection this past summer and I hope I have made it plain as to our intentions in the future. The degree of success we will attain depends entirely on the support accorded by the nurserymen and by the orchardists. We want your support and cooperation. Since the formation of our association the 17 nurseries now members have contributed in hard cash more than \$16,000 and will have to dig down for about \$3,500 more to cover the expenses of the first year's operation. Now whether we get new members or not this work is going through. The present membership has traveled some rocky roads, but as we have our office and field equipment and a working organization the worst is over. If the other nurserymen of the state and the orchardists who will reap 95 per cent of the benefit should decline or neglect to come in with us we shall go right ahead and put the job over; but, personally, I feel that we have a right to expect the influence and financial assistance of the big horticultural interests of the state as well as of the small nurseryman who has the good of his business at heart. I am so firmly convinced of the benefit to be derived from the work we are doing that I have no hesitancy in predicting that ten years from now it will be practically impossible to sell a fruit tree unless it bears the O. K. of the Nurserymen's Bud Selection Association of California.

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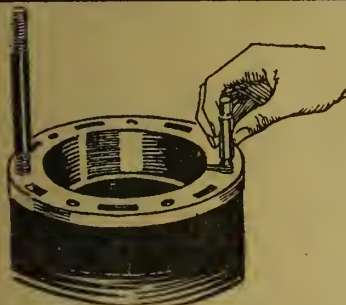
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GHIRARDELLI'S

Ground Chocolate

THE CHRISTMAS TREE

It blooms one day in all the year,
Not when the roses blow,
But when the fields are brown and sere
Or robed in gleaming snow.

Upon its branches bending low,
All beautiful to see,
Both flower and fruit together grow,
Oh, wondrous Christmas tree!

And children dance in merry glee
And lovers whisper vows;
And trembling age draws near to see
And rest beneath its boughs.

And up above, in starlit space,
Beyond the gates of gold,
Perchance through all the heavenly place
Rolls round the song of old.

"Peace on earth—to men good will,"
That sweet and glad refrain—
Should not the angels sing it still
When Christmas comes again?

Green be thy branches, Christmas tree,
Thou plant of heavenly birth,
Thou hast the Summer's heart in thee
Though Winter rules the earth.

GETTING MOTHER'S CHRISTMAS PRESENT

MR. BENGE finished the chores, shut up the barns, and went into the house. From the table where she sat writing to her daughter, who was attending college, Mrs. Bengé could see the bobbing lantern coming towards the house. When her husband

says, Rose."

Mrs. Bengé quoted from "Life":

"Her sheets were down to a thread—bare three,
And her tablecloths were a sight to see.

She wanted scarfs and a towel rack,
And a good, plain, useful dressing sacque;
Some kitchen spoons, and a box for bread,

A pair of scissors and sewing thread.
She hoped some practical friend would stop,

And figure out that she needed a mop,
Or a bathroom rug, or a lacquered tray,

Or a few plain plates for every day."

"Tell your mistress to be serious, Jock, and say what she wants Santa Claus to bring her. The Santa Claus that comes to this house has to be told what to bring."

"No, he doesn't, Mrs. Bengé spoke quickly. "A man that can choose the lovely cups and saucers you gave me last Christmas doesn't need any help. I've often wished I had two dozen instead of one; and plates to match would have made our table perfect for our dinner party last week."

"Cups and saucers, and plates to match," Mr. Bengé chuckled to him-

THE CHRISTMAS SPIRIT

Over the world, with outspread wings,
The Spirit of Christmas broods and sings;
Of happy, hopeful, helpful things
All for you and me:

Charity, wide and deep and high,
Love, that reaches from earth to sky,
Peace, that close to heart doth lie—
All these gifts are free.

came in, a few seconds later, she called to him:

"This is December 1st. Sallie will be home three weeks from Tuesday—Christmas eve."

"Christmas eve? I thought she came the week before Christmas!"

"Well, she doesn't. But she has three weeks of vacation just the same, so it doesn't matter."

Unfortunately, it did matter to Mr. Bengé. Did not Sallie always tell him what to get for her mother's Christmas present? The fact that she managed so artfully that he always appeared to make his own choice did not change the matter. He knew and she knew that he counted on her help. What in the world could he get for his wife without Sallie's advice? He'd just write her to let him know at once what to do.

When Mrs. Bengé's letter went out next morning, Mr. Bengé supposed it carried a letter from him which read: "Dear Sallie: What in the world am I to get your mother for Christmas? Please write me at once. This leaves us both well. From your affectionate father." Not until the note slipped out from between the pages of his check book did he recall that he had failed to slip it in his wife's letter at the last minute as he had planned.

It was then the middle of the month. "Doesn't that beat all!" he exclaimed. "Now I can't possibly hear from Sallie—I must choose mother's present myself."

Outside the December wind howled fiercely. Mr. Bengé sat in the warm kitchen playing with the dog. "It's almost Christmas," he said. "Ask your mistress what she wants for a present, Jock," putting his hat on the animal's head as he spoke.

Jock gave a series of short, sharp barks.

"You'll have to interpret what he

self. Mother had given him a hint without meaning it. Those dishes were pretty; Sallie had good taste.

When he went to town next day, Mr. Bengé carried a saucer. The sooner he had his Christmas present for mother bought, the better. From store to store he went; the pattern was out of stock. The merchants were not even sure they could match it on order. He went home disappointed and cross. Confound it all! why didn't Sallie write him anyway?

He was still disgruntled when he sat down to read his papers. From one dropped a slip which read, "Your subscription has expired." Rose had often wished she took some of the popular women's magazines. Why not subscribe to some for her Christmas present when he renewed his subscription? He turned the pages for the clubbing list, marked the ones he would order, and leaned back at peace with the world. But his satisfaction over the solution of the Christmas gift problem was short lived. At the supper table Mrs. Bengé said:

"Elder Owens called today. He was taking subscriptions and renewals for all the leading periodicals. It seems that one of our church members turns in the subscription commissions to the mission fund, so of course I subscribed with him. I paid for them with my state fair premium money."

"Did you get the women's magazines you've been wanting?"

"Yes, three of them; but I wasn't really extravagant; the rates were low."

The days slipped by. Christmas was but a few days off, and Mr. Bengé was nearer a choice of a Christmas present—until a card dropped from Joe Brown's pocket when he took out his check book to pay for a load of corn, and Joe's explanation of the card gave Mr. Bengé a brilliant idea.

"I couldn't afford to lose that," Joe had said as he reached for the card, and opened the folder to display a holly bordered Christmas greeting, and ten fresh one dollar bills enclosed in an envelope, with the inscription, "Fresh from the mint, to do your bidding."

(Continued next week.)

CHRISTMAS CANDIES

Chocolate for Dipping Candies

Here is a hint worth remembering when you dip chocolates for Christmas candy: Either the plain or the sweet chocolate may be used. To prevent streaking or turning gray the chocolate must be melted at a low temperature, so fill the lower part of the double boiler with boiling water. Place top compartment in position, then put in the chocolate which has been cut fine. Add one tablespoon salad oil to each half pound. Stir frequently till chocolate melts, then dip in fondant centers, nuts or pieces of candied fruit. Place to dry on board which has been covered with oil cloth.

Fruit Candy

Put through food chopper $\frac{1}{4}$ pound coconut, $\frac{1}{2}$ pound seedless raisins, $\frac{1}{2}$ pound dates or figs, 1 pound shelled nuts. Add 2 tablespoons syrup, form in balls and oblongs.

Fondant

Boil without stirring 5 cups sugar, $2\frac{1}{2}$ cups water and $\frac{1}{2}$ teaspoon cream of tartar to soft ball stage (till it forms soft ball when dropped in cold water) or to 238 degrees Fahrenheit or 240 degrees on damp day or if to be used at once. It is of course much more satisfactory to test heat accurately with candy thermometer. Make swab by wrapping fork in piece of linen, dip in hot water and wipe crystals from sides of pan as soon as they form. This will prevent crystallization. Covering the pan the first ten minutes of cooking also tends to prevent formation of crystals. Remove from fire, let stand till cool, then beat till creamy. Turn out on large platter and knead till free from lumps and soft and velvety in texture. It is better after standing 24 hours in covered jar.

Chocolate Fondant

Add 3 ounces grated chocolate to above recipe.

Coffee Fondant

Make $1\frac{1}{2}$ cups strong coffee, strain and add 5 cups sugar and $\frac{1}{2}$ teaspoon cream of tartar and proceed as for plain fondant given above.

Cream Mints

Melt 1 pound fondant over hot water. Flavor with drops of either oil of peppermint, wintergreen, clove, cinnamon or orange. Color if desired. Drop from tip of teaspoon on oiled paper.

Chocolate Creams

Mould plain fondant in any shape desired. Let stand in cool place till firm. Lay each cream on fork, dip into chocolate made as directed in first paragraph.

Chocolate Circles

One-half cup walnut meats, $\frac{1}{2}$ cup figs, $\frac{1}{2}$ cup almond paste, grated rind one orange, $\frac{1}{4}$ teaspoon salt, 2 squares unsweetened chocolate, orange juice, sugar.

Put walnuts, figs and almond paste through food chopper, add orange rind, salt and enough orange juice to make mixture of consistency to handle. Knead on a board or marble slab. Sprinkle with sugar, cut in circles, brush with chocolate melted over hot water and decorate with walnut meats broken in quarters. Serves 36.

Glaze Walnuts

Two cups sugar, 1 cup boiling water, $\frac{1}{3}$ teaspoon cream of tartar, 3 cups whole Diamond walnut meats.

Put sugar, water and cream of tartar in a smooth saucepan; stir, place on range, and heat to boiling point. Wash off sugar which adheres to sides of saucepan with a butter brush dipped in cold water, and boil without stirring to 310 degrees Fahrenheit, or until syrup begins to discolor. Remove saucepan at once from fire and place in a larger pan of cold water to instantly stop boiling. Remove from

cold water and place in a saucepan of hot water. Take whole walnut meats separately on long pins or steel skewers, or with a small pair of tweezers, dip in syrup to cover, remove from syrup and place on a tin sheet. Makes $1\frac{1}{2}$ pounds.

Chocolate Walnut Caramels

One cup sugar, $\frac{1}{2}$ cup white corn syrup, $1\frac{1}{2}$ cups boiling water, 1 teaspoon vanilla, $\frac{1}{3}$ cup powdered whole milk, 3 squares chocolate, 1 cup walnut meats.

Put sugar, corn syrup and water in saucepan, stir until sugar is dissolved, bring to boiling point and boil until mixture will form a very firm ball when tried in cold water. The caramels when cold will be of the same consistency as this firm ball. Do not beat, as beating may cause the candy to become granular. Add vanilla, powdered milk sifted, chocolate grated and walnut meats cut in large pieces. Pour caramel into a buttered pan seven inches square. When cool cut in squares and if desired wrap in wax paper.

One and one-half cups cream may be used instead of boiling water and powdered milk. Makes 1 pound 3 ounces.

MINCE PIE

Mince Meat. 2 pounds chopped meat, 1 pound suet, 3 pounds raisins, 3 pounds currants, $2\frac{1}{2}$ pounds brown sugar, $1\frac{1}{3}$ cups molasses, 3 quarts chopped apples, 1 quart meat liquor, 2 tablespoons salt, 3 tablespoons cinnamon, 2 teaspoons mace, 2 teaspoons powdered cloves, 4 lemons (grated rind and juice), 1 quarter citron shredded fine.

Cook about $2\frac{1}{2}$ pounds round, flank or shoulder beef in $1\frac{1}{2}$ quarts water till tender, saving liquor. Chop or grind meat fine, being careful to remove all gristle. If meat is very fat use less suet. Mix ingredients in order given and cook slowly until fruit is tender. When done add 1 quart sweet cider. Store in stone jars in cool place. Add more cider when using if it is not sufficiently moist. Half glasses of jelly, syrup from pickled peaches, bits of preserves, etc., may be added.

CANDY BAGS

When making candy bags for Christmas trees line each one with paraffine paper. The lining will stitch on the sewing machine with the net, and the candy will be much more palatable for the extra care taken.

HOUSEHOLD QUERIES

Baked Oranges—Sweet Potato Pie

I have a friend visiting me from the East who says she was told by other visitors to California that the baked oranges they got out here were delicious. I never heard of them. Could you tell me about how they are fixed? Also, she spoke of the sweet potato pie that an old darkey cook used to make. Could any of the Cultivator readers give me that recipe?—Subscriber, Pomona.

Baked Oranges. Baked oranges surely are delicious, especially as an accompaniment to hot roasts. Perhaps it is because they seem so perfect just from the tree that we seldom think of cooking them. Cut off tops of as many oranges as you wish to prepare. Loosen flesh from rind by running grapefruit knife around. Place in baking pan and pour in water to come half way up the oranges. Boil until skins can be pierced with fork, then place a teaspoon or tablespoon of sugar in each according to sweetness of fruit, and a bit of butter. Bake till slightly browned. Serve hot or cold. Pour over a sauce made by boiling down liquid in pan, thickened slightly, if preferred, with corn starch.

Sweet Potato Pie. Boil or steam sweet potatoes till done. Line deep pie pan with paste and bake, but do not brown. Skin sweet potatoes and slice thin. Make syrup of two tablespoons butter, one cup brown sugar, one-fourth cup water and one teaspoon ground allspice. Put layer of sliced sweet potatoes on cooked crust, pour some of the syrup over, add another layer of sliced sweet potato and the

rest of the syrup. If your conscience will allow, dot bits of butter over top. Put on top crust and bake.

We have also tasted a most delicious sweet potato pie in which the sweet potato was forced through sieve or

mashed and made into custard. Can any of our readers tell us how?

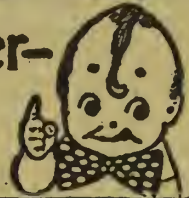
Curing Olives in Salt

I understand that the Greeks in this country cure olives just in salt,

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Calumet Columbia Muffin

Recipe

—4 cups sifted flour, 4 level teaspoons Calumet Baking Powder, 1 tablespoon sugar, 1 teaspoon salt, 2 eggs, 2 cups of sweet milk. Then mix in the regular way.



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leaving them dry. Can you tell me
how it is done?—Subscriber.

Here is the method given to the
Cultivator by George C. Roeding: Bore
a hole about one inch in diameter near
bottom of barrel, place couple of
inches of salt over bottom of barrel,
then a layer of three inches of olives,
alternating layers of salt and olives
until barrel is about three-fourths full.
Every two or three days pour from
two to three gallons of water over
olives, letting it run out through the
hole slowly. Within a month the
olives will begin to shrivel. Remove
from barrel and place olives that were
on top at bottom of barrel, redis-
tributing the salt evenly through the
barrel and continue pouring water
through them about every five days.
After bitterness is practically all out
of the olives their flavor may be very
materially improved by pouring a little
olive oil over them in a shallow vessel,
rolling gently about until each fruit
is covered with a thin film of oil. If
it is desired to keep the olives for a
year or more a small sprinkling of salt
on them is all that is necessary. Fully
ripe olives should be used.

Green Tomato Pickle

I have a lot of small green tomatoes
left on my vines, which seem not to
ripen up. Would these be good for
what is called green tomato pickle?
If so, can you tell me how to make it?
—Subscriber, Tropic.

One gallon green tomatoes, 6 large
onions, 3 cups brown sugar, ½ lemon,
3 red peppers, 3 cups vinegar, 1 table-
spoon each whole black pepper, whole
cloves, whole allspice, crushed celery
seed, mustard seed, ground mustard.
Slice tomatoes thinly, sprinkle with
half cup salt and let stand over night
in earthen or enameled vessel. In
morning drain well. Tie pepper,
cloves, allspice and celery seed in
cheesecloth bag. Slice onions and
lemons thinly and chop pepper pods
very fine. Put vinegar, sugar, spices
in large kettle, add sliced onions,
lemon and drained tomato. Cook half
hour, stirring gently to prevent burn-
ing. Remove bag of spices. Pack hot
in jars, place covers and rubbers on
jars loosely, boil 15 minutes and seal.

Potassium Permanganate for Poison Oak

In your issue of November 27 under
Household Department you give a
treatment for poison oak. There is a
specific for poison oak which, although
not generally known as such, is as
sure in its results as other recognized
specifics for other diseases. A solu-
tion (about 3 per cent) of perman-
ganate of potash rubbed on the affect-
ed part will instantly remove all itch-
ing and inflammation and will speed-
ily effect a cure. It should be reap-
plied as soon as the itching returns.
The stain caused by this chemical
wears off reasonably soon, and if it
is desired to remove it immediately
this may be done by the application of
another chemical of which I have for-
gotten the name but which any drug-
gist can supply. I put this solution
on my face without hesitation, pre-
ferring the temporary complexion of
an Indian to the suffering which poison
oak causes.—R. W. Bates, Carpinteria.

Fruit Cake

You published a number of fruit
cake recipes a few years ago, I think
it was in 1916. I lost my paper while
we were repairing the house. Could
you reprint them or send them with
the patterns if you have them? The
one by Mrs. John Bennefield was es-
pecially good.—Subscriber, Lemoore.

We are sending to our subscriber
copy of the Cultivator of November
18, 1916, which has 29 recipes for
Christmas cakes and puddings, con-
tributed by Cultivator cooks. We wish
we might have space to reprint them
all, but since that is impossible we
will give the one which she speaks
of as liking particularly well.

This is excellent if properly made
and baked. I have used it for years
and many of my friends and neighbors
have adopted the recipe: Two pounds
raisins, ¼ pound citron, 1 pint brown
sugar, 1 pound figs, 1 pound dates, 1
bowl chopped walnuts, 1 nutmeg, 1
tablespoon cinnamon, ¼ tablespoon
cloves, 4 eggs, 1 cup butter, 4 cups
flour and 1½ teaspoons soda sifted
three or four times, 1 cup sour milk.

Mix fruit, spices, nuts and flour thor-
oughly together. Rub butter and su-
gar to a cream. Add the eggs well
beaten and the sour milk, then add
the dry ingredients previously well
mixed to the butter, sugar, milk and
eggs. Have pan previously prepared
as follows: Fit three papers carefull-
ly, grease thoroughly, make a paste
of equal parts graham and fine flour,
wet with water just stiff enough to
spread easily with a spoon. Place the
first paper in the pan with the greased
side down and spread the paste evenly
over the paper, both bottom and sides,
press the second paper carefully into
its place with the greased side up and
next put in the third paper as you
would into any baking pan, and put
in the cake. Bake in round tube pan
all in one cake. Bake about three
hours in very moderate oven, placing
paper over top to prevent browning
until cake is nearly done.—Mrs. J. C.
Bennefield, Santa Paula.

Keeping Poinsettias

How can I keep poinsettias after
they are cut from the plant? As soon
as I bring them in they wilt.—Sub-
scriber, Padelford.

Pick the poinsettias in the early
morning while they are full of sap,
place stems immediately in vessel con-
taining four or five inches of boiling
hot water. Let stand until water
cools. They will then keep for sev-
eral days. Dahlias or even heliotrope
may be kept for a long time if treated
in this way. It will also be found
well to give roses and violets and
other better keeping flowers this same
treatment if they are to be carried
out of water for some time. Perhaps
it is not universally known that vio-
lets that have been worn and wilted
to rags may be renewed by clipping
stems and putting in boiling water,
leaving till it is cool.

Soft Soap Making

Perusing the fourth edition of
"Farm Questions Answered," on Page
149, subject "Soft Soap," I find the
recipe not so clear as my experience
was when a boy back in New York
state making ash packs in barrels for
obtaining lye. A standard salt barrel
of 280 pounds was considered about
an ideal leaching tank. Holes were
made with an inch auger in the bot-
tom in sufficient number to allow a
free flow of the lye; when the barrel
was positioned sticks of wood about
three-quarters of an inch square, and
long enough to reach across the barrel
head, were placed in the barrel first.
Two layers of sticks were used, the
second layer crossing the first, then
enough straw placed on top of the
sticks to keep the ashes from running
through with the lye, well kept dry
ashes, not necessarily new, but hard
wood ashes, beach, birch or maple,
were tamped in the barrel until full,
leaving only room enough on top to
hold not more than six quarts of
water. Water should be kept con-
stantly on the leach to insure a steady
flow of lye. Enough lye should be
added to the lard, grease, scraps of
fat meat and such like waste to eat
or disintegrate the fatty material,
which it will do if strong enough. The
material in the coudron is stirred at
least once per day after enough lye
has been added to allow it. When
the fat is nearly eaten up a light fire
is applied to bring the mess to a boil-
ing heat. Stir it well and allow it to
cool off. By inspection when cooled
you can determine whether the grease
and scrap are well disintegrated and
mixed; also whether the soap is too
thick or too thin. If thin, heat it up
again to evaporate sufficient water re-
maining to make it the proper stiff-
ness. If too thick, add more water
or weak lye and reheat. If scrap is
not quite all disintegrated add a little
more lye and reheat. One must be
careful not to get too much strong
lye. In this case, to remedy, more
fatty matter must be added. If this is
not done the soap will eat the user's
hands. Any change must be followed
by a reheating and good stirring. The
desired thickness depends upon the
choice of persons. Too thick soap
wastes in the use of it. Too thin soap
is less effective. My mother thoroughly
understood the art of soft soap
making. As she had no girls and I was
the youngest boy I was forced to learn
these two arts to perfection.—E. M. Knollin, Hayward.

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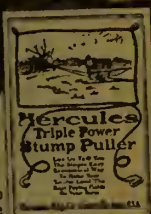
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Sulphur as a Fertilizer

INFORMATION concerning the relation of sulphur to plant nutrition and growth has been accumulating during the last decade, and the mass of data has now become so important that it demands recognition of all investigators of nutritional problems. Indeed, it seems to me that much of our past experimental field work dealing with the influence of fertilizer elements upon plants has been so loosely done that we are under the necessity of reexamining the whole matter, says a writer in Science.

Although the value of sulphur, particularly in the form of gypsum, was recognized at an early period in our national history, the lack of uniform success with it soon led to its neglect as an important fertilizer. And after the invention of acid phosphate about the middle of the last century, the development was almost wholly toward soluble fertilizers containing nitrogen, phosphorus and potassium. Sulphur was not included as a part of a complete fertilizer, although it was recognized as necessary to plant growth. The soil was thought to contain enough sulphur, and plants to need so little of it that it was added to the soil only incidentally, as in acid phosphate, potassium sulphate or ammonium sulphate, along with the three elements forming the so-called "complete" fertilizer.

Experiment station workers and other students of mineral nutrition of plants fell into loose ways of working with fertilizer salts. They have not hesitated to use sulphur-containing nitrogenous compounds when testing the influence of increased nitrogen on plant growth. Similarly, the acid phosphate has been used in testing the effects of phosphorus, and potassium sulphate has been used when potassium was under observation. In comparing various forms of fertilizer elements we find the superphosphate, for instance, pitted against bone meal, or potassium sulphate against potassium chloride, or ammonium sulphate against sodium nitrate as a source of nitrogen. It is evident that such tests as these are all invalid if sulphur itself is shown to be an important fertilizer element. For the experiments have at least two variables, and it would be impossible to ascribe differences in growth to one element with any certainty that the other element was not partly responsible for the result. The recent facts brought out in regard to sulphur should lead at once to a widespread reexamination of these problems, with more rigidly designed and controlled experimentation.

The basic facts brought out are briefly summarized here. In the first place, soil studies have shown that sulphur is one of the rare necessary elements. Soils are generally no richer in sulphur than in the fertilizer elements, nitrogen, phosphorus and potassium. This scarcity of sulphur in normal soils is probably related to the ready leaching of sulphur into drainage water. At the same time, improved analytical methods have demonstrated that crop plants require more sulphur than was formerly supposed. They remove it from the soil fully as rapidly as they remove any of the other elements which may become limiting factors. The normal sulphur content of soils is sufficient for from 15 to 70 crops, provided there are no additions from outside sources, as from rainfall. Even if we count in the rainfall sulphur, it is probable that sulphur is just as often a limiting factor as is phosphorus, or nitrogen, or potassium. For two of the last named elements do not leach as readily as sulphur. The important point is this: If sulphur is a limiting factor, addition of any other fertilizer is useless, and a waste, just as much as would be the use of gypsum as a fertilizer if phosphorus were the limiting factor.

Instead of thinking of the N. P. K. formula as representing a "complete" fertilizer, it is time we began work solely from the standpoint of limiting factors, including not only these three, but sulphur, calcium, magnesium and any other factors which influence crop production. The early failures with gypsum were probably due to the fact that phosphorus or some other ele-

ment besides sulphur was limiting growth, or that sulphur at any rate was not the thing needed. These remarks must not be construed as argument for the discontinuance of any of the fertilizer elements now in common use. It would be a grave error to try to replace them with sulphur when they are deficient, but we can no longer ignore sulphur as one of the very important fertilizer elements.

Since the Cruciferae and Leguminosae are known to use quantities of sulphur in their metabolism, crop plants of these families must be the ones most likely to suffer from deficiency of sulphur. Recent work by Reimer at the Oregon agricultural experiment station is very significant and deserves

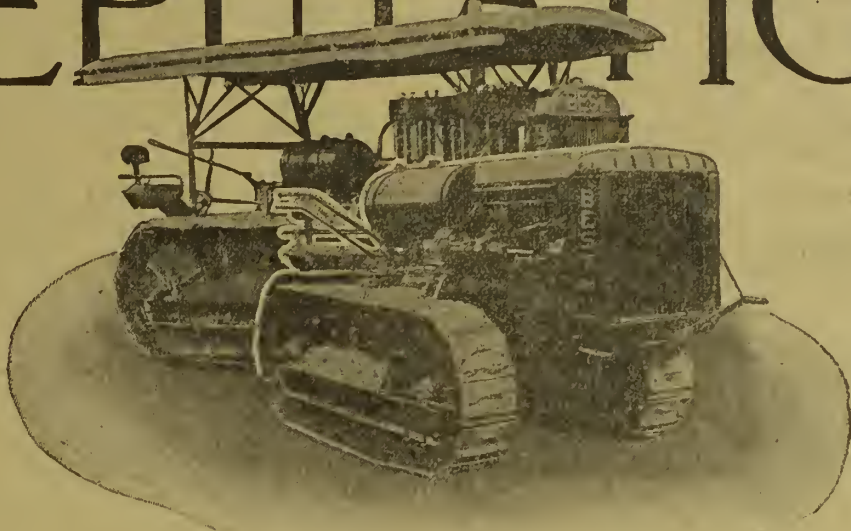
the attention of agriculturists and scientists all over the country. He has found that many of the soils of Oregon are deficient in sulphur, and that addition of sulphur-containing compounds of almost any kind may lead to very remarkable increases in the yield of alfalfa or clovers upon such soils. His experiments extended over several years and involved a variety of soils. The increased production ran from 50 to 1,000 per cent in alfalfa with application of such sulphur-containing materials as gypsum, sulphate, flowers of sulphur, etc. Addition of phosphorus without sulphur had practically no effect, showing that the acid phosphate was valuable only for its sulphur content in this case. The possibility of such increases is a challenge to agriculturists everywhere in these times of underproduction.

The best results seem to come when

the sulphur is used as a top dressing on the legume crop. The usual custom in the United States is to fertilize the cereals, wheat, etc., and allow the legumes to get the effects a year or two later. Sulphur applied in this way does the legume crop little good, for most of it disappears out of the soil by leaching before the legume comes in the rotation. The early successes were most notable when application of the sulphur fertilizer was made directly to the crops most needing it, the legumes. These convert the sulphur into the organic form, and if used as green or stable manures, provide sulphur for succeeding crops in a non-leaching form. It seems quite clear that we are applying our sulphur fertilizers at the wrong place in the rotation when we use them with the cereal grains, which require little sul-

(Continued on Page 811.)

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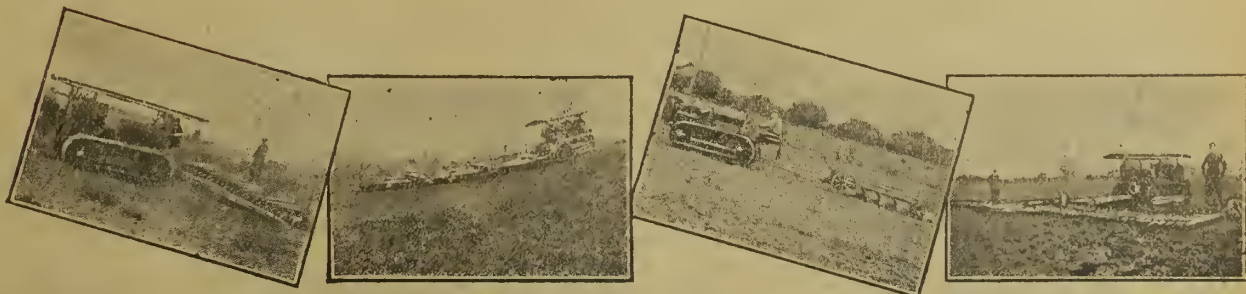
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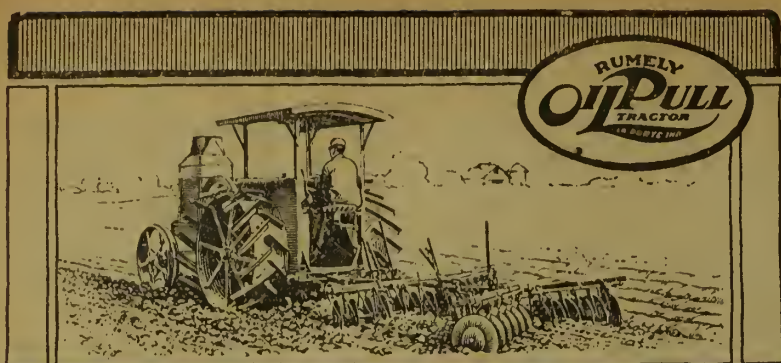
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Questions and Answers

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Gum Disease

We have from Dr. R. R. Snowden letter which he has just received from a Porterville orange grower, referring to beneficial results of treating gummosis by removing all diseased bark down to clear wood, then disinfecting and coating wound with salicylic acid, half drachm, pine tar half ounce, shellac varnish one quart, given in article by Dr. Snowden in the Cultivator of November 23, 1918. The writer asks if anything better has been found, and continues: "I am again in trouble, for my trees have not been irrigated correctly and so have a white mold around the trunk below the soil. Today I exposed the trunks of 150 trees, scraped as I would for scaly bark and treated the crown roots and the diseased bark with your formula. Did I do the right thing? I have just put on 15 tons of stable manure to the acre, have fumigated and shall soon prune. Have plowed one way and if it doesn't rain we shall finish plowing in about ten days. Would you dig well around the trees to try to eradicate what must be a serious trouble, for the mold surely extends below where I can see? My trees look unusually well, though I had almost no crop this year. Now I see why.

Dr. Snowden answers: "I know of no better treatment for the trees that have failed to recover than that already applied. The bark should be scraped a little farther around the diseased parts and a new application of the same remedy made after the scraped parts are dried. It was a mistake to scrape away the bark for the white mold noticed on the base of the trunk, as that could have been readily destroyed by whitewashing trunk and root crown. Both of these troubles and many others of citrus trees in California are due to bad planting. Citrus trees should be planted with the root crowns at the surface of the ground, just as all trees grow in the forest. They would be more resistant to all kinds of trouble than when weakened by such unnatural planting. If the roots are affected by the mold the soil needs lime and the kind to use is thoroughly air slaked lime.

Persimmon Seeds

Please tell me how best to germinate persimmon seeds, when should they be planted and how long will it take them to come up?—Subscriber, Orange.

Seeds should be planted at once and will probably show through ground about May. It is best to stratify them first, in a box of fine sand or soil retentive of moisture; they should not dry out. Leave in strata for 60 days or until seeds become plump. Even if starting to sprout no harm is done if they are kept moist. Then plow furrow and plant in nursery row or in field where they are to be budded if you so choose. Seeds may be planted direct in nursery row but it would involve months of care and weeding, which is more easily done in compact form.—E. B.

Stock Laws

Has there been a state law passed during the last year which would affect running stock in San Diego County?—Subscriber, Ramona.

We are not informed as to any ordinance which may have been passed by the San Diego County board of supervisors but there has been no state law passed within the last year. There will probably be changes made at the coming session of the state legislature which convenes in January.

Dip for Potatoes

Will you please tell me how much water to use for each pound of corrosive sublimate when used for dipping potatoes? Also how much for each ten sacks of potatoes?—Subscriber.

The proportions in mixing this dip for potatoes are corrosive sublimate,

one ounce; water, six gallons. Immerse whole tubers for one and one-half hours and be sure to plant in disease free soil.

Peach Tree Borer

The department of agriculture recently sent us a bit of copy regarding determinations of the department as to para-dichlorobenzene treatment for peach borer. Our readers have seemed to find it impossible to secure this material, and we have tried one of the largest drug and chemical houses on the coast and they have never heard of it, hence we are asking Washington regarding this substance which it asserts is used very largely in the Georgia peach belt.

Walnut Variety

Can you tell me the trouble with a walnut tree not bearing?—I have a row of 20 trees set 40 feet apart along an irrigation ditch, ten feet from ditch. The trees are 12 years old and all bear well except the last one on the west end of row, and this tree has a good crop of large nuts, but they have little or no meat or kernel in them, and what there is is black and dried up. What can be done, if anything, to remedy the defect?—Subscriber, Modesto.

This is plainly an unproductive tree and the sooner it is grafted over the better, this providing the root and tree generally are in good healthy condition. Select grafts from known bearing quality tree which produces desirable type of nut.

Cheap Paint

I desire to paint my farm buildings, but the cost of labor is prohibitive at this time, although I have the materials on hand. If possible will you kindly advise me if there is an inexpensive spray outfit on the market for paint or stain? I have known of painters using a spray to do a quick job. I enjoy your paper greatly and read it every week.—Subscriber, Thermal.

The Cultivator has given several cheap paint mixtures ranging all the way from skim milk and cement up, but at the present time linseed oil is coming back to a reasonable price and we imagine a paint with liberal quantity of linseed oil would be one of the cheapest in a period of years. As to spray pump, the ordinary pump as used in orchard work has been employed, and most successfully, in the application of paints and whitewashes, especially whitewash in the interior of barns and warehouses. If care is taken in straining the paint through fine wire sieve the pump works as well as it does with ordinary sprays as applied to trees and the application of paint is made much more economically.

De-eared Rabbits

I have two Belgian hares that were born without ears. There is a hole on each side of their heads, but no sign of projecting ears like rabbits should have. Do you think catching the doe by the ears before the rabbits were born would have anything to do with it? The rabbits are now four weeks old and very lively. Their fur also seems to be so much softer and finer than the other rabbits I have. Both rabbits have a face something like an owl. I suppose, though, it is because they have no ears.

We think the California Cultivator a very good paper and find many interesting and helpful hints in it.—Barry E. Girling, Modesto.

We fail to see the advantage, or otherwise, of this type of rabbits, but going on the assumption that like breeds like, we would think some interesting experiments could be carried on with these freaks.

AFTER WEED PESTS

The meeting of the horticultural commissioners at Fresno resulted in determination to more effectively control and restrict the spread of the various weed pests of the state. The committee chosen at that time to formulate plans for an effective campaign has selected Harry P. Stabler, chairman, and H. M. Kingwill, secretary.

Cattlemen to Try New Market Plan

By R. P. Royce

SEVERAL hundred of the leading cattlemen of California met in annual convention of the California Cattlemen's Association in San Francisco, December 11, and adopted a plan for stabilizing their markets that is at once a new departure and a plan full of possibilities. Indeed, it is generally believed that the proposed plan constitutes the first constructive suggestion that has developed from any similar convention. It has long been recognized that the prime problem of the California cattle producer was one of markets. Being far removed from the center of the cattle trade and lacking any semblance of an organized market such as Eastern producers have, they have faced a peculiar set of conditions that were most unsatisfactory. The association was organized with the idea of correcting many of the faults of our marketing system, but it appeared from the outside that slight progress was being made. Now comes this new plan that may prove to be extremely useful—at least it was received with enthusiasm and is to be given a trial. The plan is largely credited to Fred H. Bixby, who has been president of the association for the past two years, but it received the endorsement of the marketing committee of which C. N. Hawkins was chairman.

In brief, the plan proposes to stabilize the coast market by controlling the surplus, it being agreed by all that control of the surplus will control the market. In California we have two periods that register a surplus of cattle above our consumptive needs. There is a spring surplus in May or June when Southern cattle come off grass and a fall surplus when the Northern cattle are fat. With the exception of a small number of South Texas cattle no other cattle are fat enough to compete with our fat stuff in May. Consequently it is known that the May and June market in the East is fairly good. Now if all these fat cattle are sent to the Coast killers the surplus is sufficient to break the market. In the past but few producers have had the nerve to ship out of the state to Eastern markets for the reason that they have been afraid to take the chance of consigning their cattle to an open market. The association now plans to raise "a guarantee fund" of \$250,000. This fund will be raised by personal notes from the cattlemen themselves. The fund will exist as notes, no cash being collected, and these notes will be deposited with a bank as collateral for loans to be made to the association for the carrying out of their plan of marketing. Once having secured this fund—and it is said to be certain that the amount will be raised—a committee will be appointed to supervise the marketing. This committee will be made up of recognized and conservative experts. It will be their duty to assemble accurate data on the entire cattle industry of the West; to know the probable supplies; the condition of feed; the approximate time the cattle will be ready to market, and the market situation on all of the principal markets of the country for the various classes of grass cattle. With these data in hand, and with complete information as to the actual cattle situation in California, the committee will be empowered to enter into contract with any California producer, who has top fat steers, to ship his steers out of the state on the following plan: The cattle will be carefully graded and the owner will be guaranteed against loss, that is, he will be guaranteed the price that the committee has agreed is fair at the time. For example, if the committee finds that the Eastern price for cattle of that grade is, say, eight cents per pound and that it will cost two cents per pound to ship, the owner will be advised that his cattle are worth six cents in California. If the coast packers will not pay that price, or even if they will, the owner can enter into agreement with the committee and ship his cattle out of the state. If his cattle fail to bring the price determined upon, the committee representing the California Cattlemen's Association will remit him the amount

of his loss. This money will be secured from a bank through the use of the guarantee fund. If at the end of the fiscal year there has been created a deficit in the fund, the members of the association agreed to pro rate the loss among themselves. Such action will amount to this: Instead of the individual contracting a loss in an effort to relieve the glut on the local market and thereby act to hold up the coast market for the benefit of the many, the cattlemen as a whole will absorb the loss. It was declared that expert cattlemen do not contemplate a loss in any one year. There is another point in the plan that is of interest. When an individual contracts with the committee to ship his cattle out of the state and a profit is made by reason of his cattle selling for more than the guaranteed price, 50 per cent of the profit will go to the association and be credited to the guarantee fund. It was stated that the association expected to eventually

create a cash guarantee fund through such profits.

In presenting the report of the marketing committee, Chairman Hawkins declared that the cattlemen of this state had been saved an amount of money difficult to estimate. He declared that all during the past season, and at the present time, this state enjoyed the highest market for grass cattle of any state in the Union, and he attributed it to the fact that the association had early taken steps to hold up the market by shipping cattle out of the state. Hawkins said that cattle that are worth ten cents on our coast markets are only fetching seven to eight and one-half cents on other markets. He further asserted that last May the stage was all set by the killers to break the coast markets and that they were forestalled when several thousand cattle were sent out of the state and it became evident that thousands of others would be shipped if the price was not fair. He gave \$5,000,000 as a conservative estimate of the amount of money saved California cattlemen by following the plan of shipping East. These figures are based on the assumption that 500,000 cattle have been marketed in this

state, since May, at \$9 to \$10 per head more than the packers expected to pay.

In referring to proposed plan of marketing, Hawkins gave it as his opinion that the packers were inclined to play fair with the cattlemen.

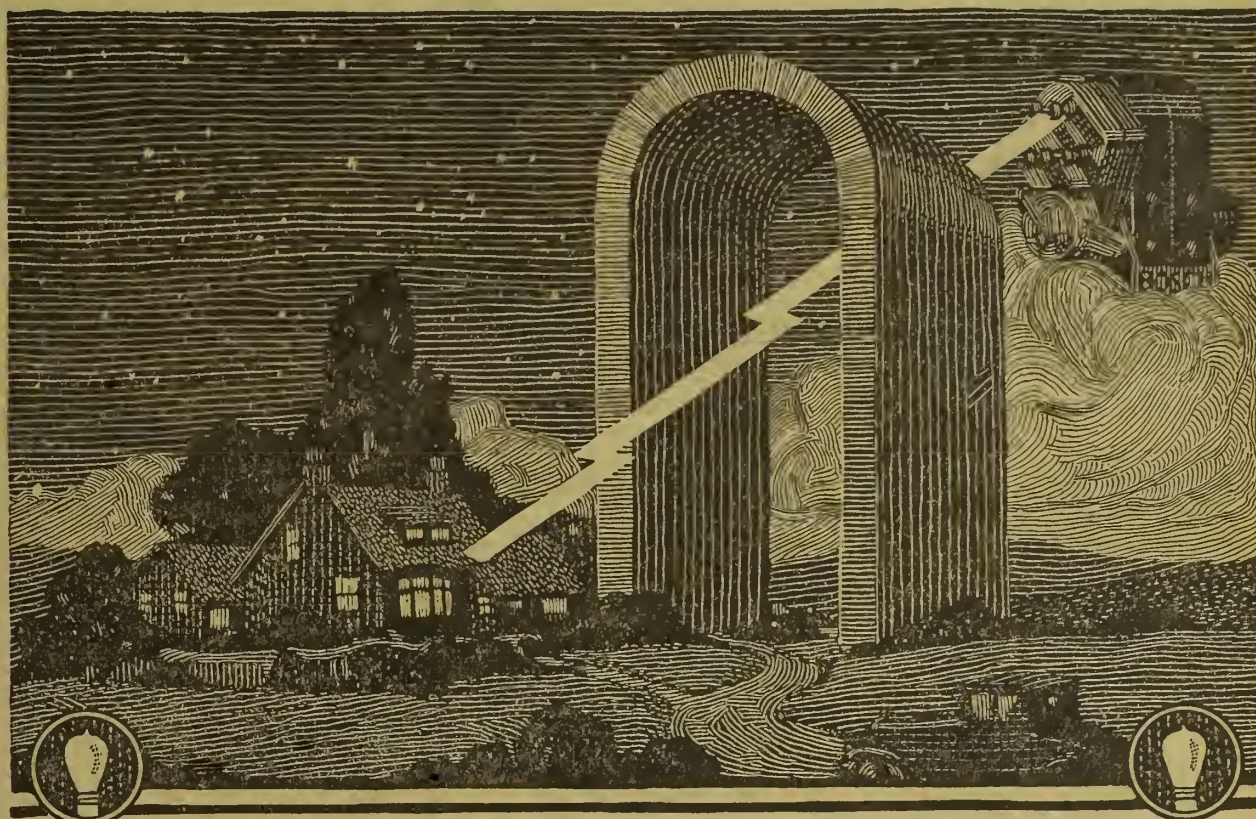
Other features of the meeting were addresses by Dr. David P. Barrows, president of the University of California; Mr. William Sproule, president of the Southern Pacific Company; Professors W. R. Camp and P. B. Kennedy of the University of California and Paul G. Reddington of the United States forest service.

Several changes in the by-laws of the association were agreed upon.

During the meeting the members raised a fund of over \$13,000 to clear up the indebtedness of the association. O. B. Fuller of Los Angeles was master of ceremonies and demonstrated his ability to "get the money."

T. H. Ramsay of Red Bluff was elected president to succeed Fred H. Bixby.

A banquet was held at the Palace Hotel following the meeting.



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 San Luis Obispo: California Garage, 879 Higuera Street.
 Santa Ana: Orange County Ignition Works, 302 East Fifth Street.
 Santa Barbara: Western Machinery & Foundry Co., Cota and Anacapa St.
 Santa Rosa: L. & T. Company, 300 Fourth Street.
 Stockton: W. S. Maxwell Company, 207-9 North El Dorado Street.
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One Piece Frame

OBTAINING A START WITH PUREBREDS

There are thousands of farmers all over the United States who are breeding scrub cattle which, if the cost of feed, pasture and labor incidental to their keep were figured, would show considerable loss. When these same farmers are approached and efforts made to interest them in the purebred business, they state that it takes too much capital to start. The same argument will apply to anyone wishing to start farming or any other line of business. The successful man of the twentieth century is he who has more energy, initiative and courage than his neighbors.

In almost every section of the United States there are local associations of breeders of the various breeds of livestock which are formed for the purpose of encouraging and assisting other breeders of the same stock. Most of these associations conduct sales and otherwise assist in the disposal of the surplus stock.

Almost all of the larger breeders started in a small way with the purchase of a few head. What may be accomplished in a short time is well illustrated by the following facts related by Professor E. L. Potter of the Oregon agricultural college. In 1914 \$2,500 was appropriated by the officials of the college to purchase a few purebred Hereford cattle to form the nucleus of a herd. The college was growing and a herd became necessary for the instruction of the students. The amount appropriated was not much, but Professor Potter was determined to make the best of what he had available and with these funds purchased eight head, seven females and one bull. This spring a representative of the Hereford association visited the college and found a herd of 25 beautiful females and the herd bull. Not another female has been purchased, the entire herd having been built up from the original eight head. They not only have this beautiful herd, but have sold \$5,000 worth of cattle out of the herd in the past six years, thus double the original investment has been realized in sales, and more than three times the original number of cattle purchased remain on the college farm.

This instance cited is not exceptional, in fact, almost every breeder of purebred stock has had practically the same experience. It is true that it would cost more to start now than it did six or ten years ago, but the progeny are worth more than they were in those times also. Two or three or a dozen head may be purchased and handled practically the same as other cattle on the farm and it will be found that the purebreds require less feed than the scrubs. Take care of the calves, grow them out in good shape, and you will have no need to worry about the sale of them.

With the farm bureau, county agent, fieldman and local associations helping to develop better farming methods and better livestock in your community, you may rest assured that if proper attention is paid to the development of the young stuff, ample returns will be forthcoming.

NEW DEVELOPMENT OF COW TESTING ASSOCIATIONS IN THE WEST

It has been felt for some time that many men were not getting enough out of cow testing association work here in the West, and in order to bring to every man the full benefit of being in an association the western office of the dairy division has been urging organization along the following lines:

An association of from 300 to 600 cows in about 25 herds; charging enough per cow to enable the employment of a man as tester, who is in reality a dairy specialist.

Payment of all money in advance, or giving bankable promissory notes to cover all payments.

The association to be a department of the farm bureau or a farm bureau project, so that the county agent will have supervision over the tester and the affairs of the association.

The function of the association to be in the main: Culling of unprofitable cows; teaching of scientific dairy feeding and dairy management; foster-

ing of better breeding and better care of young stock.

Several new associations have been organized on this basis and two are worthy of special mention, viz., the Bonner County, Idaho, Cow Testing Association and the Sacramento-Yolo Farm Bureau Cow Testing Department of Sacramento.

The Sacramento-Yolo association was organized in October, 1920, and 600 cows were signed up at \$4 per cow, which gives the association \$2,400 per annum for operating expenses. Every member of the association gave



Your Private Cow Doctor

If cows could tell their feelings, many a serious illness would be prevented, and constant milk losses would be saved.

Milking cows, particularly, are subject to many ailments that are first manifested only in a reduced milk yield.

Such cow ills you can treat yourself with the aid of Kow-Kare, the great cow medicine. At the first sign of reduced milk flow try Kow-Kare. Use it according to directions and watch the story the milk pail tells.

Dairymen everywhere know the value of Kow-Kare both in preventing disease, and in treating such ailments as Barrenness, Abortion, Retained Afterbirth, Scouring, Lost Appetite, Bunches.

No cow barn should be without Kow-Kare, your private cow doctor. Sold in 70c and \$1.40 packages by feed dealers, general stores and druggists.

Write for free book, "The Home Cow Doctor."

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Use Hereford Bulls

The Hereford is the range bull without a peer.

My Herefords have size, bone, constitution and are notably thick fleshed. Visit my ranch and get my prices. Send for free literature.

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DIAMOND G HEREFORDS

A few choice young bulls, big, heavy-boned husky fellows sired by DON PERFECT 2nd, one of the best sires in the West. Priced right and guaranteed.

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Has the reputation of being the most successful auctioneer on the Coast, by those who see his work "ON THE BLOCK." Is one of the best posted auctioneers as to Pedigrees and Values of any Auctioneer in the United States. Twenty years of successful breeding, buying and selling, for many of the leading breeders of the Middle West has put me in a position to be of much value to you, if you are planning to hold a Public Auction the coming season. A REAL AUCTIONEER. Try me, and if you are not satisfied that I have NO SUPERIOR on the Coast, it will not cost you a penny. Address, or wire me, 539 E. Pasadena St., Pomona, California. P. S.—Will go anywhere in the United States or Canada.

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We always carry a large herd of high-class Herefords and at the present time we are offering:

A splendid lot of young cows with Harris Standard 2nd calves at foot, and many of them rebred.

A nice selection of young cows and helpers bred to our herd bulls.

A choice collection of open heifers.

A lot of good rugged range bulls. These are the real money making kind, and they are priced to make money for the buyers. We will sell them in car lots or in lots to suit buyers.

We also have some choice young bulls of herd-header caliber that we will sell well worth the money.

We invite your inspection.

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Our ranch is on the main line of both the S. P. and W. P. railroads and only a twenty minutes drive from Wells.

Sierra Vista Herefords

One of the largest herds in the West. Built on a Repeater and Fairfax foundation. At present we have to offer 24 choice yearling bulls ready for service.

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PURITY SERUM CO., J. L. Thatcher, Mgr. Riverside, California

When Writing Advertisers Mention California Cultivator

four bankable promissory notes to cover the quarterly payments. Carol Stone is the dairy specialist employed as tester and he will test the cows and figure out the profits from each individual cow. He will also instruct the farmers as to the proper method of feeding and advise them on their dairy problems. Mr. Stone has had nine years of practical dairy experience as well as technical training.

The Bonner County association was organized along the same lines except that only 200 cows were signed up in 25 herds and the rate was over \$8 per cow. This association was started in September, 1920, and already some of the farmers say that they have secured their money's worth from it and other men are wanting to join. The specialist employed in this association is Matthew Resendes, who has had many years of dairy experience as well as seven years in cow testing association work. It has been said of

this association that the farmers did not have time to go to college but the college was brought to them.

These two associations should set the example for the rest of the West as they are bound to be a success as they aim at teaching men to be good dairymen while at the same time they improve their herds.

The rate per cow charged in these associations may seem excessive to some but it is necessary in order to secure the services of such men as testers, and besides it has been proved over and over again that even where the tester does nothing but test the cows that returns run from \$15 to \$50 per cow, while the return from these new associations should be much greater and more permanent, both to the individual and to the community. —C. V. Castle.

GOOD LIVESTOCK FARMING MEANS GOOD CITIZENSHIP

In a message to the directors and members of the Wisconsin Livestock Breeders Association, Andrew W. Hopkins, until recently its secretary, makes the following statement: "It truly is a noteworthy fact that where livestock farming has attained a high standard of perfection there also has citizenship attained an equally high standard. An intelligent contact with farm animals always has and always will insure a quality in the man; and a closer kinship with the better types surely brings forth fruits not yet compassed. General education, honesty of purpose, righteous living, culture and religion have made the most progress in those communities in which intelligent stock farming has been most generally pursued."

The United States department of agriculture has received a copy of Mr. Hopkins' recommendation for the future development of the livestock industry. These point out that stockmen may well seek to increase their returns from livestock: by discarding inferior animals; by strengthening their organizations; by cooperating when necessary in buying and selling; by combating disease; by supporting boys' and girls' club work; by studying livestock and milk marketing; by insisting upon more stabilized markets; by working for the proper relation between the price paid the producer and that paid by the consumer.

BULL ASSOCIATION PROVES PROFITABLE FOR FARMERS

Two years ago the United States department of agriculture and co-operating agencies organized a bull association in Webster County, Missouri, with 31 members. Now there are twice that many members, due to the success and usefulness of the association.

Before the association was formed there were 18 bulls owned by the men who afterwards joined it. Upon the formation of the organization the number of bulls was reduced two-thirds, because, after the members had been arranged into blocks, it was found that six bulls were enough. These were much finer animals, however. Judging them by their money value, the new ones were three or four times as good as the ones they replaced, since the average investment per bull was \$75 before organization, and \$276 after.

Yet, owing to the smaller number of bulls needed under the cooperative arrangement, the cost per farmer was but little more. The members had on the average \$43.71 invested in their inferior bulls, while the superior bulls owned by the association cost each member only \$53.45. This \$10 increase of cost per member meant a \$200 increase of value in the individual bulls from which they now have service—one thing which accounts for the doubling of the membership of the association after running two years. The value of the calf crop will probably show a very much greater increase.

ANNUAL PRIVILEGES

"I'm always glad when Christmas is over."

"I'm not."

"Why not?"

"Because I do anything I please for a month before Christmas and my wife doesn't dare to scold me."

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Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diphtheria. Removes Bunches from Horses or Cattle.

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Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.75 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address The Lawrence-Williams Co., Cleveland, O.

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SAFE ANTISEPTIC AND GERMICIDE

Does not blister or remove the hair and horse can be worked. Pleasant to use. \$2.50 a bottle, delivered. Describe your case for special instructions and Book 5 R free. ABSORBINE, JR., antiseptic liniment for mankind, reduces Strains, Painful, Knotted, Swollen Veins. Concentrated—only a few drops required at an application. Price \$1.25 per bottle at dealer or delivered. W. F. YOUNG, Inc., 244 Temple St., Springfield, Mass.

To The Holstein Breeders of California

Gentlemen:

We have bought Sir Ormsby Skylark Rauwerd and will accept a limited number of cows for service. To you who are well versed in Holstein pedigrees and records we need say no other word. But to those of you who possibly may be young in the business or who are not fully aware of what the Ormsby strain has done and is doing, we would suggest that you do not waste valuable years by raising calves from inferior bulls. Sir Ormsby Skylark Rauwerd is the best son of old Sir Ormsby Skylark who sired amongst other notable cows Duchess Skylark Ormsby 1,506.36 lbs. butterfat in one year which is the world's record for any breed.

The dam of Sir Ormsby Skylark Rauwerd is Beauty Rauwerd Hengerveld 2nd a 34.5 lb. cow whose sire Prince Segis Korndyke had 59 A. R. O. daughters; and her dam was a 29 lb. cow.

Peter B. Kyne

O. H. Cash

Sierra Vista Ranch

Perris, California

Maxwell Farms' Holsteins



Sir Ormsby Skylark
Sire of the World's Champion Cow

The fountain head of the Ormsbys with over 50 daughters of Sir Ormsby Skylark in the herd which has two sons of Sir Pletertje Ormsby Mercedes at its head. Write for our sales catalog of service bulls.

D. G. Maxwell, Owner

Garden Court, Hollywood, Cal.

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Average of his Dam and Sire's Dam (Both Former World Record Holders)

At Average Age of 4 yrs. 2 mo. 10 dys.	{ 1062.64 lb. Butter
Semi-Official, 365 Days	{ 21173.75 lb. Milk
Official Test, 7 Days	{ 31.91 lb. Butter
	{ 615.60 lb. Milk

His Sire—King Korndyke Pontiac 20th
His Dam—De Kol of Valley Mead 2d

Four of his seven nearest Dams have held World's Records

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3 miles south of Downey on Downey-Long Beach Boulevard

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Sired by Sir Veeman Korndyke Pontiac and out of yearly record cows. Write for prices, photo and pedigree.

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where efficiency is our watchword and the production of extra heavy milking Holsteins and big type Poland Chinas is our specialty. A few choice animals of either breed or sex for sale at all times at reasonable figures. Write for information.

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Visalia, Cal.

Livestock News Notes

LIVESTOCK SALE CALENDAR

Holsteins
February 3, James J. Jeffries, Burbank.
February 5, W. A. Thompson, Hynes.

Poland Chinas
February 17, Bassett, Ross & Crawshaw, Hanford.

Berkshires
February, Italian Vineyard Co., Guast.

Durocs
February, Falfadale Farm, Perris.

Percheron Horses
February 17, M. Bassett, Hanford.

Howard W. Vaughn, who has lately purchased a ranch near Dixon, has returned from his former home in Iowa and is bringing out a shipment of 20 Shorthorn bulls. Vaughn says that he is also bringing a few females but that he expects to gather most of his breeding herd in this state for the reason that he finds he can buy a better quality of cattle in California than he can get in the East for the same money.

Dr. Frank C. Gearhart of Manila, P. I., has been visiting breeders in this state with a view to selecting Ayrshire cattle, Berkshire and Duroc-Jersey swine and saddle horses. Dr. Gearhart has been in the islands for 13 years and says that there is a splendid opportunity for breeders of this state to develop a profitable business in the Philippines.

DON'T LET YOUR TREES DIE

Protect pruning cuts and wounds against infection with Pabco Pruning Paste. Ask your dealer. Manufactured by The Paraffine Companies, Inc., San Francisco, Calif.—Adv.

C. L. Hughes, manager of the California Breeders Sales and Pedigree Company, announces that the well known Revada herd of Guernseys, formerly owned by Bert Nixon and now the property of the Mission Land and Cattle Company, Yountville, has been placed in his hands for complete dispersion. The date of the sale will be announced later.

W. S. Guilford of Butte City Ranch has just returned from Chicago where he attended the International show. Guilford was elected a director of the American Shetland Pony Club. He is now director of two national record associations, having been given a similar honor with the American Shropshire Record Association last year.

V. F. Doicini, owner of the June Acres Stock Farm, Davis, reports the sale of a Duroc boar for shipment to the Philippine Islands. The boar was sired by Choice Wonder 3d, grand champion at the recent state fair.

A number of good official records have recently been made in the herd of registered Holsteins at Jane Garden Farm, owned by Fred W. Kiesel, Sacramento. Jane Garden Dirkje Korndyke, prize senior yearling at 1920 California state fair, freshening as a junior two year old, made 20.06 pounds butter from 391.8 pounds milk in seven days. She is a daughter of King Korndyke Pontiac. Jane Garden Tapioca De-Kol, a junior three year old daughter of Sir Aaggie De Kol Acme, made 25.60 pounds butter from 565.8 pounds milk in seven days, milking as high as 87 pounds in one day. Natoma Superba Pontiac, a four year old, made 24.86 pounds butter from 506.1 pounds milk in seven days, and Natoma Hermosa Pontiac, another

junior four year old, made 25.22 pounds butter from 522.3 pounds milk in seven days. These records were made under the direction of Harry L. Redd, who now has charge of this herd. Meadmore Prilly Queen, a splendid helper owned personally by Redd, made 27.54 pounds butter from 506.9 pounds milk in seven days after dropping a fine heifer calf by King Korndyke Pontiac 20th.

H. C. Witherow of Greenwood Farm, Live Oak, reports sale of a bred gilt to J. M. Hampton, Jr., Live Oak. This gilt was one of the best in the herd and was sired by Johnson's Defender Jr., and bred to Western Pathfinder for an early March litter. Mr. Hampton selected this gilt for the foundation of a choice herd of Durocs he expects to maintain on his ranch north of Live Oak. Also a boar pig to C. E. Riesche, Meridian. Mr. Riesche bought the foundation of a pure bred herd from Greenwood Farm in 1919. He is an extensive hog raiser and is rapidly changing from grades to pure breeds.

REVADA GUERNSEYS TO BE SOLD

The herd of registered Guernseys at Revada Ranch, Yountville, will be completely dispersed at public auction on Thursday, January 20, 1921. The herd contains a number of imported cows, including daughters of Governor of the Chene, Robert's Secret, and Raymond of the Preel XIII. This herd, which was founded by Bert Nixon, is now owned by Mission Land & Cattle Company, who also own the ranch, and have other plans in mind for the property requiring the dispersal of the Guernseys. The sale will be under management of California Breeders Sales and Pedigree Company.

JAS. J. JEFFRIES HOLSTEINS WILL BE DISPERSED

In order to enable a complete devotion of his time to his rapidly developing oil and mining interests, Jas. J. Jeffries, Burbank, will make a complete dispersal at public auction of his noted herd of registered Holsteins, on Thursday, February 3, 1921. The offering will contain the two highest record cows ever sold in California, one with over 38 pounds butter in seven days, the other with a recently completed record of over 1,140 pounds butter in one year. The great herd sire, King Segis Pontiac Jannek, will sell, also 40 of his daughters, including the entire show herd that made such a sensational showing at Los Angeles in October. The sale will be managed by California Breeders Sales and Pedigree Company.

W. A. THOMPSON HOLSTEIN DISPERSAL

W. A. Thompson, Holtville, will disperse his herd of 66 registered Holsteins at Rhoades & Rhoades' new sale pavilion at Hynes, on Saturday February 5, 1921. Included in the offering are two daughters of King Mead of Riverside, and many other young females of high record and popular breeding. California Breeders Sales and Pedigree Company will conduct the sale.

BACK TO NORMALCY WITH LIVESTOCK

(Continued from Page 787.)

stay on a lower level than the last few years recorded. Stability will be reached at a point somewhere between the two extremes.

Now is the time to do some sound thinking and planning.

It must be admitted that livestock production is one of the basic industries. Therefore it is sound and will endure. We all know that to be a fact. At times depressions and rough going will affect livestock, but only temporarily. As long as our agriculture lasts men will produce meat, milk and wool and the consuming public will furnish the outlet. We mention the above in passing only because there seem to be a good many men who consider that the livestock business has "gone to pot"; that the future is black; that people will stop eating meat and drinking milk and wearing wool and therefore if they get out at all they must lose no time in dumping and liquidating their holdings, or whatever they can get and scramble for safety. As yet it does not appear just what they expect to do immediately following the full fruition of their dire prophecy, but our guess, based on considerable observation, leads us to predict that these members of the "cold-feet brigade" will be the first to turn back to livestock the moment prices hit the upgrade. We are led to that conclusion because most of those who are lowest in the depths and who are crying the loudest belong to the extensive organization, the A. E. M., after easy money. The members of this organization are running true to form. They are the men who are always looking for something easy; always board the band wagon when boom times come (are, as a matter of fact, responsible for booms), and invariably ride till the parade starts back, at which point they jump off.

Over a period of years, it will be found that most lines of industry operate in circles. High points are invariably followed by low eras and low eras give way to better times. Naturally, all would be well if the average man were wise enough to always pick the low spot to buy on and the high spot to sell on. But despite the fact that most of us try to "beat the game," the number who make good is so small as to be almost negligible.

Over a period of years it will be found that the man who gathers the profits is the man who sticks through the low spots and so is in position to cash in on the high spots. It has ever been so and it bids fair to hold true in the future. In short, most of us are born gamblers and speculators, and while we sometimes have a world of fun counting our paper profits, in the end it is the man who sets out to build a permanent business and who has the grit to stick year in and year

WHICH?

If you had a given sum of money to invest, and on the one hand you were offered a security that is a proven producer, and readily salable to a large circle of buyers at a stable value, and on the other hand you were offered another security with little or no proven production, and one for which there is little or no public desire to buy, which would you take.



KING KORNDYKE PONTIAC 20TH

The mating which produced this outstanding young sire was made in our herd. He was born in the ownership of Anita M. Baldwin, sold by her at public sale as a yearling for \$6,500.00 to W. J. Higdon, who sold him at public sale in his semi-dispersal for \$12,000.00, both prices higher than that recorded by any other bull yet sold in California.

His sire, KING KORNDYKE PONTIAC, by King of the Pontiacs and out of a half sister to Prince Gelsche Walker, second dam for many years the youngest 30 pound cow of the breed, we regard as one of the most valuable breeding bulls in the state, and he will be the subject of the next announcement in this series.

His dam, MISS VALLEY MEAD DE KOL WALKER, with three world's records to her credit as a heifer, winner of the California State Dairy Competition over all ages and breeds, and with 1,113.58 lbs. butter in 342 days as a junior 3 year old, has been accorded by many breeders a place among the greatest heifers the breed has yet produced. She is one of the stars in the De Kol of Valley Mead family in our herd, where one of her sons is in active service, and another younger son is rated by many as the equal to any bull we have yet produced.

We feel that KING KORNDYKE PONTIAC 20TH is rightly rated as one of the best of the younger sires of the breed. His breeding entitles him to such a rating, and his young daughters stamp him already as a proven sire. He is the sire of the \$41,000.00 bull King Korndyke Pontiac Acme, has several other sons already at the head of good pure bred herds, where they went at prices from \$10,000.00 to \$5,000.00 as calves, and he is now in heavy service in one of the largest well bred herds yet assembled for foundation purposes in California.

We take pride in the part we had in the production of KING KORNDYKE PONTIAC 20TH, who now heads the large and excellent herd of registered Holstein-Friesians owned by

BURR FARM

LOS ANGELES

CAL.

In the selection of your herd bull, which is one of the most important investments any breeder has to consider, do you apply the same sound business principles that you would to other investments?

Every breeder must keep in mind constantly as a prime factor in his success or failure, that his herd bull contributes one-half or more to the value of every calf born in his herd, and that this is a most important consideration both in the individuals he retains as breeding animals and in those that he offers to other breeders.

Is your herd linked up, through your herd sire, with the big yearly producing families, whose members for generations have been proven, profitable producers and reproducers, and whose worth is so widely known that they find ready sale at stable prices to a large circle of buyers?

When you find DE KOL OF VALLEY MEAD, ARALIA DE KOL, RIVERSIDE SADIE DE KOL BURKE, or TILLY ALCARTRA as one of the dams in a pedigree, you have a standard of value that is widely known, and when two or more of these dams are found in combination further popularity and value is added.

We invite you to put your herd bull problem up to us, whether you want a high class sire to head a registered herd, or a high class bull to head a herd of grade cows, with a view to increasing production and improving type. Our knowledge of several generations of ancestors behind the bulls we offer is at your service, and our prices have always been regarded as most reasonable.

A. W. Morris & Sons Corporation
Woodland, California

out, who wins. Perhaps he doesn't have the fun the balance do, but he is the man who accumulates a competence for his family and himself.

The big thing to be decided by the average livestock man at the present time is whether he will play the role of the speculator, unloading his stock along with thousands of others for no better reason than that others are unloading, thus adding additional weight to drag the market still lower, or whether he will decide to continue his operations, perhaps on slightly curtailed basis, secure in the knowledge that a change for the better will come.

Those who have taken pains to investigate the livestock situation as it exists in this state and to check up local conditions with conditions obtaining in the Middle West and East are unanimous in the belief that the livestock business of California is on a sounder basis than in any other section.

In the first place, while our pure bred industry expanded very rapidly during the last two years, there was a legitimate reason for such expansion. This state was and is woefully short in number of pure bred livestock. During the last few years the speculative element that was responsible for the tremendously inflated values recorded in hundreds of Eastern sales was lacking in our transactions. California men, for the most part, bought because they were anxious to raise the quality of their productions, and not because they expected to resell at greatly increased values. All the time when Eastern price records were being shattered daily, California sales failed to reflect, to a noticeable degree, the Eastern markets. Anyone at all familiar with livestock realized that the fictitious values that were reported could not last. Now the very fact that our values at no time reached the spectacular levels referred to, constitutes the reason for the assertion that our industry is on a sounder basis than exists in the East.

Furthermore, there exists in this state a legitimate demand for breeding material capable of raising the standard of our common stocks—and that in the end is the ultimate reason for buying well bred animals, and both breeders and purchasers will do well to keep that fundamental fact in mind, now and in the future.

Too many of our "breeders" have not been real breeders. Men have gone into the business with little or no knowledge of the business and lacking a correct conception of the possibilities and limitations of the business. These men have learned their lesson.

Any man who engages in the production of pure bred livestock with the sole idea that the business is easy and a quick route to wealth will be disappointed. The best that can be hoped for is that out of the new recruits a few men will succeed as breeders. Note that we say "succeed as breeders." If the average man buys pure bred livestock with the idea and conviction that he can make pork or beef or milk more economically than with common bred animals, and is willing to give his purchases a fair trial, he will come out all right and will develop a profitable business; but if he makes purchases with the one idea that he can sell all of his productions at high prices he is headed for disappointment. What this state needs is more men who will buy a few pure bred females and a sire with the intention of conducting his operations on a commercial basis. For such men there was never a better opportunity than exists at the present time, and there never has been a time when it was more imperative for men to consider the possibilities of pure bred livestock.

Today—and certainly in the future—our production problems will largely center about production costs. We must either get our business on a profitable basis or quit. We can, perhaps, look for some relief through improved marketing methods, but we cannot expect too much from that source. Our profits will depend largely upon our own efforts independent from any mass movement. It is up to us as individuals and regardless of what course our neighbors follow, to own cows that will produce butter fat, or steers that will make cheaper growth, or hogs that will make cheaper pork, than those owned by our neighbors. We have our land, feed and capital and the

majority of us will continue in the business of growing crops, and we must have livestock to consume our crops and maintain our soil fertility.

Now then, let us just look around and see who among our neighbors have been making money over a period of years. True, we know that the average man has not been making money, but has Mr. Average Man in any line of effort made money? After all, isn't it the man who is above the average who has made money? Doesn't the fact that he has made money raise him above the average?

What chance have we to compete with our neighbors if their cows produce 400 pounds of fat and ours produce 200 pounds? What chance have we with steers that weigh 1,000 pounds at three years old with the man whose steers weigh 1,500 pounds at the same age?

Now, each of us pretty well realizes that the reason some cows produce more fat or steers carry more weight is that they have been "bred up" through the use of better blood. Knowing that to be true, are we going to admit as much, lay aside whatever prejudice we may hold and set about to follow the methods of these more progressive and successful men, or are we going ahead blindly along the road we have been traveling? If you want to make the change, start now! Don't put off making a start. There never was a better time than now, for the reason that there is a narrower margin between grades and pure breds than we have seen in years. Sell a few of your grades and invest the money in fewer pure breds. Make such investment not with the idea of at once setting yourself up as a breeder, but because it is just common sense good business to lay a foundation for what will in time become a pure bred herd. And once having started, "stick to your last." It's the men who go in to stay who are not stampeded with the crowd—who buy when the other fellows sell—who make the profit.

I think it was the late J. P. Morgan who, when asked how he made his money, replied that he "bought his straw hats in the fall"—in other words, he bought on low markets. The writer realizes that a good many men are financially unable to make a start with even a few pure breds, but he knows that there are hundreds who can make a beginning.

In closing, it might be well to remind a lot of producers that the war is over. We are led to call attention to that fact for several reasons. When the war caused an abnormal demand for certain grain crops, wheat, barley, beans, rice and corn, hundreds of men, attracted by the high prices, turned from livestock to grain. A lot of breeding material was sacrificed and today our total number of meat and milk animals is probably considerably less than four years ago. Many, perhaps the majority, of these grain growers increased their acreage each year. The present harvest throughout the country has yielded bumper crops, and today every warehouse in California is chuck full of grain for which the owners cannot find a market. It is folly to believe that all our grain crops will be consumed as human food—some will, of course; but in the end we must look to livestock to furnish an outlet. And right there the way back to normalcy is pointed out. If we continue to grow grain and grass—and who believes other than that we will?—we cannot escape the fact that livestock is our one best bet. Again, we can be certain that much land that has been in grain, and many acres yet to be brought under irrigation will be seeded to alfalfa. What are we going to do with our hay? There's only one answer. Size up the situation as you will, leave out the fundamental question of soil fertility, and it will be seen that year in and year out the production of livestock is a sound business. But don't lose sight of the fact that your profits will depend upon how efficient your livestock is. Furthermore, don't go into the business as a speculation. Go in on a conservative basis. Be willing to wait a few years to accumulate a herd of pure breds—it doesn't take long. Do not regard your herd simply as source from which to sell breeding material. Plan to have eventually a herd of pure breds for the one reason that such animals are capable of returning

you more for your feed and labor than will grades.

The writer knows of a number of men who are not worrying about the barley market and the lack of sale at \$1.50 per hundred. They are putting it through livestock—good livestock—and figure they are netting \$2 to \$2.50 for their grain. These men have the correct view; they are using better livestock to afford a market

for their grain. Maybe they are not making all that they should, but at least they are in better shape than many of their neighbors. Therefore we say—remember, the war is over; the time is here when we can't figure war prices for our grain, and it's time we get back to normalcy, and that we get back to normalcy without delay through the use of livestock—efficient livestock.

Sensational Dispersal!

Jas. J. Jeffries Herd

75—Registered Holsteins—75

Jeffries Ranch, Burbank, Cal.
Thursday, February 3, 1921

This is without question the most sensational group of registered Holsteins yet offered in a dispersal sale in the West, including the highest 7 day record cow and the highest yearly record cow ever offered on the Pacific Coast.

King Segis Pontiac Jannek Will Sell

The great Jeffries herd sire, King Segis Pontiac Jannek, will be a star attraction in this sale, as he is widely rated as the greatest proven sire ever offered for sale in the state.

40 Daughters of King Segis Pontiac Jannek

are in the sale list, including the wonderful 2 year old that was Grand Champion at Los Angeles, that has milked 99.6 lbs. milk in one day as a first calf junior 2 year old, and is making a yearly record that promises to carry her close to the top in her class.

A Wonderful Group of High Record Cows

The cows are mostly young, and include one with over 38 lbs. butter in 7 days one with over 1,140 lbs. butter in one year, several with 29 to over 30 lbs. butter in 7 days, several well along on year test and going right around the 1,000 lb. mark, and remember that the DAUGHTERS OF KING SEGIS PONTIAC JANNEK ARE OUT OF SUCH DAMS AS THESE!

Every animal positively guaranteed to be a breeder; every animal over six months old tuberculin tested and sold subject to retest by the buyer.

CATALOG FREE ON REQUEST

Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneer: Col. Ben A. Rhoades, Los Angeles

DISPERSAL SALE

60 Registered Guernseys 60

Revada Ranch, Yountville, Cal.

Thursday, January 20, 1921

This is the first public dispersal sale of a major herd of registered Guernseys ever held in California, and provides a rare opportunity for the purchase of highly bred individuals of the breed.

This is the herd assembled by its former owner, Mr. Bert Nixon, without stint of trouble or expense, but the new owners of the ranch and herd, Mission Land & Cattle Co., have other uses in mind for the ranch and will make a complete dispersal of the Guernsey herd.

Imported Females

The herd includes a number of highly bred imported cows, including daughters of such sires as Governor of the Chene, Raymond of the Preel XIII, Robert's Secret, and others of commanding merit.

Large Percentage of Young Females

The herd is composed largely of young females, heifers and heifer calves, many of which are out of imported dams and by sires of rich and popular breeding.

An Unusual Offering of Bulls

There will be sixteen bulls in the sale, ranging in age from 2 years down to calves, affording such a selection as has never before been offered in this breed in California. Among these are several sons of Itchen Daisy May King of Langwater, who came to head the Revada herd at a price of \$3,000.00, a world's record price for the breed at that time.

Every animal positively guaranteed to be a breeder; every animal over six months old tuberculin tested and sold subject to retest by the buyer, except as announced in the sale ring.

HEADQUARTERS OF SALE will be at Palace Hotel, Napa. Revada Ranch is 9 miles north of Napa. Arrangements will be made for auto busses to meet parties coming in by train at this hotel morning of sale.

CATALOG OF SALE FREE ON REQUEST

Management

California Breeders Sales and Pedigree Company

C. L. HUGHES, Sales Manager, Sacramento, Calif.

Auctioneer: Col. Ben A. Rhoades, Los Angeles

Buy These Shorthorn Bulls

I have for sale at moderate prices 20 well bred, heavy boned red and roan Shorthorn bulls, from 13 to 24 months old, that are just right for top range bulls. Several are Scotch. Also a few yearling heifers. Come and see these bulls, or write for prices.

H. W. Vaughn

Dixon, Cal.

600 Purebred Polands

Sows With Litters Sows Ready to Farrow

Gilts of All Ages Feeders

AT BARGAIN PRICES

Take as many as you like. Lack of room requires us to discontinue our commercial piggery and you can benefit by acting quickly.

Santa Anita Rancho

Anita M. Baldwin, Owner

SANTA ANITA, CAL.

Fortuna Herd Poland Chinas

Special prices on gilts sired by The Californian, either open or bred to The Skipper by The Pilot. Two sisters to Orange Lady, first prize senior gilt at Sacramento. Also some choice weanling boar pigs. Satisfaction assured.

Hugh C. Shinn

Tulare, Cal.

Trewhitt's Big Type Polands

Are the result of careful mating and selection. Size and feeding quality have always been essential features in this herd. Write for prices and information. I can interest you.

W. D. Trewhitt

Hanford, Cal.

Victory Bob, the Greatest Son

of the grand champion Giant Bob heads the Sunland herd of big type Poland Chinas. Some choice young animals of select breeding for sale at all times.

H. A. Johansen

Fresno, Cal.

King's Big Bone Leader

A Grand Champion and the sire of a Grand Champion heads my herd of high class sows. He has sired a high class of pigs. I will sell 35 head of selected sows at public auction in January. Write for prices and information.

Les McCracken

Ripon, Cal.

Eastman Ranch Poland Chinas

Herd headed by Buster Bob, Grand Champion at the strong Los Angeles Live Stock Show. He is the largest junior yearling in the state and is siring some great pigs. Young stock for sale at all times. Satisfaction assured.

H. L. Graham, Mgr.

San Fernando, Cal.

Rhoades & Rhoades

Expert Livestock Auctioneers

Col. Ben A. Rhoades

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Sales conducted in all parts of California and adjoining States

We specialize in sales of

REG. DAIRY CATTLE

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We conduct sales of grade dairy cattle and general farm sales in all sections of California. Absolute satisfaction guaranteed. Forty years of successful sales in California and thousands of satisfied customers.

Write, phone or wire for dates and terms.

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Los Angeles, Cal.

WINSOR RANCH DUROCS

Spring Pigs by and Fall Gilts Bred to
WINSOR'S GIANT ORION

Morris C. Allen, Mgr. **BONITA, CAL.** Carl Woolsey, Hog Dept.

Johnson's Defender Jr.

Heads my herd of carefully selected sows. He should be seen to be appreciated. I can spare a few choice females or young stock either sired by or mated to this good boar. You will be pleased with any purchases made from me.

H. C. WITHEROW

Live Oak, Cal.

Arizona Dairymen Cooperate

By R. N. Davis



THE day of cooperation is here. Cooperation has changed a number of agricultural industries from losing enterprises to profitable businesses and will be a means of saving the dairy industry.

Before the organization of the California Associated Raisin Company the prices received by the raisin growers for their product barely provided them with an existence. The accomplishments of the Raisin Growers Association are so well known that they need not be given here. What is true of the Raisin Growers Association applies equally well to the citrus growers, the walnut growers, the peach growers and other farmers' cooperative market associations of the west coast.

The hog growers of the San Joaquin Valley of California by cooperative marketing of their fat hogs, viz., pooling, grading and selling at auction, made a saving the first year of the organization, of which \$100,000 is considered a very conservative estimate.

The poultry growers of California by cooperation have established a market in the entire country for their product. The Petaluma egg is served for breakfast on the tables of restaurants in New York City and other eastern cities as a fresh product.

Some one may say that it may be easy to organize an industry which is local, but to organize the dairymen of the country is a different proposition and covers too much territory to be practical. It is true a great many of the successful farmers' cooperative associations extend over a small area, but the area covered by many of these associations is by no means small. The California Farm Bureau Marketing Association includes seven counties; the citrus growers include a large part of Southern California, and the Prune Growers Association includes the entire prune area, which extends over a large section along the coast of central California.

The United States department of agriculture, cooperating with different state agricultural colleges and farm bureaus, has been very successful in establishing cooperative purebred bull associations which extend over areas containing several states. So many successful cow testing associations have been organized in different parts of the country that it is not necessary to comment on these.

Most of the cooperative associations referred to above are in the West. For fear that the reader may conclude that only in the West are cooperative associations successful, I shall mention a few of the many successful farmers' cooperative associations in other parts of the country. As long ago as 1914 there were in the state of Wisconsin the following farmers' cooperative associations: 347 creameries, 290 cheese factories, 35 livestock shipping, 5 fruit exchanges, 40 grain elevators, 609 telephone and 200 insurance. There are over 1,500 farmers' companies in Wisconsin. In the point of number and money handled, the dairy enterprises exceed all other cooperative agencies. I am told on what I consider good authority that cooperative grain elevators to a great extent gave the Non-partisan League much of the power which it possesses in the Dakotas at the present time.

Cooperative organizations are operating in every state in the Union. A great many of these associations are not accomplishing as much as they should. Possibly one of the principal reasons for failure of farmers' cooperative associations is the lack of support from the members. This in part may be caused by the method of organization and management. As an illustration, a great many cooperative creameries and cheese factories have been established by promoters in communities where there was not sufficient milk produced to justify a plant. These plants were poorly constructed, sold for a big price and an incompetent man was put in charge. There could not be anything but failure awaiting an institution established under such conditions. A great many of the cooperative creameries established several years ago failed. However, it is safe to say that as large a

percentage, or larger, of the cooperative creameries established during recent years is fully as successful as privately controlled factories.

What has been done by cooperation by the dairymen in other states can be done in Arizona. Because of the present condition of the dairy industry in the state there is possibly not a state in the Union in which it is possible for cooperation to be of as much value to the dairy industry as that of Arizona. Because of the exodus of dairy cattle from the state dairying is now in its infancy in the state. Dairying will again be the principal agricultural industry in the state. In reestablishing dairying in the Salt River Valley there are many things which can best be accomplished through cooperation. The quality of the average cow which was being milked in the Salt River Valley undoubtedly contributed more to the downfall of the industry than any one factor. Had only profitable producing cows been in use in the valley the dairymen would have been making money and would not have been so easily tempted by the possibilities offered by cotton. If dairying is to be a complete success in any section, only good, high producing healthy cows can be used. These cows can best be secured by cooperation among the dairymen, by using their cows collectively from the dairy sections of the country. Small dairymen and those just beginning in the dairy business frequently find the best sires apparently too expensive. As a result such breeders must either be satisfied with mediocre sires, pay a heavy service fee for a good one, or cooperate in the purchase of a sire. The bloodlines and producing ability of the herd must be improved by the use of good sires. Why not cooperate and get a sire with quality and plenty of it?

By organization and cooperation the dairymen may reestablish the dairy industry in the Salt River Valley on a proper basis and they will then have their association ready to organize cow testing associations and cooperative market associations and will be in position to purchase feed and other supplies cooperatively.

Cooperation is the only salvation for the dairy industry of the state. Is there one reason why the dairymen should not cooperate?

MILK AND CREAM SAMPLES FOR CHEMICAL EXAMINATION

Many samples of cream and some samples of milk are constantly received at the chemical laboratory of the state department of agriculture for butterfat testing. These samples are generally sent in by interested concerns or individuals who seek an accurate test by a disinterested party. Experience has shown that many of these samples come in such a condition that results of value cannot be obtained. Therefore, the following rules should be followed when samples of milk or cream are sent to this department for testing, because if they are not, consistent results cannot be obtained.

The milk or cream to be sampled should be well mixed by pouring from one can to another at least three times immediately before the sample is taken.

There should be 60 grams (about two ounces) or more in each sample.

The sample should be sent in a bottle provided with a good tight fitting cork stopper which should be tied in. No paper or cloth should be placed around the stopper. Round bottles with a rather large mouth are excellent for this purpose.

The sample should not be sent in a bottle with a metal screw cap, nor in the ordinary milk bottle with paper cap. These bottles frequently leak and thus cause the test to be unreliable.

A sample of milk should fill the bottle to within about one-eighth of an inch of the stopper.

Two or three drops of formalin (not more) should be added to a sample of milk, and it may well be added to a sample of cream.

Address, to insure prompt delivery, to Official Testing Laboratory, State

Department of Agriculture, Capitol Park, Sacramento, California.

If the percentage of solids in samples of milk or other values are desired, a larger quantity of milk or cream should be sent. If any interested party so desires, he can obtain suitable sample bottles and shipping containers from the department. These rules, of course, are not applicable to samples sent in for bacteriological examination.—C. F. A.

HOGS VS. VEGETABLE OIL

The Market Reporter finds that the price of hogs is affected by the quantity of vegetable oil. There are cottonseed oil, peanut, soy bean, coconut, and innumerable other oils which are either direct substitutes for lard or used to replace it in some form. The use of these vegetables was increased largely during the war because of fat shortage. The annual production of these fats aggregates a billion pounds.

As might be suspected, prices for vegetable oils have declined rapidly within the last two months or so, and the general situation concerning them is uncertain. This uncertainty makes it all the more necessary that the raiser of hogs should keep himself informed as to the basic facts of supplies and prices of these competitors of his products and of the demands of the public for them.

The supply of cottonseed oil on hand is materially larger than last year,

the bureau of census reporting 204,000,000 pounds, compared with 136,000,000 at the same time last year. The amount of peanut oil is apparently no greater, and reports indicate that the supplies of soy bean and coconut oil are less than last year. The bureau of markets reports less than 50,000,000 pounds of lard in cold storage, which is the smallest amount reported since December, 1917.

IMMUNIZATION AGAINST HOG CHOLERA

In dealing with hog cholera the California department of agriculture finds that there is a difference of opinion among veterinarians regarding procedure to prevent the further spread of a given outbreak.

Some hold that by injecting serum alone into the exposed animal it will inhale from the air and eat with the food sufficient virus to produce a permanent immunity. This contention is met by others with the argument that there is a possibility of the animal not inhaling and ingesting sufficient virus to produce an immunity over an extended period. There are others who prefer the single treatment in all exposed animals whether they do or do not show a rise in temperature.

In those already infected it is well to consider the consequences arising from the production of a negative phase when virus is injected. Then again there is the danger that the cells in the body of an infected hog may have become so debilitated by the infection that an injection of serum alone will not save its life.

It has been contended that small pigs are not capable of developing a permanent immunity and only those exposed to cholera should receive serum and six weeks later be given the double treatment. Government experiments demonstrate that small pigs are capable of developing a permanent immunity.

When administering the double treatment to exposed animals they should not show any symptoms of cholera such as a rise in temperature, loss of appetite, cough, or a staggering gait.

The question is frequently asked, "Will anti-hog cholera serum protect a hog exposed to swine plague." This can only be answered by stating that when an exact differentiation can be made between the two diseases this question may be definitely answered. Until then we must content ourselves with weighing and determining the value of arguments founded on theory or certain observations or experiments which do not, as yet, make it possible to state that swine plague is a disease frequently occurring entirely independent of hog cholera.—(S. O'T.)

HIGH PRODUCING GUERNSEY

Little Beauty 2d, owned by Brant Rancho at Owensmouth, is now one of 26 Guernsey cows that have four or more times fulfilled the requirements for the Advanced Register. Little Beauty 2d at 2½ years produced 10,480.13 pounds of milk, 563.20 pounds butterfat; at four years, 10,398.70 pounds milk, with 577.76 pounds butterfat; at five years 7,610.90 pounds milk, with 383.67 pounds fat; at 6½ years, 12,450.50 pounds milk, with 641.32 pounds fat. A two year old daughter of Little Beauty is now producing about 40 pounds of milk daily. She was first prize two year old California state fair, 1920. Warrior of the Rancho, a son of Little Beauty, sold at five months of age for \$1,000.

Manager Noggle of Lilac Ranch, Escondido, writes that he is finding a great demand for Aberdeen-Angus breeding stock. To meet this he has just brought from Yakima, Washington, 12 fashionably bred females and an Enchantress Trojan-Erica bull from the Congdon & Battles herd. He also selected two bred heifers for A. W. Wohlford of Escondido. These are outstanding individuals, one sired by Quality Lad of Rosemere, the other by Barb of Rosemere, and they are the foundation for a pure bred herd. In addition Mr. Noggle picked up at the Portland stock show a two year old cow, Blackbird C. B. 13, to be placed in Lilac show herd next year.



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The men at the head of the great Diamond Bar breeding institution are as interested in the future of the Duroc-Jersey industry as they are in the operation of their own ranch.

For this reason they guarantee every animal sold by them to be precisely as represented and stand ready to make every reasonable adjustment if dissatisfaction should occur.

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Registered spring boars and gilts by the Ace of Pathfinders, Mammoth Sensation Junior, Great Pathfinder and Royal Pathfinder. We have only a limited number of these choice Durocs.

To build up a pure-bred herd that will bring profit and pride, order this trio at \$500: A boar and two unrelated sows, all registered, and sired by the boars mentioned above.

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Has TELESCOPE with magnifying glasses which enable you to see cross on Target quarter of a mile. Pays for itself on the first job of

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Write for description of Level and TELESCOPE, details of money back guarantee; also name and address of our distributor in your section.

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Installations can be made in wells 10 inch or larger. Produce 800 to 4,000 gallons per minute. Ask for Folder No. 4. American Well & Drilling Co., 407 E. 3rd, Los Angeles.

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Engine, Saw, Etc., all complete. From Pittsburgh add 50¢. Ask for Terms. Folder F-1. WITTE ENGINE WORKS 3101 Oakland Avenue Kansas City, Mo. 3101 Empire Building, Pittsburgh, Pa.

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No. 5—GILT bred to a 1920 champion

Every Hog Registered and Guaranteed.

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EVERYTHING GOES INCLUDING GREAT ORION SENSATION JUNIOR

Grand Champion at Tulare, Riverside and Los Angeles 40 Sows and Gilts Bred to the Grand Champion 40 of his best spring pigs

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Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

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Baby Chicks—We have the following varieties of Thoroughbred Baby Chicks every week: White Leghorns, Anconas, R. I. Reds, Fancy Dark R. I. Reds and Barred Rocks. We use only well selected eggs from rigidly culled flocks. BY SPECIAL DELIVERY. This year all chicks are sent by Parcel Post Special Delivery, thus delivering at your door chicks in the best possible condition, and in the shortest length of time. You should send for price list and put your orders in now. Orange County Hatchery, Harold C. Hebard, Prop., Santa Ana, California.

For Sale—One million S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock for spring 1921 delivery. January prices \$5.00 per 25, \$10.00 per 50, \$18.00 per 100. Special prices 500 and 1,000 lots. Safe delivery live vigorous chicks guaranteed. No money in advance; pay on delivery. Order early chicks now and realize big broiler profits. Finest hatchery in the world. Established 1898. **MUST HATCH INCUBATOR CO.**, 438 Seventh Street, Petaluma, Calif.

Baby Chicks from my vigorous heavy laying pure bred S. C. White Leghorns. Males from trapped hens egg records of 250 and over in one year. Also SILVER CAMPINES and Brown Leghorn chicks, eggs and cockerels. T. E. Blake, Oak Knoll Poultry Ranch, Santa Cruz, California.

We Can Supply strong, vigorous chicks guaranteed Tanager Strain from trapped parent stock, 290 egg male birds, 240 and better female birds. These birds will grade up your flock. Price \$20.00 per hundred f. o. b. Seattle. **QUEEN HATCHERY**, Seattle, Washington.

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Santa Cruz Chicks—White, Brown and Buff Leghorns, Anconas, Minorcas, Barred Rocks, Reds, Buff Orpingtons, White Rocks and White Wyandottes. Write for 1921 folder with price list. B. W. Archibald, Soquel, Santa Cruz County, California.

POULTRYMEN — POULTRYMEN
Both the novice and the experienced poultrymen should have a copy of "Poultry for Profit" in order to prevent mistakes commonly made in the poultry business. This cloth bound book of 225 pages and 18 illustrations is written by Jean Koethen a practical authority on all branches of the poultry business in California. Price \$1.00 postpaid. Cultivator Publishing Co., 115½ N. Broadway, Los Angeles.

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Caldwell's Exhibition Quality Reds, bred to lay, choice breeding cockerels. Book order for eggs now. Price \$3 and \$5 per 15, \$12 per 100. Write your wants. Satisfaction guaranteed. T. S. Caldwell, 335-B West Broadway, Glendale, California.

Watch Us Grow—"Quality Chicks." We are now booking orders for the season of 1921. White and Brown Leghorns, R. I. Reds and Barred Rocks. Order early. E. W. Ohlen, Campbell, California.

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Buy Early Chicks—Early hatched chicks are the best always. They are stronger, much easier to raise than late chicks, mature and lay earlier, develop into larger and better birds. We are now booking orders for early hatched chicks. Do not fail to place your order in time for the early hatches. Several varieties from our own breeding pens. Circular sent upon request. Beresford Poultry Farms, San Mateo, California.

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Quality Barred Plymouth Rock and Ferris S. C. White Leghorn guaranteed hatching eggs. Also Barred Plymouth Rock breeding cockerels for sale. We have good stuff at honest value for you this season. **GOLDEN RULE POULTRY FARM**, Porterville, California.

Chicks—Eggs—Hoganized White Leghorns, Brown and Buff Leghorns, Black Minorcas, Rhode Island Reds, Barred Rocks, Anconas, Blue Andalusians. Free circular. Order early. McDonald Poultry Ranch, King Road, San Jose, Calif.

Hatching Eggs from Trapped, Line-bred, pedigreed S. C. White Leghorns, trapped 17 years for high production, vitality and consistency. Best foundation stock on the Coast. Our circular tells you why. Waldeck Ranch, Burbank, Calif.

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Wanted Ten Thousand Good Dairy Cattle to consume our surplus alfalfa hay. Dairy opportunities unexcelled on the Newlands Irrigation Project. Never failing water supply. Adequate storage. Mild climate. Good dairy market. Great variety of crops. Our alfalfa hay unexcelled in feeding value. Supplements not essential. Orders handled: Leasing or feeding contracts available. Address Newlands Project Alfalfa Association, Fallon, Nevada.

Experienced Farmer and Western College Graduate wants to manage ranch, citrus grove, orchard or farm. Twenty years experience in California, Nevada and Arizona. Married, no children. Local references. Address ADD, Cultivator, Los Angeles.

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Registered Berkshire Pigs, either sex at farmers prices—sire Lee's Matomas 2nd—dam Bernice Leader 3rd. LAWRENCE BOWDLE, Hawthorne, California.

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Real Good Berkshires, cholera immune. Frank B. Anderson, Box 724, Sacramento, California.

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Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

Big Type Durocs at Keystone Ranch by Top Sensation 1st, May Rose King, Winsor's Giant Orion. Choice March boars and gilts for sale. E. F. Myers, Lankershim.

Bred Sows and Gilts and young stock. Pathfinder and Great Wonder I Am breeding. Monthly payments if you wish. Derryfield Farm, Capital National Bank Building, Sacramento.

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High Class Durocs—Two fine early litters, 10 each. Dam 2nd in strong class, Owensmouth. See A. V. Austin, Van Nuys, California.

For the Best in Durocs write June Acres Stock Farm, Davis, California.

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Bargains in Polands—600 pure bred Polands—sows, gilts, boars, feeders, must be disposed of to make room. Take one or more at your own price. Santa Anita Rancho, Santa Anita, California.

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Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. Ferguson & McKaig, Orland, California.

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Registered Hampshire Pigs, excellent individuals, prices reasonable. H. G. Ranch, Solvang, California.

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Powerene Is Equal to Gasoline at 5¢ a gallon. Salesmen and agents wanted. Exclusive territory granted. Powerene is guaranteed to be harmless, to remove and prevent carbon, doubling the life of all gasoline motors, saving repairs, adding snap, speed, power. An amount equal to 20 gallons of gasoline sent to any address in the United States, charges prepaid, for \$1.00. W. Porter Barnes, Box 424A32, Santa Rosa, California.

Personal—Wanted, information concerning California ranch or other property which J. Y. Lindsley or P. B. Lindsley owns or has partly paid or exchanged other property for. An elderly couple may live on the place. Please communicate with a sister, Grace P. Lindsley, 118 W. Avenue 55, Los Angeles.

Blasting—Contracts taken anywhere in state for tree hole blasting and planting trees. Satisfaction guaranteed. Special prices on large acreage. Zuhr & Company, Nurserymen and Treeplanters, Santa Rosa, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

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Agriculture—the Mother of Civilization! but who is going to do the work when the hired man quits or the boys go to the city. Don't try to farm so much land that you make life a burden. We have an ideal one man proposition to offer you. Soil and climate where you can grow anything that grows in California. Water piped under high pressure to your door for irrigation and domestic purposes. Good schools and churches in a 100% AMERICAN colony. A limited amount of cleared land for \$200 per acre. **PARADISE RANCHITA**, Paradise, California.

For Sale—55 acres best sandy loam soil, on state highway 1½ mile west Merced, California. All under irrigation. Ideal pump plant. Good house, barn and out-buildings. 13 pure bred Guernsey cattle, 4 extra good young brood mares, 28 acres in alfalfa, 100 tons hay in barn, two 80 ton silos, other things, all farm tools necessary, part cash and terms. For full information write Box 644, Merced, California.

For Sale by Owner—50 acres choice river bottom alfalfa land, gradually changing to prunes, apricots, pears, peaches, vines, etc.; 2½ miles from growing railroad town 30 miles from Fresno, California. No alkali or hardpan, abundance of water. Priced at half value to insure quick sale and half down. Price \$9400. Box S W R, Cultivator, Los Angeles.

For Sale—39½ Acres under government project, all level; 13 acres in good standing alfalfa, family orchard, good barn and other little buildings. Fig trees for 6 acres included. Balance in barley. Can be bought for \$12,000. Half cash, balance on easy terms at 6 per cent. Address Owner, Andrew Peter, Orland, California.

For Sale—60 Acres alfalfa land in good water belt 4 miles from town. About 30 acres cleared, 7 in alfalfa, pumping plant, windmill, house, plenty sheds and corrals. Price \$9,000.00. May exchange for smaller place within 40 miles from Los Angeles in walking distance from school. Address: Box 266, Lancaster, California.

For Sale—55 acres of A-1 land near school and good town, near high school. Water goes with land. 30 acres of this land good for fruit or vines. Nine yearling mules, two good saddle horses. Chas. Hubbard, Riverdale, California.

For Sale—10 acres, 640 Valencias, 800 Fuerte Avocados, 11 room house, garages, water, gas, electricity. West of Charter Oak. Address Owner, Box 56, Charter Oak, California.

For Sale—5-10-20-40 Acre Alfalfa and Dairy Ranches. Under U. S. Government irrigation. Write for full information. Falk & Son, Orland, Glenn County, California.

\$20.00 to \$25.00 Per Acre—Fine level irrigable fruit and alfalfa lands, abundant water, fertile soil, ideal climate, close to railroad. Write Chamber of Commerce, Wilcox, Arizona.

For Sale—20 acre date garden, ¾ mile Indio. Best date growing section Coachella Valley. E. A. Miller, Box 192, Indio, California.

Bargain—10 acres 2-3 yr. Prunes, main irrigating ditch, level land, good road. New house, barn, well. \$500 will handle. P. Detroit, Los Molinos, California.

For Sale—240 acres, very desirable; 200 acres very rich delta suitable for gardening or potato soil. Great bargain. \$250.00 per acre. Box 3, Wasco, Calif.

For Sale—Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

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For Sale—
1 Invinible 8-16 Tractor
2 Waterloo Boy 12-24 Tractors
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1 3-bottom Oliver Tractor Plow
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Some new and some rebuilt; all offered at bargain prices. Terms.
W. L. Cleveland Co.,
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New 10 H. P. F. & M. engine type Z, 60 ft. belt, 4 inch Fresno agitator, pump and all accessories complete at \$550.00. Several other 5, 6, 7, 10, 12, 15 and 20 h. p. engines, different makes and pumps, all in good condition, taken in trade on motor, very reasonable. Write us your wants and get our prices at 1-3 and 1-4 of new unit costs. Acme Pump & Electrical Company, Shafter, California.

For Sale—Rebuilt windmills, tanks, pumps, irrigating pipe fittings, cylinders, rods, valves.

New 1,000 gal. galv. tanks, \$49.25; 2,000, \$69.25. Used material absolutely cheap—good serviceable machinery can be produced for. Also buy. Demmitt Co.'s office. 120 N. Main, Los Angeles.

For Sale—10 ft. SuperJob Drill. Two power lift tractor plows. Tractor double disc harrow. Drag harrow, three walking plows, spring tooth harrow. New and slightly used. See us when in the city. Cheap for cash. ARNOTT & COMPANY, 112 So. Los Angeles Street, Los Angeles.

New Gas Engines For Sale—Have several engines from 6 h. p. to 16 h. p. equipped with oil burner attachment for sale at cost. Installing motors and cannot use. Address Box 685, Cultivator, Los Angeles.

For Sale—Beeman tractor, good condition, run 50 hours. Price reasonable. W. C. Wainmsley, Rivera, California, ¼ mile south on Sanford Road off Telegraph Road.

For Sale—Merry Garden Tractors. Circulars and demonstration free. Dwight E. Smith, L. A. County Agent, 1645 North Normandie Avenue, Los Angeles.

For Sale—Yuba 12-20 Tractor, John Deere two-gang plow, 8-foot Cyclone Harrow, good condition, price right. Ralph Enley, 126 Rose Street, Compton, Phone 915.

For Sale—\$600.00 "18" Holt Caterpillar in good condition. Pehrson Bros., Turlock.

SEEDS AND PLANTS

FOR SALE—POST PAID
Famous Catalina Sweet Spanish Onion Seed
(the sweetest in the world)
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Valencia Sweet Spanish Onion Seed
These seeds are just imported from Spain and are in fine condition to germinate. They can produce four hundred or more sacks per acre. Rich ground not necessary. Best time to plant from September to January to insure big crop. Sample packages 30 cents. Write for price by the pound. Jose Liach, Ventura, California.

Berrydale Berries and Roses—"De Roo's Mary Lewis" New Everbearing Raspberry. The finest, largest and best flavored berry grown. Can ship 500 miles in perfect condition. Plants strong and need no supports. Plants ready for delivery now. Price per 12, \$3.00; 100, \$20.00; 1,000, \$150.00. Sample plant 30 cents, parcel post. Write for catalogue, sent on receipt of 5 cents in stamps. Salesmen wanted. Our salesmen are making good up to \$600.00 per month **BERRYDALE GARDENS**, Dept. D, 1715 Webster Street, San Francisco, California.

Strawberries—1,000,000 plants, leading varieties; 200,000 Cuthbert raspberry; 100,000 Black Cap Tips; 100,000 Loganberry Tips. Order now; low prices. Also 100,000 choice peach seedlings—will graft in plums or prunes on contract for fall delivery 1921. Lafayette Nursery Company, Lafayette, Oregon.

For Sale—Best rooted grape vines of Thompson, Malaga, Emperor, Sultan, Muscat and Fig Trees of Calimyrna, Black Mission, Adriatic and red wonderfruit Pomegranate Trees at cheap price. This stock is growing at Madera, Delano and Cutler. P. O. Box 605, Dinuba, California—S. K. Hahn and Company

Increase Your Potato Yield by planting clean healthy seed. I have some Great Divide seed potatoes of excellent quality at 3 cents. Present crop 200 sacks per acre. Come and see. W. G. Brumund, Cucamonga, California, on Foothill Boulevard.

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Cory Thornless Mammoth—Largest and best blackberry; ripens early; few seeds. Write for descriptive price list. Get plants from William Mortenson, Route A, Box 209, Lodi, California.

Strawberries six months in the year. Plant Everbearers, Superb, Progressive, Americus, \$2.50 per hundred prepaid. Catalogue. Fred Leissler, R. 6, Box 429, Seattle, Washington.

For Sale—Cabbage Plants, Winningstadt variety. Splendid healthy plants, any amount, 75c a thousand. Harold S. Covey, Buena Park, California.

For Sale—Mountain grown strawberry plants. Brandywine \$1.50 and Banner \$2.00 per hundred by mail postpaid. B. Bryan, Camp Baldy, Calif.

Strawberries—Wm. Belt, best among 15 varieties tested. Two dollars per hundred fifteen per thousand. Gervais Nursery, Terra Bella, California.

Pumpkin Seed—Mixed Pumpkin Seed, good germination, 25c per lb. Aurora Seed Mill, Stockton California.

For Sale—Unrooted grape cuttings, fruit trees, rooted grapevines. Burke's Nursery, Lodi, California.

Fine Klondyke and Brandywine plants for sale, \$12.00 per M. L. E. Hall, R. D. No. 2, Box 61, Pasadena, California.

Strawberries—Plant 'em now. Cash Nurseries, Sebastopol.

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Pure Bred Guernsey Bulls at farmers prices. Three are ready for service. Also a number of calves sired by a son of Rex of Rich Nech.

Adohr Stock Farm
Ventura Blvd. near Van Nuys. Phone Van Nuys 119R2. Mail address—Van Nuys, California.

For Sale—Pure-bred Jersey bull, 16 months old. Prize winner at two fairs this fall. \$250.00 if taken now. W. H. ALFRED, Loloita, Humboldt County, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Milbrae Dairy, Milbrae, California.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Wineville, California. E. R. Stalder, owner.

Reg. Shorthorns—Fair Oaks Ranch, Willets, California.

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Again win at California's two greatest shows, Gold Special Sweepstakes for best turkeys at California State Fair, 1920, against sixty-six of the state's best turkeys. Also every first, second and third prize and Gold Special Sweepstakes at Los Angeles Live Stock Show, 1920.

The Gold Nugget strain have continually proved their superiority by winning Gold Special Sweepstakes at every show exhibited in the last six years including six state fairs and all the largest shows in the West.

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Toms and eggs for sale, also a few high class exhibition toms to win in any show. Circular after first of year.

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Turkey Eggs For Sale—To our old customers and many new ones greetings. We are better prepared than ever to take care of you this year. If you wish to launch in the turkey business we have 125 fine Mammoth Bronze hens and 12 lovely toms. And after March 1 we will be able to furnish you about 2,000 eggs per month March, April and May. We guarantee safe delivery and 80 per cent fertility. Price 25 cents each f. o. b. Gardena. 25 per cent cash with order booking orders now. If interested preserve this ad; this is all we are going to say about it. C. P. Emerson, Gardena, California.

Turkeys—"Goldbank"—"Copper King V" strain. Selected Giant Bronze toms. Sired by son of famous "Copper King V." First Prize Yearling, N. B. T. Club Show, Madison Square, N. Y., January, 1919. Bred to 20 lb. hens. Egg orders taken. Prices reasonable. Address: **BRONZE KING MOUNTAIN FARM**, P. O. Box 308, Calistoga, California.

Mammoth Bronze Turkeys, Stafford strain, Eastern stock, beautiful plumage, extra large frame and bone. Money back guarantee. Send for circular. R. M. Dodge & Son, R. D. 2 Box 129, Bakersfield, California. Phone 31F4.

Earl E. Sanders, Modesto, breeder of Mammoth Bronze turkeys and Single Comb White Minorcas, is booking orders for eggs, chicks and breeding stock Route D, Box 1880.

Mammoth White Holland Turkeys for sale—Choice hens and toms from our famous breed of large vigorous turkeys. Earl V. Smith, Loma Vista Ranch, Willets, Calif.

Large Number of Choice Bronze Toms and hens, also geese and herding Collie Dogs. Shipped from St. Helena and San Miguel. John G. Mee, San Miguel.

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Bourbon Red Toms for sale. L. S. Grosse, Scottsdale, Arizona.

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Shorthorn Cattle, Shropshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. W. P. Dwyer and W. S. Gullford, Box C, Butte City, Glenn County, California.

For Sale—Handsone young Togg, Buck, born June 23, 1920; well marked, fawn; disbudded. Sire pure bred Togg, Prince Bismark 988. Dam "Anita" 1/2 Togg, good milker. A. M. Starr, R. D. No. 1 Box 627, Long Beach, California or call at 3404 Grant Street.

For Sale—185 Ewes now lambing, part are half blood Romney, are bred to our State Fair and International Stock Show champion rams, not sheared, farmers prices. Tribble Brothers, Lodi.

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300,000,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book **THE HOMESEAKER** which tells you where this land is and how to acquire it, or send \$2.00 for book direct. The Homeseaker, Dept. M, 336 S. Broadway, Los Angeles, California.

For Sale—Government irrigated lands. Dry farm lands, stock ranches and city property. For information about the United States Government Project at Orland and prices on fruit and alfalfa farms and dairy ranches write to Collier and Leonard, Orland, California, Box 164.

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Now is the Time to Buy Geese for breeding, or to order your eggs. Send for catalog and mating list of our wonderful utility and prize stock of Bronze Turkeys, Geese, Pekin Ducks, Muscovy Ducks, White King Pigeons, Partridge Plymouth Rocks, White Leghorns, White Wyandottes, Guineas, Paradise Valley Poultry Ranch, National City, California.

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Pedigreed Flemish Giants—Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

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Nursery Stock—We are offering commercial lots in Bartlett pear trees, at prices which will save you planters big money. Have apple, pears, prunes, cherry, strawberry, berries, etc. NO AGENTS. Try our Mail Order System. Send for planters List. 30 years in business. CARLTON NURSERY COMPANY, CARLTON, OREGON.

Go in To Plant? Can still supply a limited quantity of our bud selected French prune on peach, Bartlett pear on Jap, and broken line of other trees. **BETTER TREES ARE NOT GROWN**. Prices most reasonable. We ship any quantity anywhere on approval. J. F. Miller & Sons, Healdsburg, California.

For Sale—10,000 Valencia one and two year buds; 2,000 Eureka lemon two year buds; Navels, M. S. Pomelos; 1000 Wonderful Pomegranates; 3000 Texas Umbrellas; 100 Kadota figs; 2000 Mission Olives; Sweet and Sour orange seed-bed stock. Southland Nurseries, 1941 East Colorado Street, Pasadena, California.

For Sale—Oregon Plum and Dollar Strawberry plants now ready for delivery, \$2.00 per hundred postpaid. Burbank Thornless Blackberry, \$15.00 per hundred. Walnut Seedlings, 2-3 feet, \$15.00 per hundred, 1-2 feet \$10.00 per hundred. Ben Putnam Nursery, Winters, California.

Royal Apricots, Tuscan, Sims and McClure Clings, Elberta and J. H. Hale Freestone Peaches, Santa Rosa and Beauty Plums, Pear, Apple and Walnut Trees. Grapevines, Berries, etc. Order now; leading varieties scarce. Los Nietos Valley Nursery, Downey, California.

For Sale—Placenta Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. Ketscher's Nursery, 1101 E. 4th St., Santa Ana, California. Phone 572WK

For Sale—80,000 Black Walnut Seedling trees, one year old next spring, ready to graft, at Van Nuys, California. Can leave on ground as long as desired. Get my price. Geo. M. Ketscher, 1101 E. 4th Street, Santa Ana, Phone 572W.

For Sale—Walnut trees, fine stock Eureka grafted on black root. Prices, 4-6 feet in height \$2.00; 6-8 \$2.25; 8-10 \$2.50; 10-12 \$2.75. La Puente Walnut Nursery, Puente, California. Phone 103.

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Seed Bed Stock—Florida sour and California sweet. Nursery 100 Ventura Street. Address Paul B. Magee, R. F. D. No. 2, Box 499, Pasadena.

TREES—TREES—ALFALFA SEED Etc. Full stock—best varieties, now. Write J. L. LAWSON, San Jose, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Grape Vines, orange, lemon, grapefruit trees; citrus seed bed stock. L. A. TUTTLE, R. 1, Box 385, Pasadena.

Peach and Apricot Trees—Leading varieties. C. Truelsen and Son, Hemet, California.

FERTILIZERS

Gypsum and Lime—Price Right Order early for prompt delivery H. B. Matthews, 1010 N. Madison Ave., Pasadena.

SULPHUR AS A FERTILIZER

(Continued from Page 801.)

phur. Top dressing in legumes would be the logical time in the rotation to provide the sulphur when it is known to be deficient in amount.

While the results obtained by Reimer are certain not to be duplicated on certain types of soils in the eastern United States, as for instance on soils deficient in lime, or on acid soils, the results indicate that it is worth while to test out the value of sulphur generally through the country. The fact that the early users of gypsum over a century ago had similar results with soils in Pennsylvania and Virginia should encourage renewed experimentation with sulphur fertilizers, under conditions that preclude confusing one limiting factor with another. As already suggested, the early failures were probably caused by the soils being deficient in phosphorus rather than sulphur in some cases, or deficient in both at once, or at any rate not in sulphur alone.

We know enough now to make our tests crucial as to which element or elements limit production. The only way we can know the facts will be by actual tests. The system of soil fertility upon which our vast expenditure for fertilizers is based should be examined and tested with open, unprejudiced minds. The tests of sulphur-containing fertilizers should be made over wide areas in the eastern United States, for there must be many soils in which sulphur is deficient for optimum nutrition of high sulphur-requiring plants. In many cases where superphosphate has been used with success, it may be the sulphur rather than the phosphorus that is the valuable element. In such cases substi-

tution of the cheaper gypsum might yield as satisfactory results as the more expensive fertilizer.

American agriculture would be vastly benefited by extensive experimentation along the lines suggested, with strictly controlled conditions under which alone can we have a proper interpretation of results. With our expenditure for fertilizers much in excess of a hundred million dollars annually, it is highly important that our fertilizer practice should be put upon a rational basis at the earliest possible moment.

Legal Queries

Louis B. Stanton, attorney, 243 Wilcox building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Chickens Trespassing

What redress has a farmer if his neighbor's chickens come over and scratch up and eat his new seeded barley after he has warned the neighbor of the damage his chickens are doing, to which warning the neighbor pays no attention?—Subscriber, Orland.

It is probable that you would have an action for damages for the value of the crop destroyed by the chickens and if this property is so fenced as to enable you to take advantage of the estray act you can imprison the chickens. The writer has noticed that chicken dinners have quite an effect in this matter.

Title

Can a title be clouded or a deed annulled if after a year's ownership with a guaranteed title it was shown that the party giving the deed only held the ownership in trust for another?—Subscriber, Clearwater.

If the party who executed the deed held a fee simple title to the property and received a good consideration therefor, in the ordinary case, the grantee would not be affected by any secret relations existing between such grantor and some unknown third party. However, the question here is so general that a statement of the specific facts might entirely alter the conclusion.

Mining Claim on School Lands

How can a mining claim be filed on lands that are surveyed in a school section and also located in a United States forest reservation? The ground is non-agricultural.—Subscriber, Eureka.

The rule relative to school lands provides that mineral lands do not pass under grants made for educational purposes, if they are known to be mineral lands at the time when the public surveys are completed and approved, at which time the grants take effect. Lands in forest reservations reserved by the proclamation of the president under acts of congress are appropriated for a special public use and are withdrawn from the public domain, but on proof being made to the secretary of the interior that such lands contain mineral lands, they are excepted from the force and effect of the reservations by act of June 4, 1897. An examination of the particular land in question would, therefore, be necessary to be made before the exact course which the party should adopt may be definitely stated.

DON'T NEGLECT TREE WOUNDS

Neglected tree wounds lead to wood-rot or wood decay which is responsible for an appalling loss of valuable producing trees. Protect pruning cuts or other wounds on your trees with Pabco Pruning Paste. Ask your dealer. Manufactured by the Paraffine Companies, Inc., San Francisco, Calif.—Adv.

VITALITY Needed for Winter Egg Production

During molt and through the process of building new feathers, you'll find vitality low in hens—susceptible to disease with the result of "loafing" in producing eggs.



LACTEIN CONDENSED BUTTERMILK

shows its re-vitalizing power at this time—it puts life, health and productiveness into the hens. Combining as it does, the exact proportion of albumen and protein for eggs and the tonic of Lactic Acid, it means a product of food value and tonic that has no

equal. And it is so easy and economical to feed! Profit from the experience of the largest poultry raisers and make an investment in LACTEIN Condensed Buttermilk TODAY. Stimulate the flock to industry and health when eggs are scarce and the price is good.

You'll find LACTEIN Condensed Buttermilk a LIFE-SAVER for Baby Chicks. It prevents White Diarrhoea and those diseases so fatal to the delicate chicks. Add profit by saving the 50 per cent you ordinarily lose.



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For LACTEIN

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Sometimes it's because of poor housing—poultry house needs an extension, or poor lumber lets in drafts.

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CUSHMAN

All-Purpose Farm Engines

The Cushman is the original light weight, all-purpose farm engine. Unusual care in design; higher standards in all manufacturing processes, perfected balance, refinements in ignition, carburetion and lubrication, enable Cushman Engines to deliver More Power per Pound.

Only 40 to 60 lbs. Per Horsepower

In the Cushman you secure a gasoline motor weighing only 40 to 60 lbs. per horsepower—depending on the size—yet with as much power and even more general efficiency than engines of the ordinary type weighing three or four times as much.



**8 H. P.
Weights
Only
320 lbs.**

The Cushman 4 H. P. weighs only 190 lbs.
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Cushman Motors have extra equipment, such as Throttling Governor, Carburetor, Friction Clutch Pulley and Water Circulating Pump, without extra cost. Write for the Cushman Book on Light Weight Engines.

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When Writing Advertisers Mention California Cultivator

Adventuring With Chickens

By Jean A. Koethen



DEAR DAD: There's nothing like the shelter of your own vine and fig tree, even if the fig tree is only three feet tall and the vine has never borne a grape. And laying out five acres in such a way as not to waste an inch is the most fascinating work I ever did. Fortunately, we do not lack advisers. Half a flock to the north of us lives a man who is caring for 1,200 hens without help. He has not even a wife to help with the baby chicks. Between you and me I think he is proud of his lonely condition. He wouldn't have any woman messing around his incubators and roasting his baby chicks to death—not he. I wanted to go over and get some ideas about the brooder house, but Bob discouraged me. He says Mr. S. has lived alone so long he hardly knows how to talk to a woman. We must have him over to supper some evening. He talks very readily to Bob, however, and has made some valuable suggestions about economizing labor. He says the laying house should be in the center of the space devoted to the chickens, with yards for raising green feed on one side, the feed house on another, or, better still, directly opposite the middle of the long house, and the brooder house off a little to one side. We must plan also for several colony coops for the young stock after they are out of the brooder house.

If we follow the system which is generally followed in this section we must have separate weaning coops for roosters and pullets, for the roosters can be crowded more closely into a coop than is good for the pullets. As the cockerels are sent to market as soon as they weigh a pound and a hen, they do not need much exercise. A coop four feet square answers for 50 cockerels, but the pullets need more coop room and larger yards. We have set apart an acre for colony houses for the pullets. This is in the northeast corner of the place where they will be as little disturbed as possible.

Our bachelor neighbor may be fussy about his incubators, but the way he keeps his pullets doesn't appeal to me at all. He has 50 three months old birds in a little coop not more than four feet square, and when he cleans it I couldn't guess—once a year, maybe, and the last time was Christmas Day. No woman would let her little lady pullets run over such heaps of manure. Their little yard is not more than ten feet square, and there they live, scratching in droppings when they scratch—if they ever do—picking their grain from under droppings. I suppose, with never a clean, soft place to dust themselves, nor a bit of green to peck, outside of what they get in their trough.

Our other neighbor, Mr. S., whose wife has given me a lot of hints, does things much more to my liking. He has more land than we, and his pullets are in quarter acre runs, 50 pullets to a run. Their colony houses are open entirely on one side and partly on another, and they have a perfectly lovely lot of shade. He not only has trees, walnut and apricot, in the runs, but there are vines climbing over the fences. On hot days I notice the pullets all crowd under the vines, wallowing in the soft dirt. It just makes one envy chickens to see them so comfortable.

We are going to follow Mr. S.'s plan as nearly as possible. We cannot allow so much ground to each pullet pen, but then we shall not have so many pullets. Bob thinks we had better not order more than 500 chicks for this first venture. The men he has talked to say if we can raise 400 this year, 200 pullets and 200 cockerels, we shall not be doing so badly. If we try to raise more we may not raise so many. Queer reasoning, isn't it? They say the more chicks you put in a single flock the more you must expect to lose and the more culls there will be. Of course it isn't quite as if we had never raised chicks in brooders, a hundred or so at a time. I can't see, myself, why it should not be just as easy to raise 500 chicks in a lot as 20, provided you keep them warm and give them enough to eat, but Mr. S. laughs at me when I talk that way and says "All the tender-

feet have to have their fling, but they never try it but once." I suppose he means, don't try it again till they have learned the secret, if it is a secret. Why there should be any secret about raising chicks when everybody seems so willing to tell us all he knows and then some, is more than I can see, but Bob says there may be some things nobody can tell us.

Our 200 pullets are to be housed in colony houses eight feet by ten, 40 pullets to a house. That means that we shall need five houses. We are going to seed an acre to alfalfa and set the five houses, one behind another, all fronting south and about 50 feet apart, along one edge of the alfalfa. With the alfalfa on one side, two rows of deciduous fruit trees on the other and a good tight fence to keep the pullets in their own run when they are not wanted in orchard or pasture, I figure we are providing them with range to suit the most fastidious layer. There is room in the houses for rainy days, which we are told are not too numerous in this land of sunshine. They can have a little time every day on the alfalfa after it is started, and can run in the orchard when there is no fruit on the trees. We shall plant some garden between the rows of trees and must be able to control the pullets absolutely.

The laying house can wait till next summer, but we are going to put up the brooder house and the colony houses immediately. The brooder house is modeled after one I saw on the ranch of a very successful poultrywoman. It is all windows on the south, with little runs three feet wide running back from the windows to a built-in hover heated by a hot water pipe. We have visited a good many ranches and talked to a lot of people. Some of them use the big brooder stoves that will keep 500 or 1,000 chicks warm at once. Some use electric hovers, which hover as many as the stoves or more. Others, again, use these hot water hovers and keep only 100 chicks, sometimes only 50, in a run. Every man had his own good reasons for his own system of brooding, and we selected the hot water plan, not because we could find that it was any better, but because it seemed to us a little more nearly fool proof. There seems to be no question that you can be a little more certain all your chicks are warm when there are only 100 in a hunch than when there are 500. Anyway, it looked so to us, and we found some of the men who use these hot water brooders were raising over 90 per cent of the chicks hatched. When we have acquired a little more experience we may want to take out the pipes and partitions and put in a big stove. For the present this seems safest. In all the houses of this type we have seen the chicks do look so delightfully comfortable in their little runs, with a window full of sunshine and a little yard outside to amuse themselves in when they feel like going out. It reminds me of the doll house Jessie and I built under the old apple tree—everything doll size, and every doll happy and comfy.

We are going to fence off the runs before we build the brooder house, for they must be planted with green crops at once. All the poultrymen about us are very particular about having green for their chicks to run on. Some have alfalfa, and some harley, while some plant rape and beets. Perhaps we can get in some early vegetables and leave the stalks and roots for the chicks.

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All Poultry Breeders and Poultry Supply Houses

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No more Spraying
No more Lice
No more Mites

Complete and permanent eradication of Mites and Lice.

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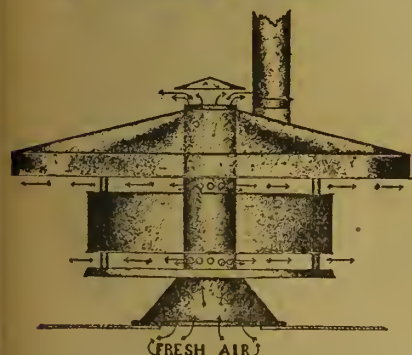
TELLS HOW

"The great trouble with the poultry business has always been that the laying life of a hen was too short" says Henry Trafford, International Poultry Expert and Breeder, for nearly eighteen years Editor of Poultry Success.

The average pullet lays 150 eggs. If kept the second year, she may lay 100 more. Then she goes to market. Yet, it has been scientifically established that every pullet is born or hatched with over one thousand minute egg germs in her system—and will lay them on a highly profitable basis over a period of four to six years' time if given proper care.

How to work to get 1,000 eggs from every hen; how to get pullets laying early; how to make the old hens lay like pullets; how to keep up heavy egg production all through cold winter months when eggs are highest; triple egg production; make slacker hens hustle; \$5 profit from every hen in six winter months. These and many other money making poultry secrets are contained in Mr. Trafford's "1,000 EGG HEN" system of poultry raising, one copy of which will be sent absolutely free to any reader of this paper who keeps six hens or more. Eggs should go to a dollar or more a dozen this winter. This means big profit to the poultry keeper who gets the eggs. Mr. Trafford tells how. If you keep chickens and want them to make money for you, cut out this ad and send it with your name and address to Henry Trafford, Suite 243R, Tyne Bldg., Binghamton, N. Y., and a free copy of "THE 1,000 EGG HEN" will be sent by return mail.—Adv.

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FEED—**COULSON'S EGG FOOD**
FULL PARTICULARS IN OUR FREE BOOK
CHICKENS FROM SHELL TO MARKET
Coulson Co.
PETALUMA, CAL.

We have not decided whether to plant all the runs alike or make them all different. Bob says we can learn more if we try several different things, and he quotes Scripture for his position. "Prove all things; hold fast that which is good."

This is all I can write today. Wish you were here to eat oranges with us. They are green, but we like them. Your loving daughter, Bessie.

CALIFORNIA EGG LAYING CONTEST

By Jean A. Koethen

THE California egg laying contest at Santa Cruz ended its first year November 15, with Bellows Brothers of Lakeside, San Diego County, leading. Their ten pullets established a record of 2,153 eggs for the year, the highest producer laying 257 eggs and ranking fourth in the contest as an individual.

The highest individual record in the contest was that of a hen belonging to D. B. Walls of Petaluma, which laid 297 eggs and is still at it. She was hatched in May, 1919, and from November 15, 1919, to November 15, 1920, laid 20 eggs or more per month. In December, 1919, and January, 1920, she laid 28 eggs. Had the contest continued three days longer she would have reached the 300 egg mark.

Ten Highest Pens

The ten highest pens in the contest were: Bellows Brothers, Lakeside, 2,153 eggs; S. L. Gibson, Santa Cruz, 2,054; D. B. Walls, Petaluma, 2,049; Enterprise Ranch, Chino, 2,045; W. J. Neef, Santa Cruz, 2,009; R. C. Gibson, Newhall, 1,978; B. F. Rose, Santa Cruz, 1,950; G. G. Barker, Santa Cruz, 1,944; W. Wood, Santa Cruz, 1,925; Geo. Gray, Santa Cruz, 1,895.

Highest Individuals

The ten highest individuals in the contest all laid over 250 eggs during the year. Their average as a whole is 263.3 eggs a year. They are hens belonging to D. B. Walls, Petaluma, 297 eggs; P. Pasquale, Inglewood, 268; S. L. Gibson, Santa Cruz, 266; A. M. Webb, Santa Cruz, 262; S. L. Gibson, Santa Cruz, 260; Bellows Brothers, Lakeside, 257; Hollis Peck, Santa Cruz, 256; Hollis Peck, Santa Cruz, 257; P. Pasquale, Inglewood, 256; Enterprise Ranch, Chino, 251; Geo. Gray, Santa Cruz, 251.

High Average

Out of 333 hens entered 119 laid over 200 eggs during the year. The average for the entire flock was 175.3 eggs, or 48 per cent production, for the year.

Contest Ration

The hens in this contest were fed the following ration which was recommended by the poultry division of the university:

Mash; 240 pounds mill run, 180 pounds ground oats, 180 pounds middlings, 100 pounds soy bean meal, 100 pounds meat scrap, 30 pounds charcoal, 4 pounds salt.

Grain; 200 pounds mlo, 200 pounds wheat, 200 pounds cracked corn, 200 pounds barley.

The flock consumed approximately 80 pounds of grain and mash per hen during the year, or a little over 3 pounds of grain and 3 pounds of mash per hen per month. Grain was scattered in the litter, one-third in the morning and two-thirds at night. Mash was before them constantly in hoppers. A crumbly mash was fed at noon. Green feed was before the hens from 9 a. m. till evening, the consumption of greens being approximately 3 pounds per hen per month. Sprouted oats were fed once a day.

New Contest

The second year's contest began November 1 in new buildings provided by the Santa Cruz chamber of commerce at a cost of over \$12,000. This contest is a national one, several entries coming from outside the state. There are 56 entries of ten hens each. The third year's contest will begin October 1, 1921, and will be an international contest with entries from England and other European countries.

Painted buildings and well kept fences bring buyers to see the owner of the farm.



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121 W. Julian Street
San Jose, Calif.

Distance to water below surface of ground _____
Probable distance to water when pumping _____

If water is to be raised above surface of ground, how high? (Length and size of pipeline) _____

Volume of water desired (Gals. per min.) _____
(Inches) _____

If you have pit, give width _____ length _____ depth _____

H.P. of motor or engine if you have that equipment _____

Give total depth of well _____

Inside Diameter of well _____

Is well straight and true? _____

Is electric power available? _____

Name _____

Address _____

Rural Route No. _____

(so-PS) Box _____

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Los Angeles Markets

Los Angeles, December 15, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 54 cents.
Dec. 8 9 10 11 13 14
'20 ... 55 55 .. 55 54 54

CHEESE

Brokers' prices:
California flats, 27@30.

EGGS

Fresh extras (case included): Produce Exchange closing price 75 per dozen case count, Produce Exchange closing price 73 per dozen; pullets, Produce Exchange closing price 69 per dozen; pewee pullets, 60.
Dairy Exchange price last week on extras:
Dec. 8 9 10 11 13 14
'20 ... 75 75 .. 75 76 75

POULTRY

Price to producers: Hens, lt., 29; heavy 30; colored, 33; broilers, 40@47; roasters, 31; old roosters, 14; fryers, 40; ducks, old, 23; ducklings, Pekin, 3½ up, 25@28; others 23; geese, 25; turkeys, live, young tom, 45; dr., 50; old, live, 40; dr., 41; hens, live, 45; dr., 50; squabs, 45@47.
Belgian hares, live, 16@21; old, 9.

LIVESTOCK

Los Angeles, Dec. 15—Weighed and delivered off cars without food or water:
Hogs (hard grain): 125 to 175 lbs., 11.00; 175 to 225 lbs., 11.50.
Cattle (on foot, gross weight): Steers, good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.
Sheep—Ewes, 7.50@8.00; lambs, 12.50@18.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, December 14, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies heavy, market unsettled. Stocktons: Burbanks 1.75@2.00 according to quality. Idahos: Russets mostly 1.85@2.00. Local: Mostly 90@1.00 per lug. Sweets, 1.10@1.35.

Onions: Supplies heavy, market dull. Stockton: Whites, 1.50@1.65; Browns mostly 1.10@1.25 per 100 lbs. sacked; Yellows, 1.00@1.25 cwt.
Garlic, lb., 15@17.

VEGETABLES

These are the actual prices obtained December 14, by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Kv. Wonder, Refugee mostly 14@18; Limas, 9@11.

Beets: Doz., 35@45; sk., 1.75@2.00.

Cabbage: Supplies heavy, market slow, wide range in quality. Best mostly 1@1½ per lb.; per field crate, mostly 75@1.00; few best, 1.10.

Carrots: Doz., 25@35; sack, 1.00@1.25. Cauliflower: Supply liberal, field cr., 1.75@2.25; low as 1.50.

Celery: Cr., 2.00@2.50; Northern cr., 3.25@3.75.

Cucumber: Market firm; local, best, lug, 3.00@3.25 lug.

Egg Plant: Lb., 7@9.

Lettuce: Field crate, best, 60@85; few high as 1.00.

Peas: Local lb., 10@12; low as 8.

Peppers: Bells and Chills, lb., 6@7.

Rhubarb: Crimson Winter, best bx., 80@1.00.

Squash: Local Hubbard, lb., 1½@2.

Tomatoes: Local lugs, mostly 1.00@1.50 lug; best high as 2.00.

Turnips: Per doz., 25@35; sk., 1.25@1.50.

DECIDUOUS FRUITS

These are the actual prices obtained December 14, by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal, movement slow, market steady. Californias: Bushel boxes Bellefleurs, fancy, 4 tier mostly 2.00@2.10; 4½ tier 1.65@1.75; Jonathans fancy, 3.00@3.25; Delicious fancy 3.25@3.75. Idahos and Utahs: Loose Jonathans and Winesaps mostly 5@6 per lb.; Ganos and Ben Davis mostly 4½ tier 5½ per lb.; Oregon and Washingtons: Bushel boxes, extra fancy Jonathans and Spitzenburgs mostly 3.00@3.25.

Bananas: Lb., 10½@11.

Cranberries: Bbl., Late Howe, 22.00@22.50; Oregon, bx., 5.50@6.00.

Grapes: Emperor, Cornichon, 9@11; poorer low as 7, best high as 16.

Pears: Bartlett's, northern, lb., 9@12; best, 12@14.

Persimmons: Lb., 10@18.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.75@3.00; special packed brands, 3.50@4.00; Arizonas, 4.00@4.50 packed box.
Lemons: Market dull, wide range in prices: Local stock: Packed, box, 1.25@2.00; loose, 1.00@1.25; lug mostly 40@50.
Oranges: Supplies increasing, market dull. Valencias, supplies practically cleaned up. Navels, new crop, local packed, mostly 3.00@3.75; small sizes low as 2.50, special brands mostly 3.50@4.75. Soft run 1.25@2.00 loose.

HONEY

Movement slow. Carloads f. o. b. usual terms: per lb. 5-gallon cans White Orange and White Sage, 16½@20; extra Light Amber Orange and Sage, 19; Light Amber Orange, 18½; Light Amber Sage, 12@18½; Light Amber Alfalfa, 11@17. Beeswax: sacked, less than car lots 40@42 per lb. Prices given represent quotations; practically no sales being made. Wide range due to extremely unsettled market conditions; low prices are considered possible in near future.

NUTS

California Walnut Growers' Association announces prices in 1920 walnuts: No. 1, soft shell, 2½; No. 2, 18½; Budded, 25½; standard budded, 22½ per lb.

GRAIN AND FEEDS

Grain Exch. prices bid December 14:
Milo: Carlots, 1.60@1.77½.
Corn: Bulk, No. 2, 2.00.
Barley: 1.48½.

HAY

Alfalfa Growers of California, report under date of December 15:
The market continued steady throughout the week.

Stocks remaining are mostly in the hands of growers.

There were 375 tons received on the tracks in Los Angeles the week ending December 11, with 40 tons left over as against 1,400 tons the week before.

Rabbit alfalfa, 41.00
No. 1 dairy alfalfa, 30.00
Standard dairy, 27.00
Stock alfalfa, 23.00

Quotations by Nichols Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:

Tame Oats, 22.00@26.00
Barley, 18.00@25.00
Alfalfa, 22.00@30.00
Barley straw, 6.00@10.00

San Francisco Markets

San Francisco, December 14, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations:

Extras, 51

Dairy Exchange prices extras this week and year ago:

Dec. 7 8 9 10 11 13

'20 ... 52 51 51 51½ .. 51

'19 ... 67½ 68 68 .. 68

CHEESE

Dairy Exchange quotations:

Jack, full cream, 21@26

Jack, half skimmed, 17@20

Ore. Y. A., 35

Cal. Flats, 27

Oregon Trips, 29½

Cal. Y. A., 34½

EGGS

The prices paid by wholesalers to producers are eight per cent less.

Dairy Exchange quotations, dozen including cases:

Extras, 86½

Extra Pullets, 75

Undersized, 71

Dairy Exchange prices, extras this week and year ago:

Dec. 7 8 9 10 11 13

'20 ... 87½ 86 83 86 .. 86½

'19 ... 87½ 85 80 .. 78

POULTRY

Wholesale prices are:

Broilers, 15 pounds per dozen, 60@65.

Colored fryers—2 to 3 lbs., 37@38.

Colored young roosters (smooth), 3 to 4 lbs., 32@33.

Old roosters (colored), 20@30; market firm.

Leghorns, young, 15 lbs. to 24 lbs. per dozen, 32@33.

Leghorn hens, 3 lbs., 32@33; under, 25; Eastern, 31@35.

Large colored hens, 33@35.

Young Pekin ducks, 30; old ducks, 23@25; young geese, 27@30; market easy.

Live Belgian hare, 23@25; dressed, 28@30.

Turkeys: Dr., 52@57; live, 45@47.

Squabs: Large, 65@70 per lb.

Pigeons: 3.00@4.00 per dozen; market firm.

LIVESTOCK

Western Meat Company prices are:
Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 9½@10½; second quality, 8½@9; thin, 6@6½.

Cows and heifers, No. 1, 7½@8; second quality, 6@7; thin, 3@4.

Calves: Light weight, 9½@10; medium, 8@9; heavy, 7½@8.

Lambs: Milk, 9½@10½; yearling, 8@8½.

Sheep: Wethers, 7½@8; ewes, 4@5.

Hogs: Weighing 100 to 150 lbs., 10½; 150 to 225 lbs., 12½; 225 to 300 lbs., 11; 300 to 400 lbs., 10.

California Farm Bureau Marketing Association reports sales:

No. Hogs Av. Wt. Dock Price

Tulare, December 7, 1920

6 216 ... 11.95

80 212 ... 11.95

84 190 ... 11.95

78 216 20 11.90

84 199 ... 11.75

90 172 ... 11.30

19 276 495 8.70

4 165 ... 8.70

1 440 ... 8.70

Four cars, 41 consignors.

Visalia, December 8, 1920

8 178 ... 11.80

70 201 ... 11.80

88 196 ... 11.35

76 229 ... 11.25

11 300 ... 10.75

57 149 ... 10.75

14 152 ... 10.75

2 160 ... 10.75

4 200 ... 8.75

13 233 220 8.75

Four cars, 26 consignors.

Hanford, December 9, 1920

57 225 20 11.00

64 205 80 10.80

88 190 ... 10.85

59 216 ... 10.70

26 110 ... 10.05

6 131 ... 10.25

108 156 ... 10.00

7 331 ... 10.00

20 337 400 9.65

6 525 1265 8.80

Five cars 39 consignors.

Corcoran, December 10, 1920

90 197 ... 10.75

90 204 ... 10.75

18 234 ... 9.85

2 305 ... 9.35

13 148 ... 8.85

18 316 200 7.85

Three cars, 17 consignors.

McFarland, December 11, 1920

83 207 ... 11.10

80 189 ... 11.05

80 177 ... 11.00

72 217 ... 11.00

89 191 ... 10.90

84 207 ... 10.85

92 151 ... 10.85

45 212 ... 10.80

24 329 ... 8.75

8 115 ... 8.35

27 312 ... 7.75

Eight cars, 40 consignors.

Total for Week

Twenty-four cars, 163 consignors, total amount \$46,970.21.

POTATOES AND ONIONS

Wholesale prices on street:

Wholesale prices on street:

River, 1.60@1.75 for No. 1; do, Oregon

Burbanks, 2.60@2.75; Salinas, 3.50; Idaho

Gems, 2.60@2.75 Sweet potatoes, 3¼@3½ lb.

Onions: Yellow, 65@85 per cental; Australian brown, 65@85; do, white 1.50@1.75.

Garlic: New, 8@9.

VEGETABLES

Wholesale selling price:

Beans: Lb., garden, 10@12; Italian, 8@10; Limas, 12@13.

Beets: Sk., 1.00@1.25.

Brussel Sprouts: 5@7 lb.

Carrots: 1.00@1.25 sk.

Cauliflower: Doz., 1.00.

Cucumbers: Cr., 2.50@3.00; hothouse, 3.25.

Cabbage: Lb., 1.

Celery: Cr., 1.50@2.00; doz., 15@25.

Corn: Sk., 2.00@2.50; fy., 3.00@3.50.

Egg Plant: Southern, 8@10 lb.

Lettuce: Cr., 1.75@2.00.

Onions: Green, per bx., 75@1.00.

Peas: Lb., 12½@15; fy., 15@20.

Peppers: Lug bx., Stockton Bells, 75@1.00.

Chilli, lb., 5@6.

Rhubarb: 2.50@2.75 lug.

Spinach: Lb., 6.

Squash: Hubbard, 75@1.00 sk.; Marrowfat, sk., 75@1.00.

Tomatoes: Bx. fy., 1.50@1.75.

Turnips: Sk., 1.00@1.25.

FRESH FRUITS

Apples: Bellefleur, 1.20@1.40; choice, 1.10@1.25; C grade, 75@1.00; Spitzenberg, 1.85@2.65; Jonathan, 2.50@2.75; Hoover, 1.50@2.00; Newton, 3¼ tier, 2.25@2.50; 4 tier, 2.15@2.25; King David, 1.75@2.50.

Avocado: Case, 5.50@6.00; small black, 1.00.

Bananas: Lb., 10½@11; red, 12.

Cranberries: Per bbl., 25.00. Oregon 5.50@6.00 box.

Grapes: Cr., 3.00@3.50.

Olives: Lb., 10@12½.

Pears: Winter Nellis, 3.00@3.75.

Persimmons: Bx., 1.50@2.00.

Pineapples: Doz., 5.00@6.00.

Pomegranates: 1.50@1.75 per peach box; 2.00@2.50 per half orange box.

Quinces: Bx., 1.50@2.00.

DRIED FRUITS

California Associated Raisin Co. prices: Muscats: Package seeded, Sun Maid, 5 pound boxes, 20½ cents a pound.

Loose, 25 pound boxes, one crown, re-cleaned and floated, 20½ cents a pound; two crown, re-cleaned and floated, 23¼

cents a pound; three crown, re-cleaned and floated, 24 cents a pound.

Layers, three crown flat pack, 20 pound boxes, \$4.40 box; ten pound boxes, \$2.40; five pound boxes, \$1.30 box.

Cluster, four crown pack, 20 pound boxes, \$4.70; ten pound boxes, \$2.55 box; five pound boxes, \$1.40 box.

Six crown flat pack, 20 pound boxes, \$5.50 box; ten pound boxes, \$2.95 box; five pound boxes, \$1.60.

Sun Maid, 20 15-ounce net cartons to box, \$5.20 box.

Sun Maid, 12 two-pound cartons to box, \$6 box.

Sun Maid, Imperial, four five-pound cartons to box, \$6 box.

Vineyard run, Sun Maid, 100 pound boxes, \$21 box (strapping extra, 19 cents per box).

Thompson Seedless, Sun Maid, re-cleaned, 25 pound boxes, 21 cents pound; 48 16-ounce packages, 21½ cents package.

Sultanas, Sun Maid, re-cleaned, 25 pound boxes, 20½ cents pound.

Figs: Fancy black, 25-lb. boxes, 12 lb.; extra choice black, 25-lb. boxes, 10 lb.; choice black, 25-lb. boxes, 9 lb.; fancy white, 25-lb. boxes, 18 lb.; extra choice white, 25-lb. boxes, 1 lb.

Prunes: 30-40s, 25-lb. boxes, 19 lb.; 40-50s, do, 17 lb

Oranges, 248; lemons, 1; total, 249. To same date last season: Oranges, 226; lemons, 2; total, 228.

AT THE AUCTIONS

December 8
New York: 7 or., 1 lem. Nav. 3.95-6.95, lem. 2.85-3.45.
Boston: 3 or., 1 lem. Nav. 2.55-4.90, lem. 2.80-3.20.
Cleveland: 6 or. Nav. 2.95-5.75, lem. 1.20-1.80.
Pittsburg: 1 or., 1 lem. Nav. 1.65-2.65, lem. 3.00-3.05.
Philadelphia: 1 lem. 1.45-2.15.
Cincinnati: 1 or., 1 lem. Nav. 5.90, lem. 1.85-2.40.
St. Louis: 1 Nav. 4.31.
December 9
New York: 11 or., 2 lem. Nav. 2.25-6.90, lem. 2.55-3.70.
Boston: 2 or., 1 lem. Nav. 3.70-5.60, lem. 3.05-3.45.
December 13
New York: 20 or., 5 lem. Nav. 2.25-6.90, lem. 2.65-3.50.
Boston: 17 or., 2 lem. Nav. 2.30-4.90, lem. 2.65-3.45.
Cleveland: 6 Nav. 2.80-5.50.
Philadelphia: 1 or., 1 lem. Nav. 5.20, lem. 1.25-1.50.
St. Louis: 2 or., 1 lem. Nav. 4.55-4.85, lem. 3.00
December 14
New York: 12 or., 2 lem. Nav. 2-10-5.20, lem. 2.55-3.35.
Boston: 8 or., 1 lem. Nav. 3.05-4.95, lem. 2.45-3.30.
Pittsburg: 5 Nav. 2.80-5.10.
St. Louis: 3 Nav. 3.05-4.45.

Veterinary

Heifer Thin

I have a Jersey heifer coming in with third calf in about three weeks. She is poor in flesh now and am afraid that she won't give much milk when she does come in. She will not eat bran, dried beet pulp nor pumpkins. I have the finest kind of alfalfa hay and she doesn't seem to eat much of that. What can I feed her to fatten her up?—Subscriber, Anaheim.

It will be practically impossible to get your heifer in good flesh before freshening, particularly since she will not eat well. It is not desirable at this time to attempt to feed her too heavily, as it might throw her off her feed and put her back farther than ever. I would suggest that you give her a good dose of raw linseed oil, which might bring her on to her feed. I would suggest that you give her about a quart as a drench. Follow this up by a little bran mash to which you might add some beet pulp or some rolled barley. Feed this together with a little alfalfa hay and ensilage if you have it. If you can pasture her out on some green grass or cut some and take it in to her. As soon as she freshens it would be well to feed her lightly at first and then bring her on to feed with such feeds as bran, beet pulp, pumpkins, coconut meal, etc. If you find that she does not put on flesh readily, I would suggest that you have her tested for tuberculosis. Tuberculosis often causes animals to remain thin and sometimes causes them to lose their appetite as well.—G. E. G.

Dog Has Skin Disease

Our dog has some skin disease, evidently. Whatever it is, it irritates him greatly. He scratches himself and seems restless and the hair is falling out. Has been thus afflicted for a long time but gets no better. What can be done for him?—Subscriber.

This may be one of three different things, according to the information you have given. It may be one of two kinds of mange, or it may be eczema. It is possible that it may be a combination of mange and eczema. The most common form of mange is the so-called sarcoptic and is caused by a minute organism. This burrows into the skin, causing intense itching. This irritates the skin so much that the animal scratches the skin, irritating it more. This often causes eczema, which may be of constitutional origin if there is any tendency towards eczema. The best treatment for this

kind of mange is to wash the dog thoroughly in order to get the skin well softened. A mixture of lard and sulphur in the proportions of one teaspoon of sulphur to a tablespoon of lard, should then be applied and thoroughly rubbed into the skin on every part of the body. It is sometimes desirable to wash the animal again in the morning, particularly if it is a house dog. The organisms will probably be destroyed by the fifth or sixth day, but in order to make sure, the treatment should be continued for the full ten days. The other type of mange is not so common but is extremely difficult to get rid of. This is called follicular mange. This is somewhat similar to the above mentioned type of mange. It can sometimes be transmitted to human beings. It is believed that the parasite present in this case is a mold fungus which attaches itself to the roots of the hair. This causes the hair to drop out badly. It is usually somewhat feverish around the affected parts. This disease spreads rapidly and gives off an offensive odor. There is not a great deal of itching ordinarily, so from what you mention of the dog scratching him-

self almost continually, it would indicate that the former mentioned mange was probably the difficulty in your case. With this latter mange, after the disease has made a great deal of progress it usually takes six or eight months to cure it, and unless the dog is an exceedingly valuable one it would perhaps be best to put him out of the way. Anything that may cause scratching or undue heat or moisture may be local cases of eczema. Often errors in feeding will bring out eczema on a dog. If he has been getting too great a percentage of starchy foods it would be well to reduce them and add more meat to the diet. The indications are that your dog is troubled with sarcoptic eczema and the curing of this by the use of the sulphur and lard treatment will probably do away with the inflammation and the subsequent cessation of any eczema, if it may be present. A dog in good health and under normal conditions is rarely troubled with eczema.—G. E. G.

The Central California Wool Growers have reduced wages of sheep herders and shearers from \$90 to \$70 per month.

DEFINING THE ANXIETY

"What do you think is the cause of unrest?"

"Haven't noticed any around this place," rejoined Farmer Cornrossel. "The resting part takes care of itself. What I am worried about is unwork."

INTENSELY OCCUPIED

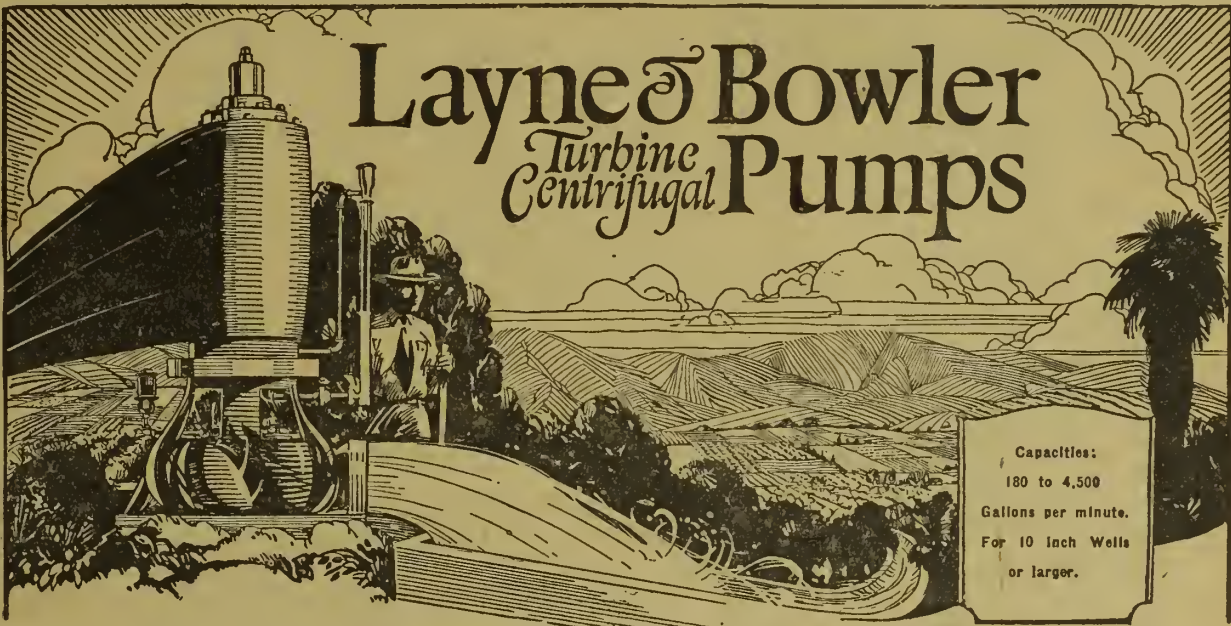
I try not to loiter nor shirk,
Yet this my intention doth balk;
I am often too busy to work,
But never too busy to talk!

WEATHER REPORT

San Francisco, Cal., December 11, 1920.					
Stations		Wk. Season		Norm. Max. Min.	
Eureka		3.28	18.06	12.20	58 36
Red Bluff		1.63	11.27	7.04	54 36
Sacramento		1.62	7.00	4.71	54 38
San Francisco		2.36	7.43	5.25	56 44
San Jose		1.13	5.35	3.97	66 32
Fresno		.49	2.58	2.48	62 34
San Luis Obispo		2.00	4.98	4.17	62 32
Los Angeles		.24	2.25	2.95	70 46
San Diego		.02	.50	1.74	66 44
Snow on ground at Summit 75.0 inches.					

INSURE YOUR TREES AGAINST INFECTION

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Southwest Cotton Co., Avondale, Ariz.	32	Bicknell Estate, Montebello	3
R. P. Davie, Marinette, Ariz.	31	People's Water Co., Palms	3
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SPERRY FLOUR CO.
STOCKTON, CALIFORNIA

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A good
thing to
remember!

More and more poultrymen have begun to see the light on this color question. The less you care about color or texture and the more you care about feed value—the better feed you will buy, the better your hens will like it, and the more eggs you will get. That's a simple, straight formula—and a mighty good thing to remember.

THERE'S one test—and only one test—of feed. And that's *feed value*. No poultryman—no matter how seasoned he is—can tell the quality of a feed simply by *looking* at it or *feeling* it. Because a feed can be light or dark, fine or coarse, and yet not vary one-tenth of one per cent in actual feeding value.

Is there any difference in the feeding value of yellow, white or mixed corn? No! Is there any difference in the feeding value of white, gray or red oats? No! Is there any difference in the feeding value of white or red wheat? No! The same thing applies to meat meals, oilcake meals, charcoal and other ingredients that go into the blending of a proprietary feed.

That's why color means little, if anything. Texture means little, if anything. Feed value means *everything*! Feed value, after all, is the thing you pay for.

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If you want to see why SURELAY is a high-grade *uniform* feed that will make your hens pay by making them lay—send for the new edition of our booklet, "Makes Hens Happy." Your copy is waiting for you—and it's free. Simply fill in the coupon and mail today!

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CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

Los Angeles

An Illustrated Weekly for the Rural Home and Ranch

San Francisco

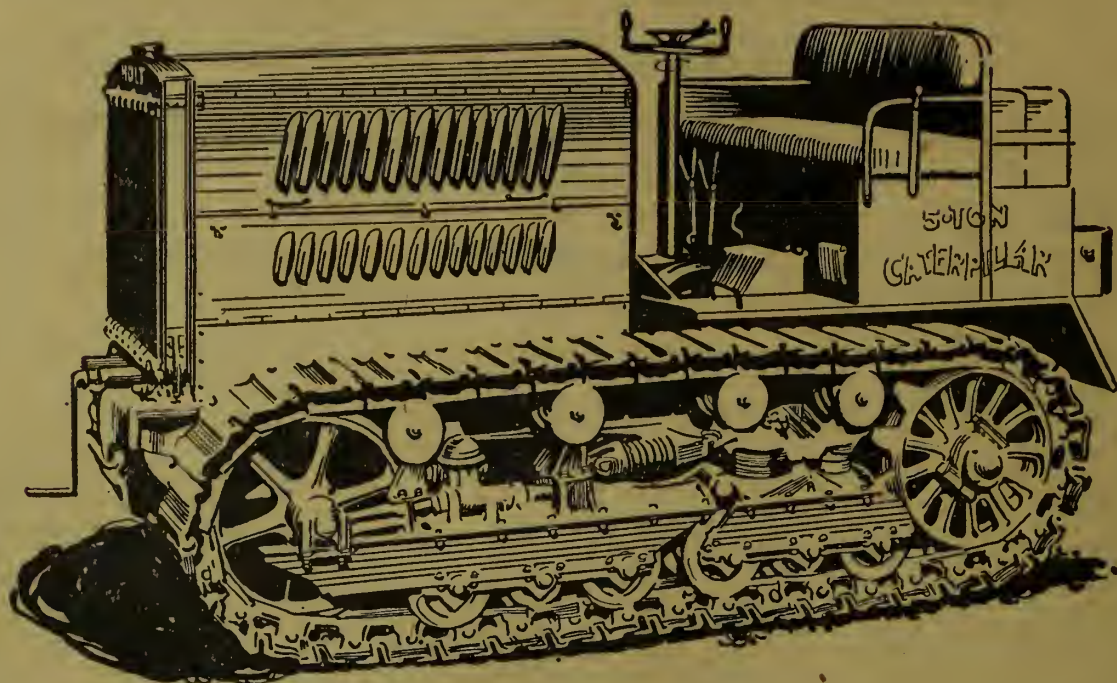
Vol. LV

December 25, 1920

No. 26



The Famous Five-Ton Caterpillar Tractor



**Now for the first time available for immediate
delivery in this territory**

Here at last is the tractor you've waited for—you who have wanted a tractor of smaller size and less power than "Caterpillar" 75 and 45 Tractors—you who have read of this tractor's achievements in France—you who have heard of this tractor's wonderful power, stamina and versatility, from the boys who came back from "over there." It's the famous 5-Ton "Caterpillar" Tractor. During the war the Government's requirements took our full output. Since then, accumulated domestic and foreign orders have had to be taken care of. Now for the first time we are privileged to offer the 5-Ton in this territory. But even now—for a time at least—the supply is limited. You must act quickly to secure immediate or early delivery. Write, phone, wire or call at the nearest Holt office without delay.

Compare, but don't confuse the "Caterpillar" 5-ton tractor with other tractors. It is built to the standard of performance, not of price. It was designed by Holt engineers, in conjunction with other foremost automotive engineering talent of the world at our government's disposal during the war. It has successfully met the most severe requirements that any machine has ever been subjected to, on two continents, in all classes of work—farm work, contracting, freighting. New York City recently ordered 50 of the "5 Tons" to solve its snow-disposal problem. There's not an experimental or untried feature in its entire construction. It has proved—conclusively proved—its superior merit. And the result is found in its unfailing, dependable, economical and trouble-free performance. That means farm work done quickly, properly, without delay—and at lowest cost per horsepower-hour. The purchase of a "Caterpillar" Tractor is an investment—safe, sure and productive of liberal returns.



**The
HOLT**

Manufacturing Company
Stockton, California Peoria, Illinois

California Cultivator

Vol. LV, No. 26

Los Angeles, December 25, 1920

One Dollar Yearly

Twelve Million Acres Under Irrigation

WHEN Theodore Roosevelt took a strong hand in the matter of the Panama Canal there was appreciation of the fact that America had taken

hold of a big proposition. It might cost a hundred million, but America was big enough and could do it. It did cost the hundred million—perhaps several times that—but we did it.

Now comes California with a big suggestion. As a state, and without any thought of government aid, it is suggested that we are able at the cost of a billion of dollars to wonderfully

increase our productive ability. The other day the floods came down the sides of the Sierra Nevada and did untold damage. Thousands of acres of rice fields were flooded at harvest time and many a farmer lost the savings of a lifetime. Another midsummer will see need of those same flood waters for purposes of navigation and for watering the thirsty land. And we are asking, "Why is this winter's destruction and this summer's lack continued from year to year?" Engineers say it need not be, and they are dreaming of stored floods which will mean vast addition to comfort and to wealth. Hundreds of storage possibilities have been outlined, and there are doubtless others not yet known. It required much investigation and many dreams on the part of many of the far seers to bring the matter to a point where "practical" human beings would stop long enough to consider it.

At first thought it seems impossible that California should attempt to finance so immense a project as one which will cost a billion of dollars, or, to be more exact, \$750,000,000, which is now hoped as the limit cost of carrying out the great system of storage reservoirs which will supply an everlasting source of power, rivers with water enough to make them navigable all the summer through, and canals with water for irrigation purposes which will mean millions of additional wealth in crops. But the plans as laid down by Robert B. Marshall, which have been referred to during the past two years, are now sufficiently complete that an association of representative Californians has been organized to push them to completion, or, at least, the present association hopes to conduct an educational campaign which will secure through state or other activities the operating organization. The plan is that the accomplishment of this great project shall be in the hands of all the people. The name of the new organization is The California State Irrigation Association. It has established headquarters in Sacramento and the officers are: Hon. C. A. Barlow, president; J. F. Mallon, vice-president and secretary; Hon. Alden Anderson, treasurer; E. O. McCormick and Hon. L. L. Dennett, others members of the executive committee; with Col. R. B. Marshall, consulting engineer, and L. C. Davidson, manager.—C. B. M.

Here is an outline of the Marshall plan as laid down by the association:

California water and power resources under control of state.

Complete utilization of all reservoir sites, both in the mountains and along the foothills.

Grand canal system to distribute flow from Sacramento and San Joaquin Valley streams.

Lock and draw dam to be constructed across Carquinez Straits to prevent the encroachment of salt water into the valley of California. This control of the water will forever protect the delta lands and make it unnecessary to build or maintain levees. Withholding water in reservoir sites in mountains and foothills will obviate hazard from floods.

Ample irrigation for five great valleys of California—Sacramento, San Joaquin, Santa Clara, Concord and Livermore.

San Francisco Bay region to receive ample water. Four times as much water as present aqueduct now delivers will be provided for Los Angeles from Kern River.

Surplus water from Klamath River basin is to be diverted through the Siskiyou into upper Sacramento River to augment supply.

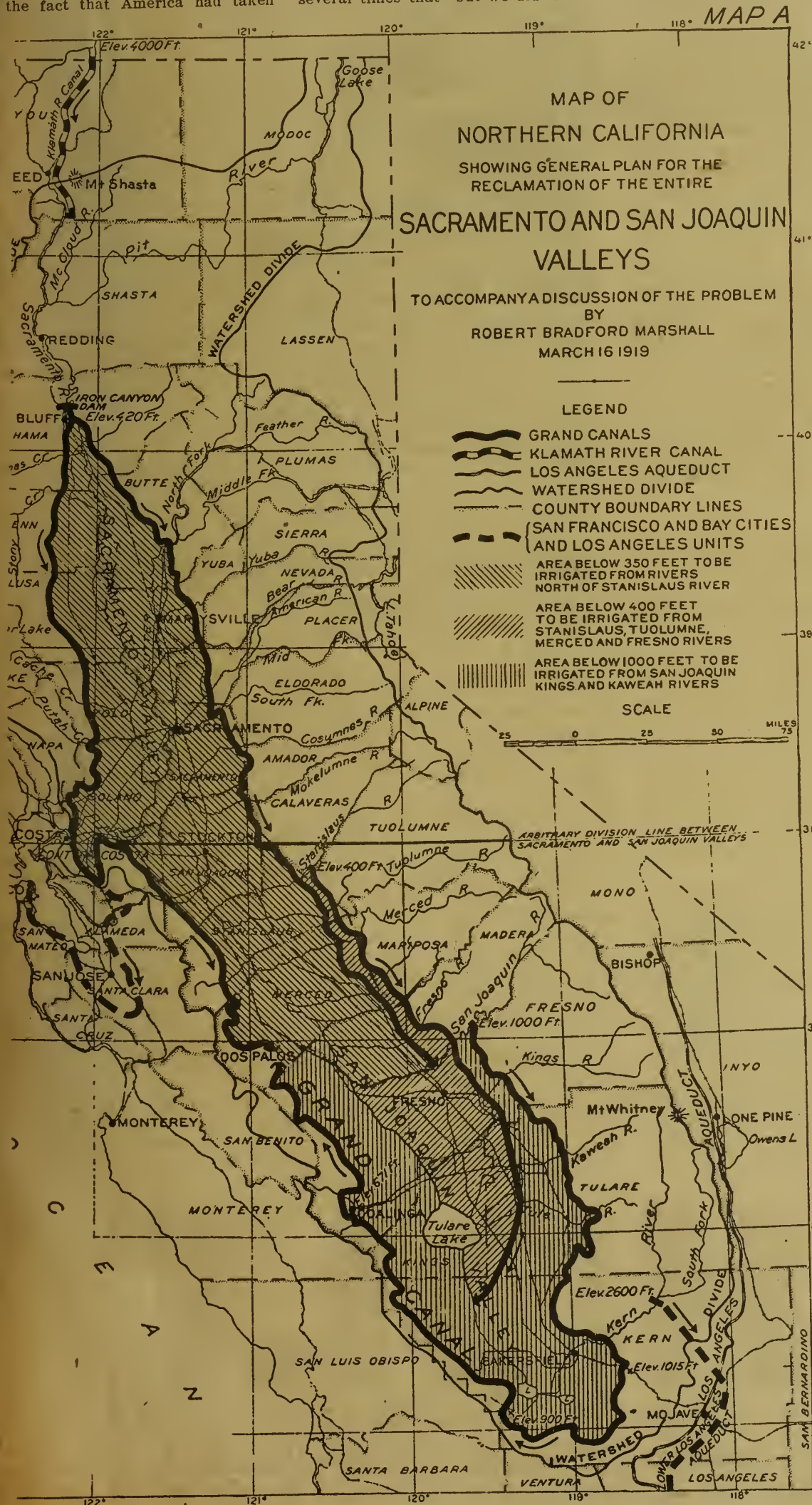
Complete solution of irrigation, power, flood, reclamation and navigation problems under one project.

Twelve million acres to be irrigated, providing homes for additional millions of people, increasing land values six billion dollars or more.

Vast power projects as storage and diversion produce new sites.

The outline map accompanying this article gives an excellent idea of the contemplated work in the great central valley and in the Klamath River section of the extreme north. Col. Marshall suggests that there is sufficient water in other rivers of the Sierra Nevada that it will be possible through building a great storage dam in the upper Kern River to supply water through a 33 mile tunnel to Southern California. This does not appear on the chart excepting at the headwaters of the Kern and the tunnel to the borders of Los Angeles County.

"Without vision the people perish."



—Engraving by Courtesy of California Southland

Agricultural News Notes of the Pacific Coast

Northern California

The Placer County farm bureau has raised its annual dues to \$5.

The Balls Ferry farm center of Shasta County is planning to build a center hall.

The farm bureau expects to locate a poultry demonstration farm in Glenn County in the near future.

Farm Adviser Amundsen of Placer County recently gave pruning demonstrations in Auburn orchards.

The federal tariff commission announces that it will hold a hearing in California some time in February.

Farm Adviser Goatley of Glenn County will give a pruning demonstration in the Lake district on January 5.

The Placerville Fruit Growers Association of Eldorado County is purchasing power spray pumps for use of members.

The Sacramento Country farm bureau has devoted the month of December to an intensive campaign for new members.

Byron A. Nordyke, a stockman near Woodland, Yolo County, says he finds that sheep fatten like ducks on abandoned rice fields.

R. R. Lyding, poultryman of Sonoma County, reports entirely satisfactory results from prolonging the laying day by turning on the electric lights.

A Yolo County stockman has brought in 500 lambs from the ranges and turned them into a 60 acre rice field owned by him which was not worth harvesting.

The Mt. Pleasant center of the Placer County farm bureau at its recent annual meeting elected A. Isaak, director, and Mrs. F. N. Van Dyke, secretary-treasurer.

Proposed changes in the state fencing law to be brought before the coming legislature were discussed by the last meeting of the Anderson, Shasta County, farm bureau.

President Barrows of the state university has been appointed by President Wilson a member of the American Relief Committee to aid China in the present widespread famine.

At the end of the fifth week of the Sonoma County farm bureau egg laying contest at Petaluma, V. H. Guthrie of Petaluma stood at the head with a record of 208 eggs from his pen.

Japanese are said to be planning a campaign through their Japanese Christian churches to appeal to sympathies of other churches in their endeavor to secure California real estate.

Farm Adviser Talbot of Shasta County is laying out several check plots of alfalfa for experimenting with the use of lime, sulphur and a combination of lime and sulphur as fertilizers.

The state department of agriculture is asking the railroads to cooperate in safeguarding California agriculture from the entrance of four dangerous pests, the alfalfa weevil, the cotton boll weevil, the gypsy and browntail moths.

Sonoma and Napa County grape growers are endeavoring to secure extension of option on land now used by the federal department as a vineyard experiment station. Both counties are raising a fund to bear some of the initial expense.

Central California

The state's onion crop will total about 300,000 sacks.

Fig growers of Stanislaus County recently met and held pruning demonstration.

Oakdale, Stanislaus County, is planting to garden peas more than a thousand acres.

The Dinuba section of Tulare County shipped over 2,400 cars of fruit products during the past season.

Board of supervisors of Merced County has approved petition to organize the West Joaquin irrigation district. It will cover 208,000 acres.

Stanislaus County's hog raisers estimate saving to the producers \$11,500 because of selling fat hogs through their farm bureau auctions during the year 1920.

James Wilson at Cupertino claims the largest toyon (holly berry tree) in California. It is said to be the size of an ordinary live oak, no exact dimensions given.

Lindsay, Tulare County, found difficulty in accommodating its large number of citrus fruit workers. Over 500 were camped at one time on the city's free camping grounds.

Fresno built during the past summer six new drying plants, which cost in the neighborhood of \$30,000 each. It is expected that a number of others will be erected next season.

Kern County farm bureau members have been attending vine pruning demonstrations at Arvin, Weed Patch, Shafter, Wasco and Delano. Prof. Bielletti is giving the demonstration.

High school boys of Kern County propose to engage in a grapevine growing contest. The cuttings will be planted this season and the best root systems and thriftiest growth next fall will decide the winner.

Fresno County supervisors will be asked to call a special bond election for the erection of 14 memorial homes for ex-service men in Fresno County towns. The bond issue calls for the appropriation of \$950,000 through a special tax.

At the cattlemen's recent meeting in San Francisco a resolution was adopted calling for immediate action in the formation of a cooperative marketing association. The concern is to be financed with at least a quarter of a million dollars.

Modesto, Stanislaus County, is proposing to have a county fair. This calls for fair grounds, and at present there are three different sites under consideration. A committee is appointed which proposes to pull off a thoroughly representative fair next fall.

Beemen of Stanislaus, Merced and San Joaquin Counties met in annual session at Modesto and elected officers: M. L. Garber of Salida, president; H. E. Wolf of Stockton, first vice president; Earl Snider of Denair, second vice president; F. W. Burtch, secretary-manager.

Home department meetings of Kern County farm bureau were held this week at Shafter, McFarland, Arvin, Weed Patch and Inyo-Kern. Meetings next week at Kern Delta, Tuesday; Beardsley, Wednesday; Wasco, Thursday; Edlson-Fairfax, Friday; general county committee on Saturday, January 8, at Bakersfield.

Southern California

Lettuce growers of Imperial Valley will meet at Brawley this week.

The Riverside County farm bureau has decided to raise annual dues to \$3.

Independent bean buyers report making purchases of Limas at five and a quarter cents.

Japanese at Brawley are setting cantaloupes. A considerable acreage of tomatoes is also in.

Dairymen of the Garden Grove district met Thursday evening, December 16, at Garden Grove.

The board of trade of Indio, Riverside County, is urging necessity of building a packing house.

Palo Verde Valley producers have found profit in growing of Thompson Seedless and Malaga grapes.

Imperial Valley towns permit growers to sell their own products without securing vendor's license.

A conference of lemon growers was held in San Francisco, December 20, to discuss water freight for lemons.

The Imperial Valley Bankers Association has decided to support the Imperial Valley Growers Association.

The new community hall at Nuevo, Riverside County, was dedicated last week. Two hundred people were in attendance.

A demonstration of steam pressure cookers was given at Armada center by Mrs. Woodworth, Riverside County home demonstrator.

Prof. Overholser of the state university has been conducting a series of pruning demonstrations in Ventura County apricot orchards.

Sugar beet growers recently met at Santa Ana and signed up 600 acres in a marketing agreement. Campaign for larger membership will be pressed.

The Lima Bean Bulletin informs growers that not much change or improvement in the market is to be hoped for until after the first of the year.

The cannery at Santa Ana reports biggest run in its history. The pack was valued at over \$1,000,000. Of this nearly \$800,000 valuation was from pimentos.

Irrigators at San Dimas, Los Angeles County, are discussing flood control and conservation measures in the San Gabriel Canyon, which will cost approximately \$15,000,000.

Many growers in the Palo Verde Valley of Riverside County report signing contracts to plant vineyards and deliver grapes. Approximately two-thirds of the contracts call for planting of Malagas.

Horticultural commissioners and others interested in control of black scale met last week in Santa Paula, Ventura County, and found great promise in the new beneficial parasite *aphycus Lounsberryi*.

Riverside County farm bureau held its annual meeting in the new community hall at Nuevo, December 14, when the following officers were elected: Dr. H. S. Gordon, Nuevo, president; O. H. Cash, Perris, vice-president; Miss Irene Sausman, Riverside, secretary-treasurer; F. E. Collier, Mrs. J. E. Hench, George Thomas, Lester Bamberger, Mrs. H. E. De Nyse, O. K. Kelsey, C. K. Brown, directors at large.

The Coast and General

Aberdeen, Washington, has already shipped out 400 tons of salmon.

Skagit County, Washington, has a newly organized poultry association.

Plans are being made for a state department of agriculture in Montana.

Fair weather in Arizona cotton fields has favored harvesting operations.

The Klamath farm bureau of Oregon last year did a business totaling \$40,000.

The Oregon Poultry and Pet Stock Association held its annual at Portland, December 18.

Secretary of Agriculture Meredith opposes the proposal to increase grazing fees on national forests.

The annual convention of the Olive Oil Importers Association will be held in Atlantic City January 19-20.

Stock ranges of Arizona and western New Mexico have been given cold weather, with generally clear skies.

Thirteen Japanese societies in their native land have held a meeting and protested against anti-Japanese legislation in California.

The proposed Columbia Basin project will, it is said, be the largest irrigated area in the world. It will take in lands in Washington, Oregon, Idaho and Montana.

Secretary of Agriculture Meredith says that the falling prices of agricultural products creates a situation which should be dealt with as a national problem.

The U. S. department of agriculture has been conducting a big campaign on predatory animals in Arizona. In one drive at Flagstaff 340 coyotes were killed in ten days.

At the recent thirty-third annual convention of the Oregon State Horticultural Society at Eugene, the necessity of cooperative marketing was the principal topic discussed.

The American Honey Producers League convened in Chicago the first week in December. Representatives were present from apiarists of Canada, Mexico and South America.

Farmers of North Carolina have found that there is more than one way to dispose of their wool. About 15,000 pounds of wool has already been woven by them into blankets.

The Oregon Growers Cooperative Association shipped out 637 carloads of fresh fruits and berries during the months of July, August and September. The headquarters of the association is at Salem.

The U. S. weather bureau reports farming operations in dry land portions of Arizona have made little progress owing to exceedingly dry condition of soil. Seed is germinating slowly and cultivation delayed.

An appropriation of a million dollars is asked of congress by Secretary of Agriculture Meredith, to be used by the federal government in cooperation with the states in forestry work during the coming fiscal year.

Wheat growers of the Inland Empire met recently at Spokane to consider the serious marketing situation created by the slump in wheat prices. Farmers unions of eastern Washington and northern Idaho were well represented.

The Furrow-Manure System

By A. D. Shamel

THE cost of organic fertilizers for use in California citrus orchards, as compared with pre-war prices, shows large increases during recent years, particularly in the case of barnyard manure. Many other items concerned in the cost of producing and marketing the citrus crop have shown similar increases, and from the fact that the prices being received for some of these crops are low it becomes apparent to every thinking person that every essential feature of the cost of production must be considered with the utmost care by the growers. Inasmuch as organic fertilizer is one of the principal items of expense in growing citrus crops in many orchards, it seems logical that the cost and expense of applying such fertilizer, particularly in view of the present unsettled market conditions, should be considered from all possible points of view. The writer does not pretend to have any general knowledge of this subject, but does feel that his observations with regard to the economical use of barnyard manure, especially the applica-

tion of the furrow-manure method, may be of some interest.

The writer is deeply interested in and has described the use of the furrow-manure method in various agricultural publications during the past

several years. The first annual report of the California Citrus Institute issued June 1, 1920, contains two papers bearing upon this subject, one entitled "Application of the Furrow-Manure Method in Citrus Fertilization" and the other "The Conservation and Application of Manure." More than a year has elapsed since the preparation of the above mentioned papers, and it seems desirable to present to the readers of the Cultivator additional observations upon the use of this method.

What Is the Furrow-Manure Method?

The furrow-manure method may be described as the burying of manure or other fertilizers in shallow trenches or furrows. The object is to apply the fertilizer near the feeding root zone in such a way that it can be promptly covered. This method should be clearly differentiated from trenching as it is usually understood. The term "trenching" is frequently used to define the digging of deep trenches or pits, while the term "furrow-manure" should be confined to the plow made furrows or ditches of comparatively shallow depth. As pointed out in previous publications, the writer evolved this idea as a result of his observations in Navel orange orchards in the vicinity of Bahia, Brazil, in 1913. In those orchards manure was found to be the principal fertilizer used, and it was applied, as a rule, in shallow pits near the drip of the branches of the trees. As no horse or tractor drawn implements were found in these orchards and as hand

labor was cheap, costing about 30 cents for a full day's work, this method of applying manure was the logical one.

In California, however, with comparatively high priced labor and with animal or power drawn plows in general use, it seemed to the writer that a modification of the Brazilian method might prove to be of value. With the cooperation of one of the leading citrus growers in the Corona district a small plot was devoted to the following experiment: Furrows were made midway between the tree rows. These furrows were from six to eight inches deep and arranged in the same direction as the irrigation furrows. They were the back furrows left after plowing in which an extra round with an ordinary 16 inch orchard plow was made in order to widen and deepen them. At the time that the manure was distributed in these furrows at the rate of about ten cubic feet per tree a similar amount was broadcasted and plowed under on the balance of the orchard. The results of this experiment were clear cut and definite and the beneficial effect of the furrow-manure treatment was so decided as to admit of but one conclusion, viz., that it was much more efficient in improving tree conditions in this experiment than the broadcast system. Impartial study of this plot and the comparative orchard by scientists, citrus growers and others confirmed this conclusion in every respect, as did subsequent individual tree records of production.

As a result of this very striking demonstration many neighboring citrus

(Continued on Page 824.)



Making manure furrow with plow arranged for this purpose.

Agricultural Progress in Arizona

By M. E. Bemis

AGRICULTURAL development in Arizona during the last decade has been so rapid and its success so marked that in relative importance it has crept up from a minor place to second in importance in valuation of property and in production. As measured by dollars and cents, mining holds first place and agriculture second. Cattle growing and sheep growing have third and fourth place.

The acreage of irrigated land in Arizona at the present time is nearly 500,000, and by far the greater proportion of this (about 300,000 acres) is in Maricopa County. The other leading agricultural counties are Yuma, with irrigated acreage of 43,000; Graham, 27,000; Pinal, 43,000; and Pima, 29,000. Several other counties have more or less extensive irrigation projects either completed or partly completed. This is particularly true of Apache County, where the Lyman dam is just now being completed.

Early irrigation in Arizona as well as other parts of the Southwest was, as compared with modern irrigation, somewhat crude. The early settlers were largely cattlemen. Irrigation to them was merely incidental to cattle raising. Brush and stone dams and more or less inexpensive canals enabled them to grow a crop of grain or a summer crop of sorghum and, in the later years of the cattle grower's regime, alfalfa.

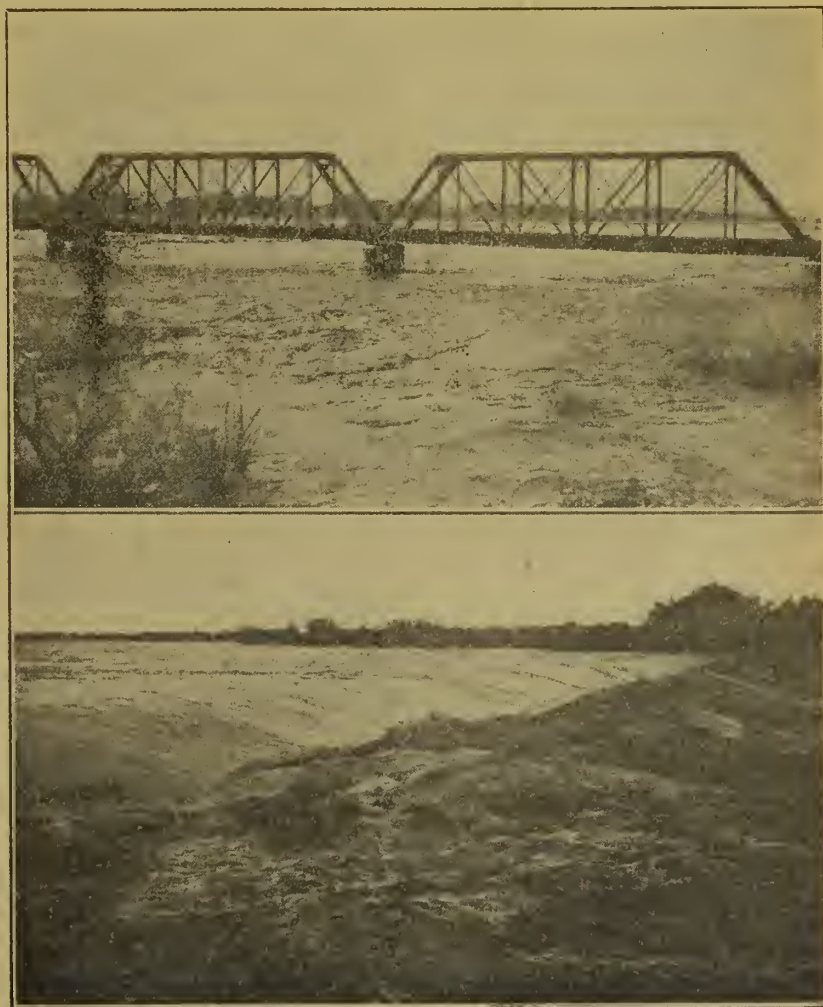
The first really big irrigation enterprise in Arizona was undoubtedly that of the Salt River Valley, and the first

work on this was a little more than 50 years ago. This proved to be a big success, although grain and sorghum were the principal crops at first. In the later years alfalfa was added and made a splendid success. It was also found that fruits and vegetables, and in fact so many crops, would do well that settlement was rapid. History then proceeded to repeat itself, that is to say, more land was under the plow than there was water for the land. Consequently there was not the progress that the early successes indicated, and it was not until the completion of the Roosevelt dam a little more than ten years ago that the dreams of the early settlers began to be realized.

The success of the Salt River project has been so marked that other irrigation projects have been patterned after it, and it has been the inspiration for other projects which have been completed or which are now contemplated.

Looking over the vast field of possibility it would seem that our 500,000 acres of irrigated land is only a beginning of what we may expect within the next decade. Curiously, Arizona is the fifth state in the Union in area and is drained almost entirely by one river system, the Colorado. The small area which is excepted is in the north-eastern part of the state where a few streams flow into Utah and Colorado.

(Continued on Page 825.)



Salt River at Flood

Established 1877

Forty-third Year

CALIFORNIA CULTIVATOR

and LIVESTOCK and DAIRY JOURNAL

A Journal of Horticulture, Agriculture and Livestock

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Saturday, Dec. 25, 1920

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertisers in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

EDITORIALETTES

Flowing water gives to the Californian a feeling similar to that which we believe a man by the name of Marshall once had when he saw the glittering nugget at Sutter's Mill, and perhaps it is fitting that another Marshall should now come and convince us of greater wealth than we had imagined in flowing water. In any case, it's a wonderfully attractive scene on the cover of this issue, and in this number there is much which calls attention to Col. Marshall's great scheme and to the wealth making power of California waters. This particular scene is on the system of the Fontana Company and shows an overflow box which regulates pressure.

* * *

It will be many years before California will see the working out of the details of the great irrigation scheme which will mean so much to Central California, but its very magnitude and apparent impossibility stir one's imagination to the extent that one involuntarily remarks: "Let's do it." When one thinks of storing the winter's floods of the Feather River, carrying them around the north and west side of the valley, dropping an inverted siphon under Carquinez Straits, then up on the hills above Port Costa, around the bay into San Francisco, and again farther down the valley even

to Crows Landing, and then realizes that this is only a small feature of the great irrigation scheme, it impresses with its bigness.

* * *

Meantime the duty of such water as is now available for irrigation must be increased. This can be done through lining of canals with concrete and the use of concrete pipes and division gates to a greater extent.

* * *

There are meters, division gates, surface pipes, improved implements for preparing ground for irrigation, almost without number, and these are saving, not only in water, but in labor. We do not think the state has ever seen improvement so rapid along this line as during the past two years.

* * *

History is repeating itself back in Kansas. Corn is proving cheaper than coal as a fuel, and as a result thousands of tons of fine grain is going into the furnaces back in Kansas. It seems unwise; it seems almost wicked, but we doubt not if we lived in Kansas and had been raising corn we would likewise be making fuel of it rather than getting hot over the fact

NINETEEN TONS OF MILK FROM ONE COW IN ONE YEAR

Wire received just as press starts:

"Segis Pietertje Prospect a Holstein cow owned by Carnation Stock Farms, Seattle, Washington has broken the world's record for milk production with thirty-seven thousand three hundred and forty-eight and one-tenth pounds in three hundred sixty-five days exceeding Tilly Alcartra by three thousand nine hundred fifty-eight pounds."

that it makes money faster that way than by feeding to hogs for the benefit of the packers.

* * *

Speaking of burning corn, why not grow our fuel in a more satisfactory way—we now mean we of California—and plant a eucalyptus tree? A good big Christmas backlog in the fireplace adds a wonderful amount of cheer, enough, we believe, to justify even the owners of smaller tracts of land in utilizing a waste place or an out of the way corner by growing this tree which gives the greatest amount of wood within a given time of any tree on earth.

* * *

Wood is selling in Los Angeles now at \$32 per cord. Such prices are resulting in forsaking the fireplace and installing gas and oil heaters. They supply the warmth but lack in giving the homey feeling of the old time fireplace.

* * *

If one has no need of following the Roosevelt plan of securing a bit of exercise at the woodpile, there are several excellent power saws which make the working up of wood a very profitable occupation. We are not urging a return to the eucalyptus craze of a few years ago, but be sensible and plant a few trees for fuel, posts and numberless other farm uses.

* * *

The farm bureau in its recent meeting in Indianapolis fired some hot shot into the transportation act now before congress, which proposes to guarantee railroads an assured income of six per cent, or perhaps only 5½. It is perhaps logical that the railroads which were guaranteed, not only against loss, but a definite income during the war, should wish these guarantees continued. Shipbuilders and some manufacturers were also given guarantees, and, unfortunately, this "guaranteed class" is so numerous that they are having a strong pull, even a push, with the legislators. So the

farm bureau is getting busy and it points out the fact that it has been conceded that the railroads are figuring on a basis some six or seven billions in excess of actual selling valuation in their effort to secure this enormous amount of "pork." In the name of all that's good, why pile this burden on top of the farmers, thousands of whom are today being ruined, largely, at least, because of the enormous transportation charges.

* * *

The total consumption of wool by manufacturers during the month of August was 38,000,000 pounds. This was 18,000,000 pounds less than during the same month of 1919 and the proportion of high grade wool used during the present year is less than that of former years by a much greater figure. Meantime we note in a northern exchange that sheep owners are driving sheep onto winter range without shearing: "For the first time in the history of sheep raising in this part of the state there was no fall shearing this year. No shearing was done with the exception of lambs. The high prices demanded by the shearers, who had formed a combination and held out

are continually flowing into the sea, but not a drop ever flows from it nor is it ever given up except under the fierce demand of the desert sun. For ages this has continued until the sea contains not one form of life; no one ever camps by it; never does a bird haunt its shores, and only bleakest of desert wastes surround it.

The other sea, much smaller, named Galilee, has grass covered slopes surrounding it; violets and daffodils blossom almost to the rippling edge; its waters are filled with myriads of fish-birds everywhere; it is a living sea. As with the Dead Sea, its waters are all from the Jordan. The difference in their character is explained by the fact that the smaller northern sea is continually giving up that which it receives.

Of course Mr. Dixon then moralized on human beings who made a perfect parallel with either the small body of living water or with the larger body of dead water. Lots of people in this world who can still walk are dead ones. They add little to the happiness or the advancement of the world.

The New Year is a good time to give a bit of ourselves and pass on something of happiness to others. At least we can buy an almanac and learn a few jokes.

WAGE SCHEDULE

The Valley Fruit Growers Association, which is a big factor in arranging for labor and its compensation in the San Joaquin Valley, has made a radical downward revision of wage schedule for fruit and other workers. There are thousands of idle men whom fruit growers have felt unable to employ simply because fruit prices would not justify continuance of production with present wage schedule. So the association has named new wages as follows: Pruning trees and vines, Japanese, Hindus and Mexicans, 45 cents; Americans, 50 cents. Americans, with board per day, \$3 or \$3.25 according to length of job. Laborers and teamsters, \$2.50 and board or \$60 per month and board.

"It is the hope of the directors of the Valley Fruit Growers Association that with the publication of these prices for labor and pruning the growers will immediately take advantage of the readjustment of the wage scale, which has been gone into most carefully by the directors of the association. A large number of capable and experienced ranch hands and pruners, in crews or single men, are available."

ALKALI IMPREGNATED WATER

The writer recently made an auto trip to San Francisco and return, going by the interior route and returning by the coast route. One of the impressions firmly fastened on the mind is the extreme prevalence of alkali lands throughout the state, an evil which must be guarded against. This is especially true of such crops as the citrus. It is risky to attempt to irrigate citrus orchards from wells that obtain their water from the country drainage. We have glaring examples of this right at home at Riverside. Orchards that have shifted from ditch water to well water after they had a good start have deteriorated to an alarming degree.

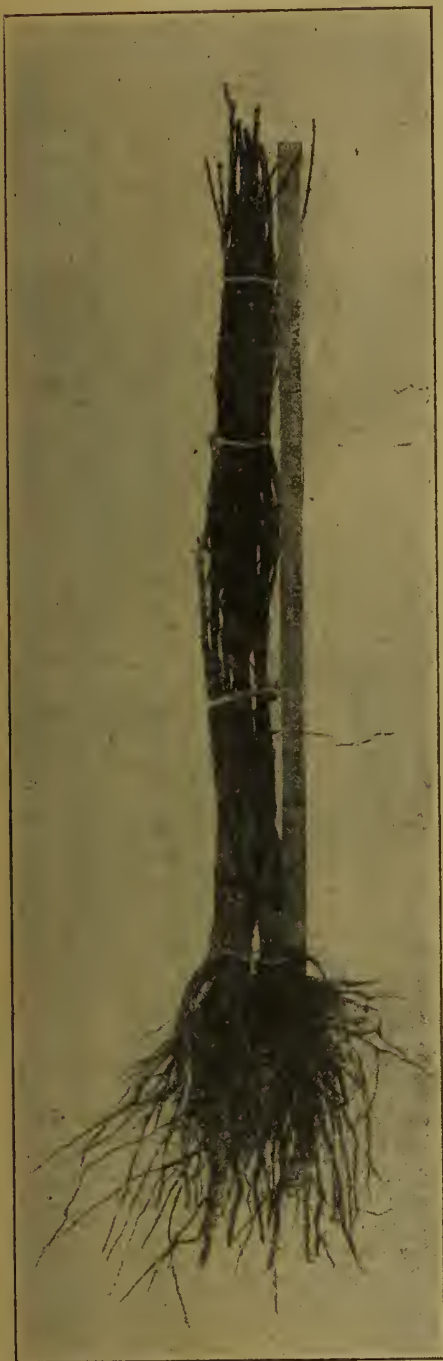
The experiment station authorities are investigating the conditions and will doubtless report progress on their work if they have not already done so. But this warning cannot be too much dwelt upon. Corona tried the Elsinore Lake water at the cost of almost ruin. Wells are in use in many places that should never be used for irrigation purposes. It does not become apparent at first. It may be several years before the alkali accumulates sufficiently to make its effects apparent. This makes the situation all the more dangerous, as it takes a long time to get trees back to normal after the soil has once been poisoned in this way.—K.

HAPPY NEW YEAR

There is a whole lot of happiness in the world. Let us wish it on each other more than ever before in our lives at this glad New Year time. And it is a glad New Year time notwithstanding there are so many appeals that even heartstrings are more or less rent. There were never so many calls upon us to be of service. Therein may come the happiness for the rest of us.

If we may be pardoned for a bit of moralizing in a story, we will tell one we heard the other day from a preacher named Dixon who succeeded Spurgeon in his Tabernacle in London. The story had to do with the Dead Sea and another smaller body of water to the north. The waters of the Jordan

TREES AND VINES



**June Bud Peach Trees
Number One Grade**

In addition to our usual stock of yearling trees, we propagated 250,000 June Budded Trees this season.

The Planting Season Is at Hand

The supply of trees and vines for orchard and vineyard planting will doubtless be exhausted before long.

The greater part of our nursery stock for this season's delivery is grading up very satisfactory and we are accepting orders for immediate delivery.

If we may quote you on your requirements send request immediately, giving information regarding quantities and varieties wanted.

Southern California orders for Grape Vines must reach us prior to January 1st. (Do not ask for Wine Grape rootings as we have none in stock.)

We have all told over four million trees and vines in our several Nursery Plants for California of commercial varieties of drying, shipping and canning fruits and grapes.

We have been at it in California for THIRTY-TWO years.

We endeavor to please and hold every customer.

FIGS

Our splendid stock of Fig trees are grown in the FROSTLESS BELT OF TULARE COUNTY thereby insuring our customers that the trees are in a thrifty, healthy condition.

We make a specialty of growing the famous K A D O T A FIG.

It is a rapid grower; precocious bearer and a superior fig for canning, preserving and also for fresh shipping.

We can also supply all the other leading varieties.

Let us figure with you on your wants

THOMPSON SEEDLESS GRAPES

The California Associated Raisin Company has been the means of placing the Raisin industry of the State upon a paying basis.

Apparent to all planters is the value of the well known

Thompson Seedless

Its adaptability to a wide range of soils and climatic conditions together with its enormous bearing qualities makes it a popular shipping and raisin variety.

Our stock of all the leading commercial varieties is complete.



**Thompson Seedless
Number One Vines**

Our Grape Vines grown in Madera, Fresno and Tulare Counties are unexcelled

Our New Descriptive Catalogue Mailed Free

Kirkman Nurseries
RELIABLE TREES AND VINES

FRESNO : : Office : : **CALIFORNIA**
Tulare and O Sts.



The size of your crop depends on what you do now

The size and quality of your next fruit crop is being determined now by the condition of your soil.

Vital elements necessary to the success of the crop lie dormant—potash—nitrogen—phosphorus. Other equally important elements—sulphur and calcium—have been exhausted.

AGRI Gypsum will release these latent possibilities of your land and give it new life and fertility, when used as a root fertilizer and as a stimulant for luxurious cover crops.

AGRI Gypsum is a specially selected, specially ground and specially prepared Gypsum rock. A poor agricultural gypsum is not of much benefit; AGRI Gypsum is a remarkable fertilizer.

UNITED STATES GYPSUM CO.

"World's Largest Producers of Gypsum Products"

Citizens National Bank Bldg.

LOS ANGELES

Agri
GYPSUM

U.S.
G

Order your TREES now

If you have not already decided what Trees you will probably want this season we suggest that you do so at once as many varieties will be scarce.

Any delay in ordering may mean a year's delay in planting

We are always pleased to answer questions regarding best varieties to grow, soil, irrigation, pruning, etc.

FANCHER CREEK NURSERIES

.. FRESNO, CALIFORNIA ..

THE FURROW-MANURE METHOD

(Continued from Page 821.)

growers and those from a distance who visited this plat tried out this method on a large commercial scale in their orchards. Six years have passed since then. The method has been tested under practically every condition in the citrus growing districts. It has also been extensively used in applying fertilizers in vineyards, deciduous fruit orchards and elsewhere. The writer wishes to emphasize the fact that he has no reason for advocating the use of this method, or a trial of it, other than the hope that it may prove to be valuable and a real service to those concerned. He does not wish to convey the impression that it is the only method by which organic fertilizers can be successfully applied in citrus orchards or elsewhere. At the same time he has been profoundly impressed with its apparent value and usefulness and cannot help calling the attention

It is kept moist during the irrigation period. This is usually accomplished by locating the manure furrows so that the irrigation furrows run alongside. In this way the water in the irrigation furrows supplies naturally the essential moisture to the buried manure. For some unexplained reason it seems that when the irrigation water is run directly over the top of the manure furrows the results are not as satisfactory as when the water is run alongside the manure furrows. On the other hand, good results have been repeatedly observed where the manure is buried in furrows run at right angles to the irrigation furrows in such a way that the irrigation water passes down into the buried manure. In these cases the moistened manure furrows have been frequently followed in the spaces between the trees and where the irrigation furrows are not established.

In the second place, deeply buried manure has not given as beneficial results as that in shallow furrows. The



Furrow Manuring in Orange Orchard

Furrow about eight inches deep, with manure distributed at the rate of about five cubic feet per tree.

of all interested persons to the results which have been obtained from its use.

A few apparent exceptions to the almost universal testimony as to the value of this method have come to the writer's attention. The writer has had no opportunity to investigate these reports; furthermore, he has had no facilities for carrying on any other experiments than the original one. It may be, as is usually the case with the general application of any method of farm practice with which the writer is familiar, that under some soil or other conditions this method does not give as satisfactory results as the broadcast system. Further experience will prove the limitations of the furrow-manure method, but to date it has been an almost universal success according to the reports the writer has received from the users. It may be that in the two or three cases in question the application of the method was such as to prevent the development of the beneficial results usually observed. There are several fundamental factors, in the writer's opinion, which must be carefully observed, otherwise unfavorable results are likely to be obtained.

In the first place, the buried manure in the furrows must be so placed that

writer has studied this condition many times and observed this result in every case investigated, but is unable to offer an explanation as to the cause of this condition. The best results have been found where the manure has been buried in furrows from six to eight inches deep.

In the third place, the season of application of the manure in furrows has seemed to have an important bearing upon the results. While the season of application depends frequently upon local conditions and must be governed somewhat by them, the best results seem to have been obtained, in the writer's observations, when the manure was applied during the late summer and early winter months. This result may vary, depending upon local conditions, and probably does, and the writer has some evidence to this effect, yet the general conclusion in this respect remains as stated.

In the fourth place, it seems apparent from our observations that fresh stable manure applied in the furrows gives better results than decomposed or composted manure. This condition has been explained, whether justly or not the writer is unable to say, on the basis that the decomposition of the manure in the soil is beneficial in it-

100,000 Plants

Loganberry
Currant
Gooseberry
Raspberry
Blackberry



Trees & Vines

Fruit, Shade
and Ornamental.
Palms
Shrubs
Roses, etc.

300,000 ASPARAGUS

Write for Prices

Six leading sorts, including rust-proof
Reading, Grant and Washington
CROW'S NURSERIES, Gilroy, Cal.

PLANT FIG and PEAR TREES For PROFIT

Order Fruit Trees NOW—Stock Scarce
Write For Price List—Full Line—Good Stock

CITRUS, TROPICAL and Full Line of ORNAMENTAL PLANTS
PIONEER NURSERY OF MONROVIA

NURSERY STOCK

PLACENTIA AND EUREKA WALNUT TREE SPECIALISTS

Nurseries—Ventura and Los Angeles Counties

R. E. Pierce

Oxnard, Cal.

A. G. Snow

self aside from the plant food value of the fertilizer.

Applying the Method

There are several well known implement companies in California that now furnish admirable equipment for applying this method. In particular, plows adapted for making suitable furrows with once through are now available for those who desire to use them. In covering the manure several generally used implements have been adapted for this purpose, which usually simplify and reduce the expense of this feature of the method. One implement for this purpose is a two shovel cultivator, usually drawn by one animal, with the shovels set at the proper angle and spaced according to the width of the manure furrow, which covers the manure satisfactorily and leaves suitable furrows for irrigation purposes alongside the buried manure. No one as yet, in the writer's knowledge, has put on the market a wagon or manure distributor which will automatically throw the manure into the furrows. Such an implement is needed and the writer hopes that some of our progressive implement makers will soon supply the demand for such a machine.

The beginner may well try this method by making the furrows about six inches deep, locate them near the drip of the branches of the trees and in the same direction as the flow of irrigation water. The manure should be covered soon after it has been distributed, the same day if possible. It should be spread in the furrows at least as far as the branches reach on both sides of the tree trunks. In older orchards where the branches nearly meet in the rows, it would be advisable to fill the entire length of the furrows. With smaller trees it seems probable that it is not necessary to fill all of the furrows and is more desirable to bunch the manure alongside the trees.

Reasons for Using Furrow Manure Method

One of the chief reasons for using this method is the competent testimony of many successful orchardists, covering a period of at least five years, that five cubic feet of manure applied in the furrows gives as good or better results than ten cubic feet broadcasted.

Another reason is that it is practicable to cover the manure promptly in the furrows, thus avoiding the loss of nitrogen which frequently occurs when manure is broadcasted and allowed to lie exposed to the air for some time before it is covered.

Another reason is that the fertilizer in the furrows can be placed directly in or near the feeding root zone of the trees, where it seems logical that it must be most efficient. Furthermore, age long experience seems to indicate that bunched manure is to be preferred to a thinly spread condition for tree feeding purposes. If it is necessary to improve the entire soil condition, it may well be that better results in this respect will be obtained by broadcasting the manure. This contention is sometimes made and the writer is unable to offer any opinion in regard to it other than it seems to be a reasonable one.

The writer has watched for several years with keen interest the use of this method in the bringing up or the improvement of citrus orchards in poor physical condition. There has not been a single exception in these observations to the very apparent beneficial results from its use. These instances have occurred under widely different conditions and in different districts. The results are extremely striking and worthy of inspection and careful study by those who are in doubt as to the practicability or value of this method. They include very large, medium and small sized orchards, old and young trees, all commercial varieties of the citrus and all important soil types.

A recent investigation of Satsuma orange orchard conditions in southern Alabama revealed the fact that this method is being used there with as apparently beneficial results as have been observed in California. Correspondence with several citrus growers in foreign countries indicates that this method has recently been introduced there successfully.

In conclusion the writer wishes to

offer his opinion that the citrus grower can well afford to try this method as a means for applying manure in his orchard in an economical, practical and efficient manner.

AGRICULTURAL PROGRESS IN ARIZONA

(Continued from Page 821.)

The principal tributaries of the Colorado are the Gila and Little Colorado. Beginning with the Gila, which rises in New Mexico, there is found to be a reservoir site in New Mexico which will irrigate a considerable area of land in Eastern Arizona. Farther down on the Gila the Mormon settlers in Graham County very shortly after the settlement of the Salt River Valley developed irrigation on the Gila and built up the towns of Safford, Sol-

omonville, Thatcher and one or two other small places. This irrigation project, as compared to our Salt River Valley, is small in area, but has been very successful, especially so in the production of alfalfa, grain and fruits. There is contemplated a reorganization of several canal companies of this district into a water users association to establish reservoirs which will extend the area of irrigated land in this county.

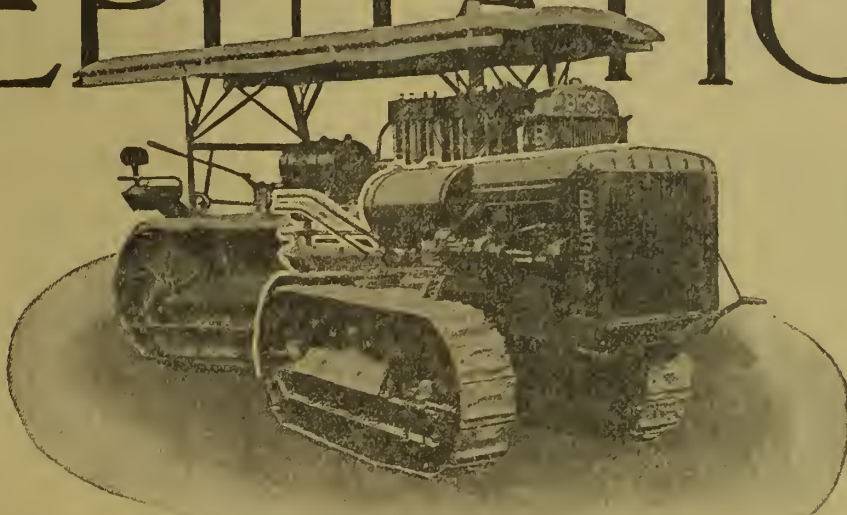
In the vicinity of Florence irrigation is older than in the Salt River Valley. There is a reservoir site above Florence about 75 miles, known as the San Carlos site. If a reservoir is built here it is believed that sufficient water will be stored to irrigate possibly 200,000 acres of land in Florence and Casa Grande Valley. A small area of land is already under irrigation at the present time. Also a small area in close

proximity at the Pima Indian reservation near Sacaton. Irrigation by pumping is reaching a greater degree of success in the Casa Grande Valley than any other section.

At Yuma new land is being opened on the fertile Yuma Mesa. Development here has already begun and during the next year it is almost certain that the area of irrigated land in the Yuma Valley will be greatly increased.

About 15 miles west of Phoenix, a little west of the junction of the Gila and Salt, there is an irrigated section of probably 30,000 acres which is irrigated from the Gila. The drainage from the great irrigation project of the Salt River Valley helps to maintain an even flow in the Gila and there is always plenty of water, although there is no reservoir. Farther on a dam is being built which will, it is believed, irrigate approximately 75,000

REPUTATION



The Best Tracklayer Sixty Tractor has built a reputation for stamina, reliable power and low up-keep. This reputation so closely guarded by the manufacturer has been due to the quality of material used, the proven design and the knowledge of tractor requirements which has been gained through years of experience in the actual building of tractors and the incorporating of modern improvements in each new model.

The "Sixty" was too powerful for all uses; so, upon the demand of farmer, orchardist, contractor, in fact all lines of industry where tractors are employed, the factory has perfected a model to be known as the Best Tracklayer Thirty Tractor, in which has been incorporated all of the experience of the manufacturer as to design, etc., together with all of the reliable improvements of the age. The "Thirty" is years ahead of any other tractor on the market.

Delivery date on this new model "Thirty"
About February 1st, 1921. Send for circular.

C. L. BEST TRACTOR CO.

SAN LEANDRO

CALIFORNIA

Best Tractors



acres. There are scattered areas in other districts along the Gila between Gila Bend and Yuma that are irrigated. The possibilities for further development are good but as yet somewhat indefinite.

In the southern part of the state on the Santa Cruz River in the vicinity of Tucson there are several irrigation projects, partly gravity and partly pumping proposition, which have reclaimed a considerable area of choice lands.

In the northern part of the state, as before mentioned, the Lyman dam will irrigate a considerable area. In the vicinity of Winslow on the Little Colorado River there is an irrigation project under contemplation which will add much to the areas of irrigated land on the Little Colorado. In the extreme northern part of the state, in what is known as the Arizona strip, there are areas which will be brought into irrigation at some future time. The one most talked of at the present time is the one on the Virgin River.

In the Salt River Valley, in addition to the lands already supplied with water, there is almost certain to be

great development in the next few years. The Paradise Valley Land Owners have been granted permits to build dams in the Verde River, and the area of land which will be irrigated is 75,000 to 90,000 acres. Further conservation of the waters of the Roosevelt dam, together with the dam which is contemplated on the Salt River at Mormon Flats between Roosevelt and Granite Reef dam will permit of the irrigation of several thousand acres east of the present boundary of the project.

The Southwest Cotton Company has developed, largely by pumping with power furnished from the power houses of the Salt River Valley project, some 25,000 acres of land. These projects which have been mentioned will, when completed, double and perhaps treble the irrigated area of Arizona.

One big irrigation project, that of the Colorado, which is now only tentatively planned, will be perhaps the greatest in the world. Honorable C. M. Zander, member of the state tax commission for the past several years and one of the best posted men in the

state, has said of this project: "The Colorado will appeal to the imagination of the nation more than will the Mississippi because here can be put on a realistic play enacting the scenes of 5,000 years ago on the Euphrates and the Nile, because a desolation will be changed into an empire, a waste into a paradise, a Garden of Eden rediscovered that may usher in the millennium as it first ushered the advent of man. Part of May and June there were 170,000 second feet of water rolling to the sea. During the year, if properly conserved behind reservoir dams, enough water is carried by this river to irrigate two million acres of land, to generate a million horsepower of electric energy and in addition to supply a regulated flow sufficient for navigation from Yuma to Wyoming. Arizona's proportion of all these benefits should be at least one-half."

One who has watched the development of irrigation, and after looking over the immense area of desert land, turns and sees the unhampered floods of water rushing down to the sea to waste, only begins to dream of what the future holds for Arizona and other

parts of the Southwest. In soil and in sunshine there is no part of the world that can claim superiority. The water is the one element that is needed, and the water that is annually flowing to waste is sufficient, if conserved, to make over this part of the world into an agricultural paradise and to offer homes to the thousands of people who have a real honest desire to get back to the land and live that independent life that real Americans desire to live.

HOW A WATER FILING OR APPROPRIATION IS MADE

By W. A. Johnstone, Commissioner



THE doctrine of appropriation is one recognized in the law of waters as governing a class of rights that grew out of the occupancy of the public domain during the mining period. Although comparatively recent, it represents a very ancient practice in Western America. This is well stated in the well known case of Clough vs. Wing (2 Arizona 371), wherein the court says:

"And the right to appropriate and use water for irrigation has been recognized longer than history, and since earlier times than tradition. Evidences of it are to be found all over Arizona and New Mexico in the ancient canals of a prehistoric people, who once composed a dense and highly civilized population. These canals are now plainly marked, and some modern canals follow the track and use the work of this forgotten people. The native tribes, the Pimas and Papagos and other pueblo Indians, now, as they for generations have done, appropriate and use the waters of these streams in husbandry, and sacredly recognize the rights acquired by long use, and no right of a riparian owner is thought of. The only right in water is found in the right to conduct the same through their canals to their fields, there to use the same in irrigation. The same was found to prevail in Mexico among the Aztecs, the Toltecs, the Yaquis and other tribes at the time of the conquest, and remained undisturbed in the jurisprudence of that country until now."

The courts first recognized this doctrine and in 1872 the California legislature enacted 13 short sections (see 1410-1422 Civil Code) governing the acquisition of such rights, and these have held with slight changes until December 19, 1914, when the water commission act, passed by the 1913 legislature, was approved by all the people of the state upon a referendum

Applications

The new law provided a fairly complete water code under which the state now supervises the acquiring of new rights and maintains a complete record for the benefit of the appropriator and the public in the main office of the state water commission at San Francisco. The new law did not change the basic principles but did abrogate the old sections. The water commission has a number of other very important functions, such as the determination of old rights acquired under the earlier law, studies of available water supplies and storage sites, etc., and as an informal court or as referee in water litigation.

To acquire a water right under the new law it is necessary for the applicant to file an application with the state water commission, setting out the name and address of applicant, source of water, place of diversion, purpose for which it is to be used, place of use, and general description of the works to be installed. Priority is fixed as of the time of the filing of the application with the commission. For the purpose of protecting the priority of the applicant he need not file a complete application at the outset, but must give his name, the maximum amount of water called for, purpose of use and source and point of diversion. The commission has authority to give reasonable extensions of time for surveys, etc., necessary to give the full information required. The statute requires that a filing fee of \$5 be sent with the application, and a small permit fee is collected when a permit is issued.

The act provides that separate applications must be made for the following uses: irrigation, power, mining, municipal and storage and adds that water for domestic uses may be asked



Greetings!

"The World Over"

TO you, our legion of friends, old and new,
we send our heartiest Yuletide greetings.

In the rich farm lands of the United States, in Canadian wheat fields, on the wide plains of South America and Europe—wherever Case Machinery has gone, there we count our friends.

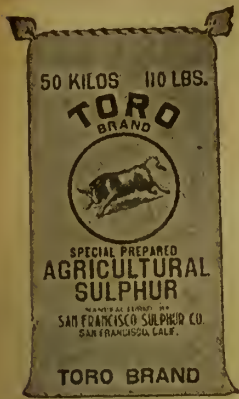
To you who toil in these fields, year by year bringing from the soil life and strength for your nation, we owe our greatest debt. For seventy-nine years we have striven to make your task easier, your work more joyous.

In a spirit of warm friendliness and rejoicing, we wish you the age-old, "Merry Christmas".

J. I. Case Threshing Machine Company
Racine, Wis.



for with any of the above uses. The commission has recognized applications for a permit for manufacturing purposes in addition to the above.



SULPHUR

It has been proven and so recommended by the University of California that if you sulphur your grape vines and orchards six times they will not be affected by MILDEW or RED SPIDERS.

ANCHOR Brand Velvet Flowers of Sulphur, also EAGLE Brand and Fleur de Soufre, packed in double sacks, are the fluffiest

and PUREST sulphurs that money can buy; the best for vineyards; the best for bleaching purposes, LEAVING NO ASH.

VENTILATED Sublimed Sulphur—Impalpable Powder, 100% pure, in double sacks, for Dry Dusting and making Paste Sulphurs.

For LIME-SULPHUR SOLUTION, use our DIAMOND "S" BRAND REFINED FLOUR SULPHUR. We can furnish you this sulphur at such a low price that it would pay you to mix your own solution and net you a profit equal to the amount paid out for labor in spraying your orchard, even if you pay your men \$5 per day for making the solution and applying same.

To create additional available plant food and prevent smut in grain, drill into the soil 220 POUNDS PER ACRE of TORO BRAND SPECIALLY PREPARED AGRICULTURAL SULPHUR—or our DIAMOND "S" BRAND REFINED POWDERED SULPHUR. This soil treatment has increased various crops up to 500%. Send for Circulars No. 6, 7 and 8.

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These trees are grown on new soil never before in nursery stock, are well rooted, clean, healthy and hardy.

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Tree cuts or wounds, if left exposed, are very likely to become infected. Prevent infection by prompt application of PABCO PRUNING PASTE. Ask your dealer. Manufactured by the Paraffine Companies, Inc., San Francisco, California.—Adv.

Permits

When the application is received in proper form with the maps required it is advertised by four publications in the paper nearest the user for four weekly publications, or in some cases notices are posted in the nearest post-office. After the notice has run 60 days is allowed for the filing of protests and objections. If no protest is made, and there is a reasonable showing of water being available, the commission issues a permit, fixing the amount, use, time for beginning construction, time to complete the system, and time to completely put the water to the proposed use. The commission maintains a certain supervision over the construction and has authority for good cause shown to give proper extensions of time.

License

After construction has been completed, an inspection made, and when the water has been fully applied, and so shown, the commission issues a license which becomes the applicant's evidence of title so long as he maintains his right by use. The water commission act provides that three years non-use of the water right constitutes a forfeiture of the right. Heretofore, the courts, in the absence of state law, have held that five years non-use had the same effect.

BRIEF OBSERVATIONS ON WINTER IRRIGATION OF CITRUS

By Jas. D. Culbertson



BECAUSE the winter months in California constitute the so-called "rainy season," all too frequently the question of irrigation is dropped from the calendar from October to April. Many a citrus grower takes it for granted that it will rain enough to maintain the trees, and when it does rain half an inch or so, he looks at the ground about the trees and underneath the cover crop, sees it damp, and concludes that all is well.

During the ordinary winter weather evaporation of moisture from the soil and transpiration of moisture from the foliage of the tree are greatly reduced, but where there is a vigorous cover crop it often uses moisture far in excess of these savings.

Winter rains can take the place of orchard irrigation only when they penetrate well into the soil mass occupied by the feeding root systems.

On most soils there is no need in the winter for such frequent or copious irrigations as during the summer, even if there is no rainfall, but the grower of oranges or lemons who prizes quality and quantity in his yields will keep his finger on the moisture pulse of his soil to see that it does not fall to the wilting point, or below.

If trees are allowed to wilt much of the fruit is prematurely dwarfed and tends to ripen early.

As the rainy season approaches, however, it is extremely desirable to have the orchards in such condition that they will absorb as much as possible of the precious rain water, not only because it costs nothing, but more especially because it falls uniformly over the entire area of soil and carries down into the root zone the soluble nutrients that accumulate near the surface during summer cultivation and irrigation.

Furthermore, on soils tending toward alkali accumulations, an abundant absorption of rain frequently leaches out large quantities of injurious salts that are not easily displaced by the irrigation water.

In order to have the orchard soils always capable of absorbing generous quantities of rainfall, the winter irrigations should be lighter. This can be accomplished, usually, either by keeping the water in the furrows a shorter time, or by irrigating only half of the furrows, or by both methods.

Like so many other orchard problems, the question of proper winter irrigation depends for its proper solution by each grower on knowing the actual condition of the soil. This means thorough and frequent soil moisture observations to a sufficient depth to reveal the conditions where the roots are feeding.

It is proposed to increase the capacity of Lake Hemet by raising the dam 20 feet.



TOP-DRESSING TALK No. 3

100% Increase in Orange Crop

Mr. R. L. Wells, Rialto, San Bernardino County, Cal., applied *Arcadian Sulphate of Ammonia* to a portion of his orange grove. The rate of application was four pounds per tree in two installments of two pounds each. The material was scattered in the basin March 1st and April 1st, each time just previous to an irrigation. This was in 1917, but due to hot winds there was no crop that year.

In 1918 the trees receiving *Arcadian Sulphate of Ammonia* produced at the rate of 648 field boxes per acre, while those without *Arcadian* yielded only 324 field boxes per acre. Estimating the value of the oranges at \$1.90 a field box, we have a gross increase of \$615.00 due to the *Arcadian Sulphate of Ammonia* which cost only about \$28.00 per acre.

Write Desk No. 5 for free bulletin No. 4 "Citrus Fertilization."

ARCADIAN SULPHATE OF AMMONIA IS FOR SALE BY

CALIFORNIA: San Francisco; Hawaiian Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Pacific Guano & Fertilizer Co., Western Meat Co., California Fertilizer Works, Los Angeles; Pacific Guano & Fertilizer Co., Pacific Bone Coal & Fertilizing Co., Agricultural Chemical Works, Hauser Packing Co., Hawaiian Fertilizer Co., Ltd., Southern California Fertilizer Co., OREGON: Portland; Swift & Co.

For information
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To keep thoroughly posted subscribers should read every advertisement in the California Cultivator columns.

Control of Black Scale

By Ernest Branton

It seems reasonably certain that the happy day has arrived when natural parasites will control the black scale pest. The search for

such parasites, their collection, breeding, distribution and protection, has taken 30 years time and tens of thousands of dollars, but the outlook seems to fully justify that procedure. On

December 10 official representatives from many counties, departments and citrus growers organizations gathered at Santa Paula to canvass the field where the most active and extensive of this control work has taken place. There were present a committee of three from the directorate of the California Fruit Growers Exchange, representatives of the state department of agriculture, several represent-

ing United States departments, seven county horticultural commissioners, a goodly number of county inspectors and a few invited guests. A printed program for the day was distributed by Commissioner Call, in charge of the meet. The first three stopping places were insectaries, those of the state (a branch), the Santa Paula Citrus Association, and the Limoneira Company. At each of these insectaries was shown the methods of breeding and care of the various insects, such as aphycus, cryptolaemus, rhyzohius and scutellista. The newest phase of this work is in the economy of collecting colonies for distribution, in the past a slow job. Now each insectary has a small hatching room where all is dark except for a small opening at one end covered with cheesecloth. The temperature is kept at about 80 degrees, and as the insects hatch they congregate on the cloth window pane and are collected with not more than one-tenth of the time and labor necessary under the old time "hide and seek" game.

From the insectaries the gathering made a canvass of several blocks of lemons on the Limoneira ranch where the aphycus had been liberated at a varying number of months ago. This story is well told by Horticultural Commissioner Ryan elsewhere, so we will go back to the Glen Tavern for lunch. At 1:30 an inspection was made of the work of Rhizobius ventralis on the Thille estate and that of the Aphycus lounsburyi in the Bloeing orchard. In the latter place no insects had been liberated, but the wind had carried them across the road from one of the Limoneira groves, and so thoroughly had they cleaned the trees that the owner gave up an intended fumigation, for the orchard a few months ago was decidedly "dirty" with black scale. The day's inspection was ended by a visit to the Sharp orchard to note further work of rhizobius.

Society Note

On the evening of December 9 the visitors who had arrived at Glen Tavern, 16 in number, were captured after dinner by former Horticultural Commissioner Brock and taken to his commodious home for an evening of pleasure. H. M. Armitage entertained with selections on the banjo and ukulele, Inspector Pickering of Orange County played the piano and a few of the visitors tried to sing, but with deplorable results. Games of cards were played and a series of checker games for the "horticultural" championship of Southern California. In the finals Commissioner Ryan capitulated to Inspector Pickering. Selections on the Edison phonograph were given by Mr. Brock until midnight, when the visitors journeyed back to the hotel and slumberland.

INCENSE CEDAR NOT AN INFERIOR TREE

Though incense cedar is not a rare wood pencil manufacturers and cabinet makers have difficulty in keeping a sufficient quantity of this material in stock. It is estimated that there is a supply measuring 11 billion feet in this country, of which ten billion are located within the boundaries of California. The trouble is that the heartwood of incense cedar is commonly honeycombed by a dry rot which makes a large part of it valueless for timber. On account of this experienced lumbermen consider incense cedar an inferior tree and frequently reduce estimates by 30 to 50 per cent. It costs as much to cut and bring to market a diseased tree as a sound one, and lumbermen hesitate to work with a wood which gives such a large average loss.

ANOTHER BIG CHERRY TREE

Noticing in your issue of December 4 that R. Atherton and W. J. McGrath have large cherry trees and in true California style invite comparisons, will say that I have a cherry tree growing on Orangedale Farm that measures ten feet two inches in circumference and is 70 years old, bearing heavily. This tree is located eight miles north of Santa Rosa, Sonoma County, the place that is known on the map as the home of Luther Burbank. Now let another brother speak—Sheridan Peterson.



Horticulturists at Santa Paula

From left to right: H. M. Armitage, assistant entomologist, Whittier state insectary; J. D. Culbertson, assistant manager Limoneira Ranch; Harry S. Smith, entomologist in charge of pest control, Sacramento; A. J. Flebut, United States department of agriculture, Fresno; J. N. French, inspector, Oxnard; E. A. Bennett, director California Fruit Growers Exchange; A. A. Brock, entomologist of Santa Paula Citrus Association (in rear); Horticultural Commissioner H. J. Ryan, Los Angeles County; Paul Howard, in charge Upland branch insectary; R. L. Knox, director California Fruit Growers Exchange; A. I. Rittue, inspector, Oxnard; R. H. Wilkinson, director California Fruit Growers Exchange; R. S. Woglum, fumigation and pest expert, California Fruit Growers Exchange; G. R. Gorton (the tallest), horticultural commissioner San Diego County; S. G. Essig, entomologist Limoneira Ranch; Victor Casner, inspector, Fillmore; E. S. Kellogg, horticultural commissioner Santa Barbara County; A. H. Call, horticultural commissioner Ventura County; C. Oleson, inspector, Fresno; F. S. McCloskey, inspector, Santa Barbara; A. M. Pope, inspector, Santa Paula; J. P. McCoy, horticultural commissioner San Bernardino County; C. C. Staunton, farm adviser Ventura County.

TO USERS OF PIPE

We are overstocked on the following sizes of PACIFIC SCREW PIPE and CASING. All of this stock has new threads and couplings, is STEAM TESTED and guaranteed for 150 pounds pressure all ready for immediate delivery.

80,000	Feet 2	-inch	O.D.*	Screw	Casing—I.D.*	1 1/4 -inch	Wt. Per	100 ft.	200 lbs.
30,000	"	2 1/4 -inch	"	"	"	2 -inch	"	"	234 lbs.
60,000	"	2 1/2 -inch	"	"	"	2 1/4 -inch	"	"	282 lbs.
30,000	"	3 -inch	"	"	"	2 3/4 -inch	"	"	365 lbs.
30,000	"	3 1/4 -inch	"	"	"	3 -inch	"	"	410 lbs.
40,000	"	3 1/2 -inch	"	"	"	3 1/4 -inch	"	"	460 lbs.
45,000	"	4 -inch	"	"	"	3 3/4 -inch	"	"	565 lbs.
70,000	"	3/4 -inch	Standard	Screw	Black Pipe—	"	"	"	113 lbs.
10,000	"	1 -inch	"	"	"	"	"	"	168 lbs.
20,000	"	1 1/4 -inch	"	"	"	"	"	"	228 lbs.
125,000	"	1 1/2 -inch	"	"	"	"	"	"	273 lbs.
10,000	"	2 -inch	"	"	"	"	"	"	367 lbs.
8,000	"	2 1/2 -inch	"	"	"	"	"	"	581 lbs.
15,000	"	3 -inch	"	"	"	"	"	"	761 lbs.
6,000	"	3 1/2 -inch	"	"	"	"	"	"	920 lbs.
3,000	"	6 -inch	"	"	"	"	"	"	1918 lbs.
2,000	"	8 -inch	"	"	"	"	"	"	2500 lbs.
3,000	"	6 -inch	Standard	Riveted	No. 16 Gauge	"	"	"	530 lbs.
2,000	"	7 -inch	Standard	Riveted	No. 16 Gauge	"	"	"	620 lbs.
5,000	"	12 -inch	Standard	Riveted	No. 12 Gauge	"	"	"	1690 lbs.

O.D.* Outside diameter.

I.D.* Inside diameter.

In order to move any part of this stock, we are making very attractive prices for a short time only. Should you be interested in pipe or any pipe fittings and valves, kindly advise us and prices will be quoted you. All of this pipe is subject to prior sale.

Pacific Pipe Company

237 Howard St.

San Francisco

Irrigation in the Orange Orchard

By William M. Bristol

IN responding to the request of the editor for an article under the above heading I must preface my remarks with the observation that some thousands of years experience in tilling the soil has not taught the human race all that it needs to know in connection with the art. And 30 years experience in orange culture on the Highland foothills has not convinced me that irrigation of the orange has been reduced to an exact science.

Perhaps the best method of considering the needs and the possibilities of an orange orchard is to regard it as one would a factory or a dairy; for it is literally an establishment for transforming raw materials into a finished and salable product. And I am persuaded that many a would-be orange grower has failed to get the highest possible returns from his orchard because, instead of trying to see how much raw material he could thus transform, he has tried to see how little he could get along with. The furniture manufacturer endeavors to have his machines and his employees transform as much lumber as possible into furniture, and his financial success is closely linked up with the quantity of his production. The dairyman does practically the same thing. Letting his cows go hungry or thirsty would not lessen his overhead expense, but would lessen his profits. I believe that the same logic applies with equal force to the orange orchard.

It naturally follows that a man who believes thus also believes in the maxim, "Never let your trees tell you what they need." There have been and there will be periods of scant water supply; but I can think of no reason why an orange grower should treat his trees unnecessarily to an artificial drouth. The orange tree is not only an evergreen but an ever busy tree. If the crop is matured it still needs moisture to keep the fruit plump and in good condition, and we whose orchards are on the dry and warm foothills know by experience that the Navel orange clings to the tree more tenaciously if it never wants for water. I doubt if any plant or animal profits either by feast or by famine. We know that an orange cannot stand still with profit at any stage of its development, and we know that even after it is apparently fully grown and ripened it continues to increase in size and weight.

Having discouraged false economy in irrigation during the period most nearly approaching dormancy, it should hardly be necessary to urge the free use of water at all other seasons of the year. Certain it is that if the beneficent cover crop is to be used in the orange industry the freest possible use of water must be practiced. After several years of experimentation with summer cover crops I regard it as a misfortune that California has not an unlimited supply of water to be used in their production. I am using 20 inches continuous flow of water on 45 acres of oranges—and wishing for more. For the summer cover crop loosens the soil as no cultivator ever did and at the same time puts humus into it.

It may interest some to know my method in this connection. During the first week in June alternate lands are sowed to cow peas, the other lands being kept under cultivation until August, when they are also sowed to Blackeyes, which make a quicker growth than the Whippoorwills. One two-horse team does all the work on the 45 acres, and that without a sign of being overworked. I have never seriously contemplated the purchase of a tractor, preferring to keep the pump in continuous operation in the production of cover crops whose roots leaven the soil and admit light and air and water. Verily, most of Nature's methods are better than the boasted inventions of man.

The editor also asks if I have any hints which will prove economical or valuable to any grower as to pumping or conveying or using water in the orchard. Just one, to those irrigators who use plunger pumps. I must tell of a new valve seat which I put in my pump a year ago and which has

proved such a success that I deem it my duty to tell others about it.

Most plunger pumps use a cone shaped clapper or valve on top of each plunger. These clappers have two seats, an inner and an outer one. For some reason which has not been definitely determined, the inner seat wears faster than the outer one, with the result that a considerable percentage of the water which should be pumped to the point of discharge is lost by slippage. Within 30 days after installing a new pump with a capacity of 20 inches this inner seat had worn to such an extent that it was lifting only 17 inches. I had the plungers pulled out, the cone shaped clappers removed and replaced by new clappers so made that the inner seat was cut away and replaced by two cup leathers which work against the center stem and close the annular aperture which was supposed to be closed by the inner seat of the old style clapper. After being in continuous use for more than a year these new fangled seats are still water tight and have required no repairs whatever. These two little interior cup leathers perform the same service, relatively, that the cup leathers on the outside of the plungers do; that is, they close the space that would otherwise exist between the two metal surfaces. I estimate the saving in water, in pulling of the plungers and in lathe work on the valves to be equivalent, in my eight inch pump lifting 20 inches of water, to \$2 per day. And the value of the water saved and transformed into oranges must be several times as much.

It should be remembered that the orange tree is not a native of our arid region, and it would be folly to try to educate it to flourish here without the necessary conditions artificially created. There are only two conditions under which an abundance of water can result in injury to an orchard. First, on a fine grained soil irrigating on too steep a grade may sluice away the extremely valuable top soil. Second, on a very coarse and loose soil too much water will leach out the nitrogen into the under drainage. In the Highland and Redlands region many acres of the former soil has been protected by covering it with a coarse and loose soil, and many acres of the latter has been benefited by covering them with a layer of fine grained soil which stops the pores and prevents the leaching process from carrying away the fertility. This wholesale transfer of soil is an expensive practice; but many thousands of loads have been so transferred and always with marked results. In the case of either class of soil the practice helps to conserve the life giving fluid and is a valuable adjunct to irrigation as well as to fertilization.

There is a rather limited area in California where all conditions are favorable to orange culture, and this limited area is destined to become increasingly valuable as time goes on. It will pay to provide water for the warm and sheltered foothills at almost any cost, and the wise orange grower will use as much water as his trees can absorb—provided always that money can buy it.

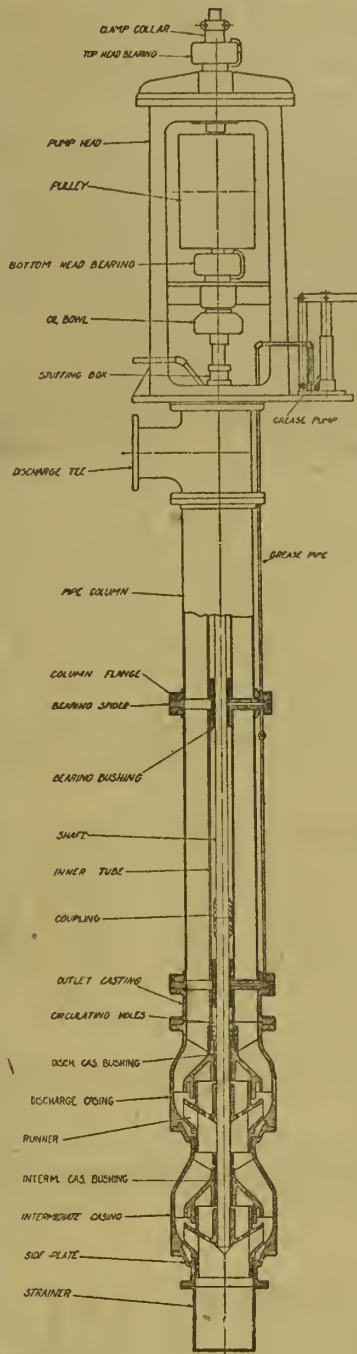
TRACTOR COURSE

The second annual tractor and auto short course of the Fullerton Union High School will be held on the school grounds, January 17-22. Mornings and afternoons will be given to study of the construction, operation and repair of the leading local tractors, while the evenings will be devoted to a like study of the leading local automobiles and trucks. The course will be given by auto and tractor experts and will be free to as many adults as can be accommodated.

Directors of the California Associated Raisin Company and the California Peach and Fig Growers have announced a building program for the coming year involving the expenditure of \$1,100,000. The Peach and Fig Association will spend \$500,000 for a plant in Fresno and will erect another in Dinuba at a cost of \$75,000.

Krogh Pumps

THE KROGH DEEP WELL TURBINE



has been built for eight years. The first Turbine built by us is still in successful operation after running eight years. These pumps are so designed and constructed that the main parts do not wear. All bearings contain removable bushings which can be replaced when worn, but the expensive bearing container itself does not wear.

The shaft is made in ten foot units and when worn at the bearings, as it will in time, a short stub about one foot long can be inserted, raising the shaft up to a new bearing point. This can be repeated many times before the shaft is entirely worn and useless. Where the shaft passes through the pump casings the shells are protected with bushings to protect the shells.

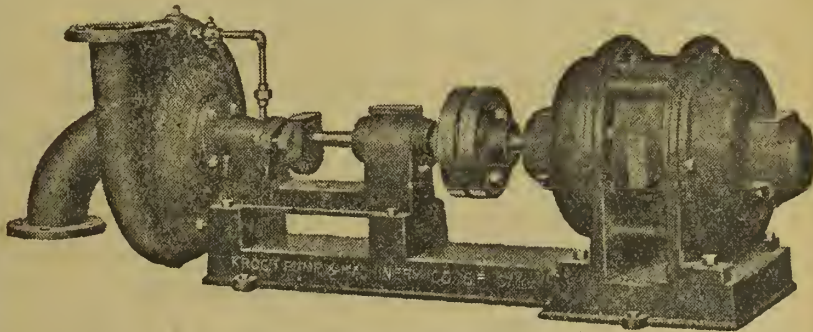
The pump head of new and improved design we claim is superior in construction to anything on the market. This head is very heavy and rigid and has a heavy radial ball bearing on each side of driving pulley. These bearings are finely constructed, the heavy ball bearings being packed in grease and require new lubricating at long intervals only. The construction is such that the grease cannot leak out nor dust get into the bearing. The discharge from pump head is below the floor line which results in the pump house floor being unobstructed and can be evenly floored over. If motor connected, a flexible coupling is provided, carefully balanced, machined and polished all over. If belted, a balanced pump pulley heavily crowned.

Our pump column is in a class by itself. Column is made in ten foot lengths, all joints being flanged, the bearing spider being held between each flanged joint and is centered therewith, insuring that all bearings are in line, no matter how often the pump is taken down.

No pipe tongs are required to install our pumps as all joints are fitted with flanges before pump is shipped.

These pumps are built in sizes 9 inches in diameter, having a capacity up to five hundred gallons from a ten-inch well to pumps twenty-four inches in diameter and having a capacity of four thousand gallons per minute.

WRITE FOR BULLETIN 85C



We also build a complete line of Horizontal and Vertical Centrifugal pumps for either direct connection or belt drive. All our pumps are provided with our Patent Hydraulic Balance which prevents end thrust automatically and requires no setting or adjustment of any kind. This Automatic Balance is a feature found on no Pump except a KROGH.

BULLETIN 82C

KROGH PUMP CO.

149 Beale Street

San Francisco

Efficiency in Irrigation

By G. E. P. Smith



HERE is such a thing as efficiency of irrigation. It may be defined as the ratio of water beneficially used to the total water diverted onto the land. The water beneficially used is the water that is actually drawn upward by the plants (not including weeds). The losses of water are by evaporation from the soil direct, by seepage downward beyond the reach of plant roots and willful or careless waste, which includes irrigating the county highways. These losses aggregate from ten to 80 per cent of the water applied, depending on the method of irrigation and how well the irrigation is performed.

Another loss of irrigation water is that by seepage and evaporation from canals and ditches. This, the greatest loss of all, should not pass without comment. Nearly all of this loss is by seepage. Measurements of the seepage losses on scores of canals and ditches have been compiled and published. The results are startling. Losses of over ten per cent of the water per mile ditch are not infrequent, and it is concluded that "a large percentage of the water estimated at 40 per cent of the amount taken in at the heads of the main canals, is lost by absorption and percolation along the routes." The records of the U. S. reclamation service in the Salt River Valley state that the canal losses between the diversion dams and the points where water is delivered to the water users have been 40 to 45 per cent of the total amount diverted. While the losses as given in the records may be overstated somewhat, it is certain that at least one-third of the water diverted is lost in the canals. The losses from the Avondale canal are 40 per cent in the first four miles.

Cement Pipe for Irrigation Conduits

The great advantage of the use of

cement pipe for irrigation conduits lies in the fact that the seepage and evaporation losses from open ditches are prevented. These losses are appalling. Dr. Samuel Fortier, chief of irrigation investigations, U. S. department of agriculture, states that a large percentage of the water, estimated at 40 per cent of the amount taken in at the heads of the main canals, is lost by absorption and percolation along the routes. For small canals these losses are often over five per cent per mile in adobe soil and 15 to 20 per cent in porous soil. In Southern California there are extensive distribution systems that are piped throughout so that the loss of water in distribution is practically nothing. As a result of this and other economies the duty of the water is nearly nine acres per miner's inch of flow. The average duty of water can be increased greatly by the use of cement pipe for small ditches and concrete linings for larger ditches and canals.

No practical method of preventing canal losses has been found except by the use of concrete linings for large canals and cement pipe for small canals and for farm ditches. Linings and cement pipe lines have been highly developed as to permanency and efficiency, and the cost is so low as compared to the value of the water saved that it is only good business economy to make the investment. Linings and pipe lines have many additional advantages. They obviate the need of an expensive drainage system to prevent waterlogging.

The maintenances of open ditches is difficult. Weeds and algae grow rankly and occupy the whole cross-section of the ditch. Bermuda and Johnson grass thrive along the banks. Unless this vegetation is removed at frequent intervals it obstructs and diminishes the flow. Ditch cleaning is very expensive. A small ditch near Tucson, before it was lined,

cost \$80 per mile annually for cleaning alone. In the Yuma Valley the cost of cleaning lateral canals by hand is about \$550 per mile. Furthermore, gophers perforate open ditch banks and cause the waste of rivulets for days or even weeks before the holes are repaired. Sometimes the holes enlarge and the ditch bank breaks, with consequent loss of the entire stream. A break on the Turlock canal of California in 1910, thought to have been due to a gopher hole, caused

ing. Less labor is required, also, to irrigate from pipe lines than from open ditches.

Again, there is a great saving of land. Open ditches occupy about one per cent of the land, but the necessity for turning teams on each side makes the loss three or four per cent. An open ditch is a great obstruction and interferes with farm operations. With cement pipe the loss of land is practically nothing.

The writer has often said that the



Economy in Time and Water Secured by Modern Equipment
Metal gates on concrete pipe in irrigation mean greatly increased duty for water and efficiency of service.

1,000 feet of the canal on a steep hillside to be washed out, and the canal was out of service for six weeks of the period of maximum need for water; the actual cost of repairs was \$20,000, but the damage to crops was estimated at \$1,000,000. The maintenance of cement pipe lines is so small as to be negligible.

Another reason for using cement pipe is that distribution lines can be run through low places and over ridges; it is not necessary to follow grade lines, for the water can be carried under pressure through the low portions of the line. This makes it possible to square up the fields much better and to reduce the cost of grad-

only valid excuse for not adopting concrete lining or cement pipe is that the irrigation company or association or the rancher does not have the money and does not know where to get it.

In many irrigated districts water supplies seem to be quite fully utilized, but when the losses of water are analyzed, we find inviting possibilities of extensive increases in present acreage by changing methods and practices to eliminate waste.

Well Intentioned. "What is the use of this article?" asked a shopper.

"I really don't know," replied the clerk; "I think it is intended to be sold for a Christmas present."—Harper's Magazine.



Teague Quality Trees

Citrus and Tropical

Grown from record buds on selected root stocks and properly cared for from seed to tree, ready for the planter. A combination that insures a strong vigorous tree which will produce maximum results both in quantity and quality of production.

Whether planting for home or commercial purposes, you cannot afford to use anything but the best. *TEAGUE QUALITY TREES* fill every requirement.

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Those varieties recommended by the California Avocado Association, all budded on hardy Mexican seedlings.

Grafted from the best large fruiting varieties.

*The Supply of First Class Citrus and Tropical Fruit Trees for 1921
Planting is Limited and Those Wanting the Best
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Planting an Orchard

By J. B. Neff



THE success of an orchard depends on many things, among which the selection and planting of the trees and the early irrigation of the orchard are very essential. A soil with good drainage is needed and if it is one that is easily cultivated and retains moisture to a good degree, so much the better. Hardpan at any depth is to be avoided, as well as shallow soils underlaid with coarse sand. Some varieties, such as pears, will tolerate some alkali, but the less alkali the better, and most fruit trees will not succeed in alkali soil. The land should be graded to an even slope to aid in the equal distribution of the irrigation water and to prevent uncovering the roots of the trees in one part of the orchard and depositing too great a depth of soil over the roots in other parts. Fertile soil is greatly to be desired, as the process of building up fertility in depleted soils is both slow and expensive.

Trees should be bought early and only the most vigorous trees of any variety should be planted. The orchard rows should be arranged with reference to the plan of irrigation rather than according to the points of the compass. Do not plant too many trees on an acre unless they are planted with the purpose of taking out alternate rows after they have become too close for profit. This taking out, though, is seldom done and the orchard would, in many cases, be better if fewer trees had been planted at first.

Stocky trees are better than slender trees, and if peach and apricot are four to six feet in height with good root systems they will make better orchard trees in less time than if the taller and more slender trees were planted. The roots of these should be clean and free from diseases. The bruised roots should be trimmed with a sharp knife, leaving only sound roots, and the planting should be done as soon after taking the trees from the nursery row as is possible. Do not put fertilizers of any kind in the holes when planting trees. Stable manures are likely to heat and ferment, thereby damaging the trees, and commercial fertilizers are too concentrated to come in contact with the roots without damage to the trees.

Planting

Dig large holes and plant the tree so that when the soil has settled the tree will stand at the same depth as when growing in the nursery. Use only the surface soil to fill around the trees, and where the trees have naked roots, arrange the roots by hand, working the soil among the roots and so there will be no roots crossing and touching. Firm the ground slightly but do not make it compact at any time. Deciduous trees should be planted in January and February, if possible, as they are dormant at that time and will be better established in their new location when the growing season begins. Oranges, lemons and other citrus trees will be better if planted later in the year, when the growing season is beginning. It is best not to risk planting citrus trees without taking up with balls, though we have been shown orchards taken up with naked roots that did well. This, however, was done in damp weather and early in March.

After the deciduous trees are planted they should be cut back to a single stem 18 to 24 inches high. Citrus trees should be cut back so as to leave not more than six inches in length of branches above the original heading which was done in the nursery. These branches should be thinned so as form the desired head for the tree and at least half of the remaining leaves taken off so as to prevent too heavy drain on the very much depleted root system.

Irrigating

We will assume that an ample and perpetual supply of good water has been secured before the planting has been done. This must be free from alkali and other injurious salts, as the continual addition of small quantities of these salts will finally accumulate an amount that will render the land

useless for orchard purposes. It is good practice to run water around the young trees as soon as planted. This settles the soil and closes any air spaces that may have been left in filling the holes, and brings the soil in close contact with the roots, prevents injury from drying winds and leaves the young tree ready to begin its growth when the warmer days come. A small stream of water in a single plow furrow will be all that is needed at this time.

The irrigation of newly planted trees should be very frequent during the first summer. The roots have been almost altogether removed and the remaining parts are short with but few fibers, consequently can reach but a small area of soil. Trees as well as other plants can use their food only in a liquid form, and if the soil is dry around the points of their roots growth will stop until more moisture is sup-

plied, either by irrigation or by the movement of soil water from some distance, and this movement is often so slow that the trees are checked and so lose some weeks in recovery when a new supply of water is put around them. It is safe to irrigate young trees every ten days during the first four months after planting and every two weeks during the balance of the growing season. It is sometimes said that fewer irrigations will compel the roots to go deeper after moisture, but this is a mistake. If the soil is cultivated to a proper depth any roots that might be inclined to come too near the surface will be cut off, and if there is water at the lower level the roots will reach for it in that direction. These first summer irrigations need not take a strip of more than six feet wide for the first three months, but after that should include a space of at least 12 feet in diameter at the tree. Smaller amounts of water can be used than is required for larger trees, but the cultivation should be thorough after each irrigation.

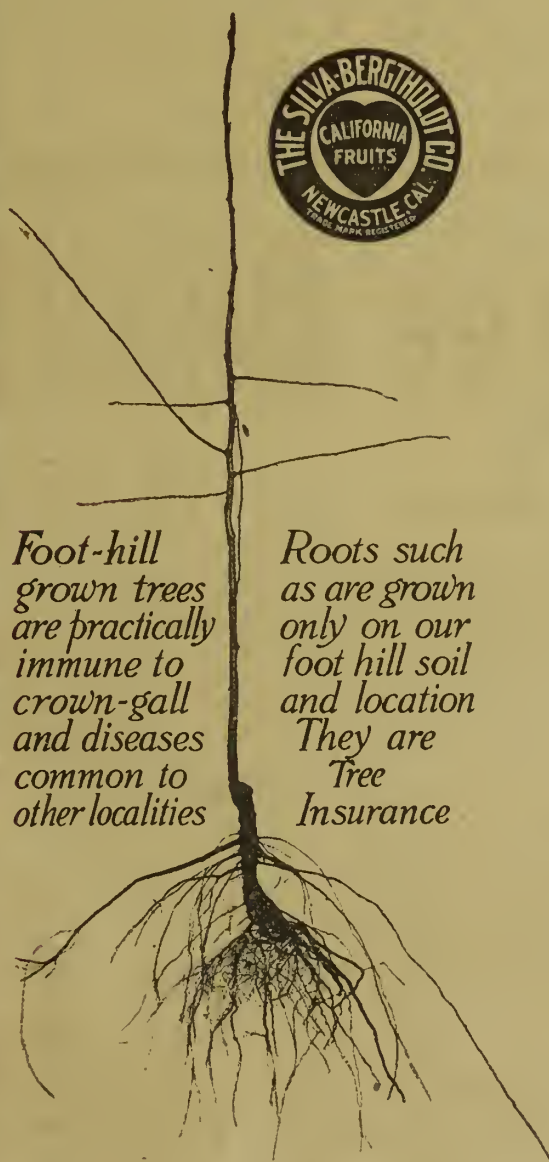
AVOCADO DISEASES

In a report of the Florida State Horticultural Society, H. E. Stevens says that among the troublesome fungus diseases of avocado in different countries, rusty blight, root rot, and anthracnose are regarded as the most serious. The first two named are not known to occur in Florida, but injury has been caused by anthracnose or closely related diseases. Leaves and fruit are attacked by a fungus supposed to be a *Gloeosporium*. A *Colletotrichum* is often found on diseased leaves and fruit spots. This is controlled by timely use of Bordeaux mixture.

Of two apparently new and undescribed diseases, one is a fruit spot. The other, primarily a disease of young tender foliage and named avocado scab, has been proved by a series of experiments to be caused by the same fungus as that producing citrus scab.

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*Roots such
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The wise farmer who set out an orchard five years ago has, from this year's crop, paid for his original investment plus the entire five years' expense of bringing it into productiveness.

In another five years the present readjustment of conditions will be forgotten. The wise man who plants trees today will be well along the road to independency then. Don't delay. Look forward to your future and plant trees now. Prunes, Pears, Plums, Cherries, Apricots, Clingstone Peaches, Freestone Peaches, Almonds, Olives, Walnuts are all profitable according to the adaptability of your location.

Trees are 85% sold out. Give us your order now—while our available assortment of foot-hill grown trees is still complete. Submit us today, a list of your tree wants, for prices.

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Household Department

COME OUT OF YOURSELF

Don't live like a hermit inside of yourself—
Forgetting, forgotten of men:
There's something in life besides piling the self—
Come out in the sunlight again!
Though money is something to help you along,
It isn't as good as a smile;
There's health in a laugh, there is wealth in a song—
Come out of yourself for awhile!

The fellow who lives in his own little soul
And never comes out of his shell
May gather a million, may garner a roll,
But what is the good in a cell?
Why lock yourself up in a prison of pride
And, when you have come to the end,
Have no one to care that you live or you died,
Because you had never a friend?

Come out of yourself and step into the sun,
Come out of the gloom of the cloud;
Come out of yourself and get into the fun
And walk in the midst of the crowd.
For troubles, like mushrooms, will grow in the dark,
But they can't stand the glow of the day—
The perfume of roses, the song of the lark,
Are waiting just over the way.

The world may go wrong and be freighted with care,
Misfortune may handle you ill,
But still there are plenty your troubles to share
And give you a lift on the hill.
If you have forgotten fraternal delights,
Your lips have forgotten to smile,
Here's something to cheer you, to set you to rights—
Come out of yourself for awhile!
—Douglas Mallock in the Classmate.

GETTING MOTHER'S PRESENT
(Concluded.)

"Joe Brown's wife is going to get a nice present; he's giving her ten one dollar bills."
Mr. Bengé put this out as a feeler.
Mrs. Bengé sniffed:
"Kate won't thank him for that."

"How did she know he chose it himself? What was it?"
"Link chose it, all right; no one but him would have bought anything so out of keeping. It is a red velvet toilet case, with cut glass bottles. It must have cost a good deal, but the perfumery Link had bought to fill the bottles"—Mrs. Bengé laughed, almost hysterically—"came, I should say, from the ten cent store."

"You call that a beautiful present which you say is out of keeping? I know you can't bear cheap perfumery."
It was a beautiful present, and I abominate cheap perfumery, but if you had bought me that present, thinking to give me pleasure, of course I would love it."
"You mean to say you'd like anything I chose for you, whether you had any earthly use for it or not?"
"Of course," Mrs. Bengé hedged, "I'd rather have a gift that I like, and one that I wouldn't feel like buying for myself; but I'd rather have a gift you chose, even if it wasn't as suitable as one you were told to buy."
"I'll go to town tomorrow and buy the first fool thing I see," Mr. Bengé thought to himself. Aloud, he said, sharply: "That's just like a woman, tickled to death with a glimmer she has no earthly use for, and turns up her nose at a present a man buys if she thinks he had a hint that she would like it."

It was almost bank closing time when Mr. Bengé reached town next day, and he hurried in to deposit his corn money. While making out his deposit slip, he noticed the banker's daughter come in to speak to her father. Mr. Bengé caught the first sentence, and stopped to listen. The girl was apparently talking about Christmas gifts.
"Oh, father," she said, "there is the

In the Garden of Years

He had pulled an easy chair up to the fire and now sat nodding drowsily in the warmth. For the last dozen years he had watched for the birth of each new year in this fashion, and now he sat, waiting patiently for the striking of the clock in the distant steeple. The last piece of coal in the grate fell apart with a tiny spurt of flame. The nodding head bowed lower.

The bell began striking the hour—
With the first intonation, the man was suddenly alert. The fire in the grate, the mantel and the wall of the room had vanished. He seemed to be standing upon a slight rise in a prairie, gazing with interest over the sloping ground before him. Below him an old man, clothed in a single enfolding garment that was girdled at the waist, swung a scythe through a rank growth with an ease and strength that set his years at naught. It was a peculiar growth that he was harvesting, but the man on the hilltop, with the acute understanding that had suddenly come to him, knew that this was Father Time reaping the harvest of deeds in his garden of years. As he watched the rhythm of the strokes, a voice, as clear and mellow as the tones of a bell, came to him.

"We reap what we have sown. Good seeds sown in proper soil give forth a bountiful harvest; poor seeds sown in any soil yield only barren stalks. Come, you shall see the harvest of your deeds."

The man felt a touch at his elbow and he was gently pushed down to where Father Time had just finished a section of his work.
"Here is the reaping of the seeds you have sown in the past year," came again the bell-like tones. "You see the yield is not large. Over there are a few stalks with well-matured heads. They represent your action when you gave three days of your own valuable time to harvest your neighbor's grain when he was badly wounded by the knives of his binder. The richness and quality of the grains will make up for many of these barren stalks. Here is one only partially filled out. It is for the time when your 'year-man' lost his baby and you regretted more the time he was forced to leave his work than you did the great sorrow that had come to him. A kind word then would have brought this grain to full maturity. All these poor, undeveloped wisps of grass you see in this window are the good deeds you could have done, but did not; a kind word you did not speak; a frown you preferred to a smile; a favor you could have granted but would not. The pile is large, but it could be larger."

"Over there you see a new bed, with the fresh, green plants just peeping through the earth. That is the bed of your deeds for the coming year. You can do much with them, if you will. You can plant more and better seeds so that your harvest at the end of the year will be full and rich. A little tolerance for the weakness of others, a smile for those that honor you, a kind word to the ones in error, sympathy for the great number in trouble and sorrow, a strong hand to the weak and stumbling; all these and many more are the things which, if planted with the deeds of every day, will weed out the puny stalks of your present harvest and bring from the richness of your life a reaping which will sweeten and gladden the advancing years."

Slowly the scene receded into the distance. A mist arose from the earth and closed the fields from view. The bell-like voice that had started strong and full, now grew fainter and fainter as though borne away upon invisible wings. The coals in the grate began again to glow in the darkness as the room took shape. The man slowly stretched out his arms—
And the bell finished striking the hour.—Lorenzo D. Van Doran.

She will likely spend it all for the house and the children. Money is a fine gift from anyone but your own husband. Joe wouldn't think a receipted grocer's or store bill was a Christmas present for Kate, but that's what money from him to her amounts to. She won't have anything for herself to show for it, as Mrs. Marsh has. You know I called on Mrs. Marsh today, John. It's three years since her husband died, and she brought out his last Christmas gift to show me. It was a beautiful present. She cried like a baby over it, because it was the last thing Link chose for her himself."

dearest silk petticoat in Baum & Daniels. You know they are having a sale—and the petticoats they are offering at from one to ten dollars are worth twice that. If mother saw that gray in the south window, she'd love it; it's a perfect beauty—a ten-dollar one."
Mr. Bengé saw the two exchange glances. "See here, girl," the father said, in mock sternness, "I claim the privilege of choosing your mother's Christmas gift myself."
"Well, anyway, her skirt measure is forty inches," replied the girl.
Mr. Bengé considered. A petticoat would make Mrs. Bengé a fine present.

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3442. A Youthful Gown.—Cut in seven sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A medium size will require 4 3/4 yards of 41 inch material. The width of the skirt at lower edge with plaits extended is about 2 yards. Price 10 cents.
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He felt grateful to that girl. When he carried his checks and deposit slip to the window, he said: "I have a girl about the age of yours; she's away at school, coming home for Christmas, though."

"They come in handy the year 'round—especially when presents are in order. I'm afraid most special occasions would slip by without my remembering them if it wasn't for my girl," replied the banker.

"I'd rather do a day's work than to tackle an hour's shopping, but my wife wouldn't be satisfied unless I bought her present myself," ventured Mr. Bengé.

"Mine wouldn't either," confided the banker. "If it wasn't for Sue, my daughter, I'd be lost."

Mr. Bengé made his way around to Baum & Dandels. Women were crowding into the store. One lone man made little headway in the good natured throng. "It's worse than a stampede of cattle," he sighed.

"Anything I can do for you, sir?" an attentive floor walker inquired.

"I want a petticoat for my wife."

"Did you want an ever-wear, near-silk, or all-silk. We have some splendid bargains in taffetas."

"I don't know a blamed thing about them. I want something frivolous enough for a Christmas present—something that a woman won't use every day."

"Show the gentleman some near-silk petticoats in gray, Miss Fay—something about five dollars, sir?"

Mr. Bengé nodded.

"I'll be disengaged in a few minutes," said the girl. The floor walker went off to other customers, and Mr. Bengé waited. Customers came and went, apparently the girl had forgotten him; he wasn't sure that he remembered her, and no other clerk came to him; the throng of eager women picked them up before he had a chance to claim one. He heard a lady say to a clerk: "I'll take this gray and blue. Send them to the transfer desk, please, and mark collect. I have other shopping to do, and will pay at the desk."

If he could get that floor walker again he, too, would have the skirt sent to the transfer desk, or if he could catch the eye of a clerk for a minute. At the insistent ringing of the telephone bell, he saw the clerk at the transfer desk leave her work to take down the receiver. Why hadn't he thought of that? Of course the telephone was always answered.

Making his way out of the crowd, he went into a telephone booth in the drug store across the way and called up Baum & Dandels.

"This is Mr. Bengé talking," he said. "Can you wrap me up a five-dollar near-silk, iron gray petticoat, skirt length forty, and have it at the transfer desk in fifteen minutes? All right, I'll call in fifteen minutes, then, and pay at the desk."

Fifteen minutes later a happy man was carefully storing away a box bearing the label of Baum & Dandels, under the buggy seat. Mr. Bengé had finished his Christmas shopping; he had chosen a Christmas gift for his wife.

"Christmas morning Mrs. Bengé shook out the folds of the lovely new petticoat hanging over the chair by her bed. "It's what I've always wanted, and never believed I would have. It's almost too good to be true," she exclaimed.

"I kind of thought you'd like it," Mr. Bengé stretched his feet out luxuriously towards the fire, the better to see his new slippers. "I'd rather have these slippers, myself."

"Did you suggest that he get me this skirt?" Mrs. Bengé stopped in the work of getting dinner to ask Sallie.

"Indeed I did not. I didn't suggest anything to him. Father always gets his Christmas present himself," Sallie replied with spirit.—Wallace's Farmer, Des Moines, Iowa.

We'll labor and battle and push our way upward
In days that the incoming New Year will bring.
From the grave of the old to the brave and the bold
Success and achievement will certainly spring.

HINTS FROM HOUSEKEEPERS

Cold Compress on Throat

I very much enjoy reading the household page of the Cultivator and want to tell the readers, especially the mothers of children, a sure and almost instant relief for cough at night. Just a plain cold wet compress on the throat. About four thicknesses of cloth just large enough to cover the throat for the wet with plenty of dry over it, secured by a rather thin bandage about the neck. A meal sack folded to four thicknesses makes a fine bandage. Some think flannel necessary when compressing, but heavy bandages make the back of the neck too warm.

I was brought up on compresses of various kinds, my father being a physician of the hygienic-therapeutic school, but we did not know of their wonderful value for coughs until quite recently my little six year old boy began coughing after getting in bed. Thinking each time it would be the last, I didn't go to him for an hour, as I was in bed too, but as he didn't seem to be getting over it I got up and put the compress on his throat and he stopped almost instantly, gave one cough, a second time not much more than a suggestion of a cough, and that was the last all night. It has helped when nothing else would, so I want other mothers to know of it.—Mrs. A. G. Shell, Rumsey.

Candying Apples

Do you think the enclosed is what "Subscriber, Salinas," has in mind for candying apples for her children's party? At any rate, it may be of use to her and I am also telling her of a pretty way to serve ice cream for the children which may appeal to her. I surely thought it both novel and beautiful.

Here's hoping this is what she wanted, and with best wishes for a "Happy Christmas and bright New Year."—Mrs. A. Stainton, San Francisco.

Dipped fruits covered with a frosting of fondant are very delicious. Here is a recipe that if followed exactly is sure to be successful: To 2 cups granulated sugar add 1 cup hot water and 1 large tablespoon glucose, mix well, cover saucepan and allow to boil without stirring till it forms a soft ball when dipped in cold water. Take from the fire and pour into an earthenware bowl and stir constantly one way till smooth and creamy. If it is found to be brittle, return it to the fire with a little hot water and boil up again. For dipped fruits, however, the fondant should be in a soft, creamy stage and it is well to keep it slightly warm by placing the bowl in hot water. The fruit, which should be firm and carefully dried with a cloth, is dipped piece by piece into the mixture and then laid on oiled paper to harden. If the coating is not thick enough, dip again. Canned as well as fresh fruits may be prepared in the same way. Delicious candies are made by dipping glace cherries in fondant and then rolling them in chopped nuts.—Mrs. A. Stainton, San Francisco.

"Illuminated Ice Cream"

Here is a pretty way to serve ice cream at a children's party that I saw on an ocean liner. The cream was served in blocks, a small piece was cut out of the middle of each and replaced with a tiny bowl made from a piece of cardboard turned up at the corners and having a lighted candle standing in it. This was managed by dropping a bit of melted wax in the bottom of the bowl to hold the candle upright. The candles were lighted at the last minute and the cream served immediately with the lights in the chandelier turned out. This "illuminated ice cream" produced a fairyland effect and children who have never seen it are sure to be enthusiastic about it.—Mrs. A. Stainton, San Francisco.

Oil Pickles

Here is one worth saving till pickling season comes round again. They are delicious: Two dozen medium sized cucumbers sliced, 1 pint vinegar, ½ cup olive oil (or salad oil), ¼ cup salt, ¼ cup sugar, 2 ounces mustard seed, 1 tablespoon celery seed. Mix and let stand 2 hours, then can cold.—Amanda C. Snyder, Glendale.

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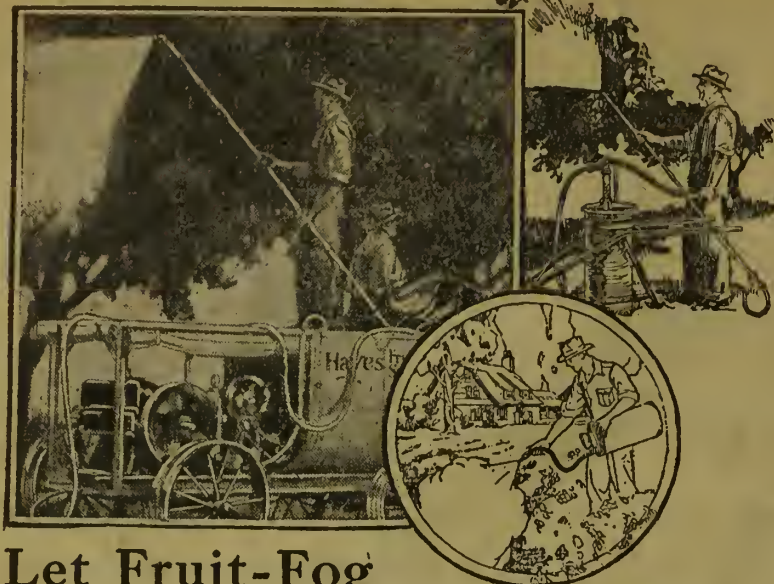
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IRRIGATING THE VEGETABLE GARDEN

By A. R. Gould



It is because we have so often seen crop failures due to lack of moisture that we feel compelled to impress upon our readers the need for real efficiency in irrigation. Water is of first importance to plant life, and we must not forget that water plays a remarkable part in relation to crops. Water passing through the plant carries with it elements which contribute to its growth, and water passing through the soil, eventually evaporating from the surface, brings with it plant food held in solution, and this is taken up by the roots. It must also be remembered that some soils have a greater water holding power than others; heavy clay soils will have a greater water capacity than light sandy soils; and these facts must be taken into consideration when this great question of irrigation arises. Without the aid of water plants would starve, as it holds carbonic, humic and other acids in solution, these bringing into solution the ash ingredients of plant food. Water, therefore, is the medium of transport for these very necessary elements. With soil conservation we shall deal in later monthly notes, but there is always a considerable loss of water by evaporation, especially in the warmer sections of our state. Hence this is a very important factor and must not be lost sight of. As our rainfall varies considerably between the extreme northern counties and the more central, being from 69 to about 11 inches, and not nearly sufficient in the latter, it is necessary to resort to irrigation, and a system should be adopted which is thorough. There are many ways of irrigating. The most commonly used is the furrow method, and this furrow, made two inches wide and three inches deep, may be plowed out with the wheel cultivator plow or drawn out with the hoe through the rows of the crop. These furrows are then well flooded from time to time and supply the moisture directly to the plant. If a galvanized or wooden trough is made with holes at the sides, one to two feet apart, being controlled by slides, the water may be supplied through this to the furrows all at the same time if desired. Some large truck gardeners make beds two feet wide, bank the soil up around the edges six inches high and sow their crops, such as beets, carrots or lettuce, broadcast in this area, flooding it before sowing, which supplies enough moisture for germination, then flooding again after the seedlings are well through the ground. If the sprinkling system is adopted care should be taken to leave the sprinkler on the plots long enough to allow the soil to become well saturated, and this is not accomplished in five or even ten minutes. If you wish to find the distance or depth of moisture, try it with a spade. The moisture should be several inches deep. We always feel sorry for those who fool themselves with the gentle hand sprinkling movement lasting usually long enough to lay the dust. This is not effective, but a large number there are who practice it, and then wonder why they have no luck or poor crops. We never wonder; we know. There are a number of very satisfactory sprinklers and time saving automatic sprinkling systems on the market.

We trust that your New Year's resolve will be to follow this, the first and most important principle of irrigation. We not only desire to convey to our readers best wishes for the New Year, but much success, and we hope that we shall be of service month by month.

DO YOU KEEP RATS?

Rats invade the home, contaminating pantry and storeroom, destroy floors and doors, eat and spoil food and spread the most horrible of diseases. It costs Great Britain \$200,000,000 a year to feed its rat population. It does not cost the United States any less. Great Britain now has inaugurated an extensive campaign, and at stated intervals "rat weeks" are set aside all over the kingdom for the destruction of rats and the abolition of their nests and breeding places.—B. A. R.



BOOTH

The new starched collar model

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Save Your Tie, Time and Temper

Hall Hartwell Co., Makers, Troy, N. Y.

A Vineyard

On the best of grape soils
In a proven grape district
With complete water rights
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Terms:

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Interest at 6%	

A TEN ACRE vineyard in the heart of Southern California's most prosperous grape district with the Valley and Foot-hill Boulevards on either side of you and border trees all planted, will cost you only \$1000.00 down and \$250.00 a year until your vines are in bearing. All care for the first three years will be in the hands of one of California's most able vineyardists at no cost to you. Write today to

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INSURE YOUR TREES AGAINST INFECTION

Your orchard is a valuable investment. To make sure that every tree produces a maximum return, protect pruning cuts or other wounds from infection with PABCO PRUNING PASTE. Ask your dealer. Manufactured by the Paraffine Companies, Inc., San Francisco, Calif.—Adv.

IRRIGATING THE YOUNG ORCHARD

By E. L. Koethen



We are told that the early settlers at Riverside were in some cases so impatient to begin planting their orange trees that they planted before the water was ready to spread on the land, so that they had to carry water from a neighboring brook in carts and water the newly set trees by bucketfuls for the whole first season. This was a laborious and expensive process, but it succeeded, and the trees which were seedlings grew, and are now large, thrifty trees.

We cite this now, not because we would recommend such a primitive method of procedure, but in order to show that in spite of crude methods success may be obtained. It has since been shown that in order to obtain large, thrifty trees quickly it is best to irrigate the entire surface of the newly planted orchard from the start, though some planters only irrigate one furrow at first, and when we first came to California we were told that the rule was one furrow the first year, two the second on each side of the trees, and three on each side the third year. The reason this method is not the best is that it encourages the roots to forage out farther from the base of the tree to have the whole space between rows moistened, thus a more extensive root system is encouraged from the start.

In order to make this practice finance itself, it is good practice to intercrop the orchard. Preferably this intercrop should be legumes. At the experiment station they have brought the experimental trees up to bearing age in this way. The crops of beans raised between the rows have paid for the cost of caring for the newly planted orchard. Thus not only have they obtained larger trees in a given time, but the soil has been enriched by the process.

The modern planter plows a deep double furrow where the row of trees is to be located. That is, he throws the soil both ways in the furrow. This reduces the labor in digging tree holes. When the planting begins he has a stream of water ready and carries it from hole to hole as fast as possible after the planters. Thus, as soon as possible after the tree is planted the hole is wet up, and the stream of water is carried around the tree on one side, in order that it may be carried on to the next tree. This insures quick root action and a rapid growth of the trees.

The time intervening between the planting and the next irrigation should be governed largely by local conditions, such as weather, nature of the soil and the rapidity of evaporation. But on general principles the next irrigation should follow in about two weeks. If the planting has been in the spring, the two weeks irrigation should be kept up during all the hot months. After that the time may be lengthened according to the judgment of the grower. On general principles irrigation should never be applied until the soil has sufficiently dried to be friable. It is just as important that the soil should be aerated as that it shall be kept uniformly moist. Soil that never becomes friable cannot allow the air to penetrate its texture and becomes waterlogged, which can only be a growing condition for water plants. It is, perhaps, a nice point, calling for experience as well as judgment, to determine just when the plant will receive the maximum benefit from irrigation. But it is perhaps better to err on the side of keeping the soil too wet during the first few months than to allow it to become too dry.

EFFICIENCY EQUIPMENT

With scientific methods of farming and fruit raising being employed in ever greater degree and more intensive cultivation of irrigated land becoming an economic necessity, it is natural that there should be a growing demand for better methods and conservation in the handling of water for irrigation and more accurate means employed for its equitable distribution and measurement.

There are such an infinite number of special conditions existing at one point or another in every water system that it is usually impracticable to adopt any one method to fit every

case, let alone find one that would be universal. But there are certain broad rules and codes of practice that do properly apply to every business undertaking, and there is no more excuse for ignoring or neglecting them in the case of water production than in any other line of business. These are to establish definitely, first, the quantity and cost of production, next, the normal distributing loss, or handling cost, and, finally, amount of actual deliveries in terms beyond dispute. These three steps may be expanded infinitely or done in simplest fashion, but so long as they are actually done a beginning is made that will soon be brought up to the same standards that are applied to the handling of merchandise or finance itself.

APPRECIATION OF COVER

Several have expressed heartiest appreciation of the beauty of the Cultivator cover of the issue of November 13. It was simply the photograph of a magnificent collie. A San Francisco subscriber writes this letter:

"Who is the lovely Shep dog on cover of California Cultivator, issue of November 13?"

"To what human is given the joy of his offering of unlimited love, as master?"

"Address."

"Is there any chance of buying a lineal descendant?"

"Price and to whom apply."

"Dogs like that one just win your heart looking at 'em and you want

to know all there is to know about 'em."

Unfortunately we are unable to give the information desired, for this dog happens to be a resident of Sacramento. He was photographed by McCurry, the Sacramento photographer who supplied the Cultivator with the photograph from which this engraving was made, so we take the opportunity of giving Mr. McCurry credit for his artistic work, which credit was not given at the time the photograph was used.

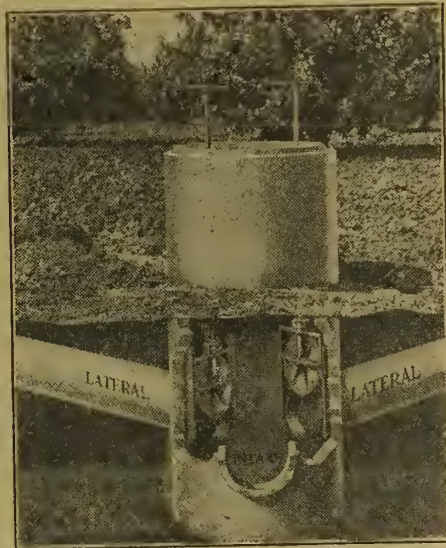
The Outlook. Hokus: "Do you expect to spend a pleasant Christmas?"

Pokus: "I ought to. That's about all I have left to spend."—Woman's Home Companion.

SAVE WATER LABOR LAND

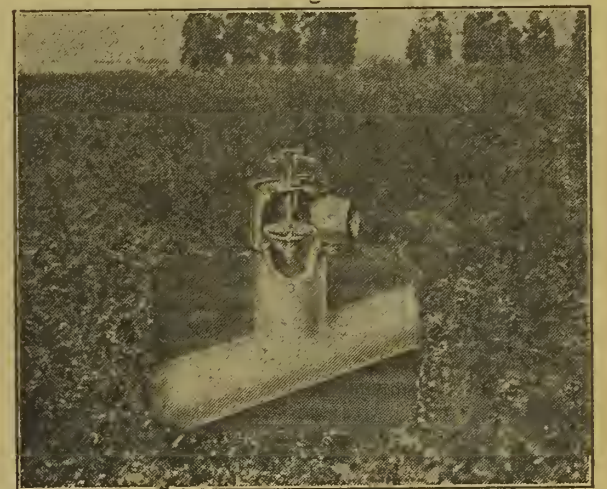
A Modern Irrigation System on the Ranch Frequently Saves Its Cost Annually
Your Nearest Pipe Manufacturer Will Give Information and Estimates

A "SNOW" INSTALLATION INSTALLED



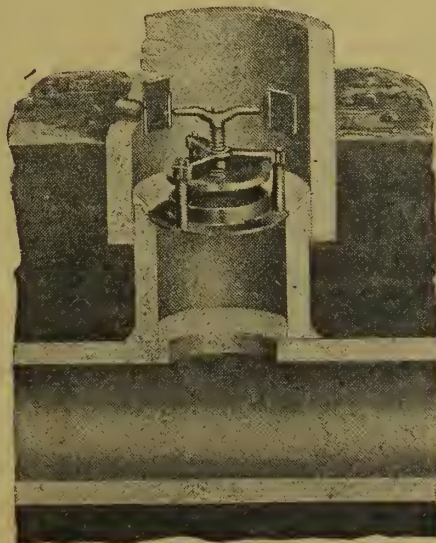
The "Intake" Box

Here water is received from the Water Company or the Pump and is distributed to the various ranch pipe lines.



An Alfalfa Valve and Portable Hydrant

Outlet Valves are placed in every "land." Illustration shows method of taking water from ranch pipe line and distributing on crop.



An Orchard Stand and Orchard Valve

One stand for each row of trees

Valve controls flow

Galvanized Gates distribute flow into four or six small streams

Send for Illustrated Treatise on "Irrigation by Flooding,"
or on "Irrigation by Furrows"

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600 Purebred Polands

Sows With Litters Sows Ready to Farrow

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Take as many as you like. Lack of room requires us to discontinue our commercial piggery and you can benefit by acting quickly.

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Anita M. Baldwin, Owner

SANTA ANITA, CAL.

POSTPONED SALE

—OF—

POLAND CHINA HOGS

At Orland, Cal., Wed. Jan. 5th, 1921

On account of weather conditions, I have postponed my sale until January 5th, at which time I will offer 60 head, including 30 spring gilts, 10 fall yearlings, 10 tried sows and a few young boars sired by Long Jumbo, Yates Big Orphan, Glenn Chief, Young Hadley and bred to Yates Big Jones, Y. C. 4, Reformer and Black Bob. Write for catalog.

R. J. Yates

Orland, Cal.

F. C. Fairbanks Ranch Hampshires

The Grand Champion Boar HARVEY'S CHOICE 53147
at head of our great herd of brood sows

HARVEY'S CHOICE
Grand Champion Boar
at Los Angeles, 1919

LOOKOUT CHEROKEE
Grand Champion at Liberty Fair
SIOUX QUEEN
Grand Champion at P.P.I.E.

18 High Class Brood Sows in herd—young stock for sale

A. E. Harvey, Manager

Redlands, Cal.

O.U.R. Hampshire Swine

Ortega-Underhill-Rancho

Thos. T. Dinsmore, Mgr., Santa Barbara, Cal.

Italian Vineyard Company

Guasti Berkshires

Weaned pigs, both sexes, from sows that farrow large litters and raise them. Priced at a figure any farmer can afford and that will show him a profit.

Alex. Wilson, Supt., Guasti, Cal.

Castleview Ranch Berkshires

The Home of **ACHIEVER** the Boar and Enhancer, the Other Boar

A few choice boar pigs for sale sired by the above boars. A few choice bred sows for sale at reasonable prices.

Castleview Ranch

Santa Rosa, Cal.

USE A SHORTHORN BULL

You need the extra pounds and the quality which Shorthorn blood produces. It seems to make no difference how big the Shorthorn steer gets, he retains the quality that enables him to top the market. A matter of 200 or 300 pounds at maturity makes the difference, often between profit and loss on your steer.

It pays to grow Shorthorn beef.

Ask for literature.

AMERICAN SHORTHORN BREEDERS' ASSOCIATION,
13 Dexter Park Ave. Chicago, Ill.

The Poor Farmer's Friend



RECENT scientific investigation has clearly demonstrated that milk and the food elements which it contains are absolutely essential to the best development of the child. Milk is nature's way of giving young animals a good start in life, and while man has made some wonderful discoveries, he has never been able to find an efficient substitute for milk as a food for young animals. Notwithstanding an extensive campaign of advertising to the contrary, we have

rural districts which has played no mean or lowly part in the development of the country folk.

On almost any farm there are more or less by-products which are allowed to go to waste every year. These by-products may be found in the form of fine, juicy grass along the roadside, or along our fences or streams. Again, may be in the form of countless tons of corn stover, or of vast amounts of straw and various grasses and in some cases even weeds which we allow to go to waste every year. Now, some one will say, "Is that what you feed your cows?" While I do not wish to go on record as recommending the above as an exclusive diet for our cows, yet I do think that we are letting enough of these materials go to absolute waste, if they were cared for and then mixed properly with a few well chosen concentrates and fed to any kind of a dairy cow, and the resultant products in the form of milk, butter, cream, cheese and last of all the cow herself, used for human food, it would materially affect the H. C. L. But some one says: "If so great possibilities lie concealed in old Bossie's hide, why, in the name of our common welfare, are you not producing more of these dairy products?" And right here lies one of the greatest problems confronting us as a people so long as the great mass of our people are insisting that they have all the necessities of life, and in too many cases the luxuries, with the least possible thought or effort on their part, we cannot hope for living conditions to be improved.

I once knew a college man who met a certain fair co-ed which ultimately resulted in a prominent young couple becoming tenants on father-in-law's well stocked farm, said father-in-law being a professional man in a near by city, but having originally come from the farm. One evening shortly after they had taken possession he said to his wife, "Let's drive out to the farm tomorrow and see how the children are getting along." So after the usual city breakfast they went to the farm. Mother went into the house to see her daughter; Father went out to look over the crops and the stock. Soon he found his new tenant. Various farm problems were gone over and finally they came to the cows. "Well," said the new father, "how are the cows doing?" To which the new son replied that he guessed they were all right; he had not noticed anything wrong with them. He was then asked how much milk he was getting. "Oh," he said, "the first day we were out here I got a bucketful from two of them and we have not needed any more since." As soon as father could get his breath he again ventured to ask his young hopeful if he did not milk those cows each morning and evening and was met with the answer, "Why, no, we did not need any more, so I just let them alone."

Now, here was a married man becoming a tenant and acting manager on a well improved modern farm, and yet he actually did not know that cows ought to be milked twice a day. You say that is a pipe dream, but it was told in that vicinity as an actual truth. But, true or false, it represents all too many people's idea of the dairy business. Dairying means work and a lot of it; it means work and seven days of it, each week through summer and winter. But to the man who is willing this is a real advantage. On the average grain farm there is a large part of the winter months that there is much idle time on the farm. A herd of cows will furnish employment the year around, and, after all, dairying is not so irksome as we might at first suppose. It has been proven time and again that this is one of the best methods of improving soil fertility, and there is abundant proof that old, worn out farms may be actually built up by a carefully managed dairy herd.

But there is yet another advantage and a very important one, and that is the matter of dollars and cents. A good herd of cows will provide a constant and regular income, nearer absolutely dependable than any other line of income for the great mass of our farmers. There is yet one other advantage, and that is the necessary capital which is required as an initial investment. It does not require very



University Livestock at Portland

U. C. Jock 4th, pure bred Angus steer, grand champion at Portland. He was reserve champion calf at Chicago.

Mary Ann Rush, first prize Shorthorn junior heifer calf and the sensation of the Portland show. This little lady was presented to the university by Senator Benj. F. Rush, Sulsum.

California Majestic, champion Shorthorn steer, and reserve grand champion at Portland. First as calf at Chicago last year.

Yearling wethers, first, second and third in class, first as a pen and the South-down in the center was champion.

Second prize pen of barrows under six months. They are pure bred Durocs.

always known that milk was good for pigs and calves and even chickens, but now come our eminent scientists to tell us that our rising generation must have milk or the future is seriously impaired.

We are told that recent statistics have revealed some startling facts in reference to the comparative physical condition of the city young men as contrasted to those from the rural districts, but I am of the opinion that if our country children were to receive the same care as to their physical bodies and as good medical attention, the statistics would tell quite a different story.

Any mother who has had plenty of milk and its products in the home and has then been deprived of the same, knows some of its undeniable benefits. You do not have to put on an advertising campaign to convince her that milk is an absolute necessity, especially for young children.

It is this almost unconscious and universal use of the dairy cow in the

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POULTRY

The Last 50 Eggs Measure the Profits.—Our 180-290 egg strain Leghorns, Anconas, Reds, Rocks, Minorcas, Wyandottes, Blue Andalusians (ducks, turkeys) often clear customers \$5 annually. Largest southern shippers of CHICKS. Price always reasonable; reduced delivered soon or booked for delivery any month until April. Hundreds satisfied customers repeat orders often. Proof, valuable information free. **SURPLUS PULLETS, HENS, MALES AT BARGAIN.** Write (am rarely home) Profitable Poultry, 151 North Fair Oaks, Pasadena, California.

Baby Chicks—We have the following varieties of Thoroughbred Baby Chicks every week: White Leghorns, Anconas, R. I. Reds, Fancy Dark R. I. Reds and Barred Rocks. We use only well selected eggs from rigidly culled flocks. **BY SPECIAL DELIVERY.** This year all chicks are sent by Parcel Post Special Delivery, thus delivering at your door chicks in the best possible condition, and in the shortest length of time. You should send for price list and put your orders in now. Orange County Hatchery, Harold C. Hebard, Prop., Santa Ana, California.

For Sale—One million S. C. White Leghorn baby chicks from heaviest laying (Hoganized) stock for spring 1921 delivery. January prices \$5.00 per 25, \$10.00 per 50, \$18.00 per 100. Special prices 500 and 1,000 lots. Safe delivery live vigorous chicks guaranteed. No money in advance; pay on delivery. Order early chicks now and realize big broiler profits. Finest hatchery in the world. Established 1898. **MUST HATCH INCUBATOR CO.,** 438 Seventh Street, Petaluma, Calif.

Baby Chicks from my vigorous heavy laying pure bred S. C. White Leghorns. Males from trapnested hens egg records of 250 and over in one year. Also SILVER CAMPINES and Brown Leghorn chicks, eggs and cockerels. T. E. Blake, Oak Knoll Poultry Ranch, Santa Cruz, California.

We Can Supply strong, vigorous chicks guaranteed Tancred Strain from trapnested parent stock, 290 egg male birds, 240 and better female birds. These birds will grade up your flock. Price \$20.00 per hundred f. o. b. Seattle. **QUEEN HATCHERY,** Seattle, Washington.

Baby Chix—S. C. White Leghorns from open range standard bred parent stock of utmost utility. Protect yourself in having your order booked early. Prices, etc., on application. I. X. L. Hatchery, 619 Upham Street, Petaluma, Sonoma County, California.

Baby Chicks from good layers. Booking orders now for 1921 delivery. R. I. Reds, Barred Rocks, White Rocks, White Leghorns, Brown Leghorns. Safe arrival guaranteed. Write for circular. Stubbe Poultry Ranch and Hatchery, P. O. Box 67, Palo Alto, Calif.

ATASCADERO POULTRY FARMS

ATASCADERO, CALIF.
S. C. White Leghorns, R. I. Reds and Anconas. Book your order now for next season's baby chicks. All chicks from carefully selected stock. Write Henry Miller, Supt.

S. C. White Leghorn Baby Chicks from my carefully selected, pure-bred stock of S. C. White Leghorns. Orders for spring delivery booked now at \$15.00 per 100, \$140.00 per 1000. Write far particulars. J. R. Heinrich Poultry Yards, Arroyo Grande, California.

White Leghorn Baby Chix from heavy laying HOGANIZED STOCK. Safe arrival of full count, live, strong chix guaranteed. Price list and interesting literature on application. The Pioneer Hatchery, 409 Sixth Street, Petaluma, California.

Santa Cruz Chicks—White, Brown and Buff Leghorns, Anconas, Minorcas, Barred Rocks, Reds, Buff Orpingtons, White Rocks and White Wyandottes. Write for 1921 folder with price list. B. W. Archibald, Soquel, Santa Cruz County, California.

POULTRYMEN — POULTRYMEN
Both the novice and the experienced poultrymen should have a copy of "Poultry for Profit" in order to prevent mistakes commonly made in the poultry business. This cloth bound book of 225 pages and 18 illustrations is written by Jean Koethen a practical authority on all branches of the poultry business in California. Price \$1.00 postpaid. Cultivator Publishing Co., 115½ N. Broadway, Los Angeles.

White Leghorn Chicks from Tancred's 300 egg strain. Write for 1921 price list on all breeds. Am installing electric incubators. Have a few Jubilee and Pioneer to sell at a bargain. Enoch Crews, Seabright, California.

Caldwell's Exhibition Quality Reds, bred to lay, choice breeding cockerels. Book order for eggs now. Price \$3 and \$5 per 15, \$12 per 100. Write your wants. Satisfaction guaranteed. T. S. Caldwell, 335-B West Broadway, Glendale, California.

Watch Us Grow—"Quality Chicks." We are now booking orders for the season of 1921. White and Brown Leghorns, R. I. Reds and Barred Rocks. Order early. E. W. Ohlen, Campbell, California.

Barred Plymouth Rocks—"Wonderful Layers," champion prize winners. Nothing better in poultry. Choice stock and hatching eggs. Catalog free. Charles H. Volden, Los Gatos, California.

White Leghorns—Chicks and hatching eggs from the home of heavy layers. Spring orders being booked. Send for price list. Curtis White Leghorn Ranch, R. 1, Box 29, Gardena, California.

Pure Bred White Plymouth Rock cockerels, U. R. Fisher strain splendid birds. Prices \$5 to \$15. Mrs. B. M. Josch, Fallon, Nevada.

Place Your Order Now for chicks for 1921. Standard varieties. Prices right. Send for circular. Madera Hatchery, Madera, California.

POULTRY

THE MISSION HATCHERY
Wishes its friends, old customers and new, a MERRY CHRISTMAS and a Happy and Prosperous NEW YEAR. We appreciate your good will and thank you for it and are ready to serve you well for the coming season. Write for our letter on the poultry conditions and our circular on the profitable breeds and reasonable prices. The Mission Hatchery, Box 27, Campbell, California.

Buy Early Chicks—Early hatched chicks are the best always. They are stronger, much easier to raise than late chicks, mature and lay earlier, develop into larger and better birds. We are now booking orders for early hatched chicks. Do not fail to place your order in time for the early hatches. Several varieties from our own breeding pens. Circular sent upon request. Beresford Poultry Farms, San Mateo, California.

We Can Supply You With thoroughbred utility S. C. White Leghorn chicks from heavy layers in 100 or 1,000 lots from Hoganized and trapnested stock. Order now for spring delivery. Write for hatching dates. Forster Brothers, 2918 Otis Street, Berkeley, California.

Lester Tomlin's Reds—Single comb. We keep up our stock, buying from the Red Dean's best matings. A few brilliant red 1919 cocks and 1920 cockerels for sale—\$25 to \$75.00. Cypress Spring Vineyard, Mesa Grande, California, via San Diego. All birds sturdy and vigorous.

Quality Barred Plymouth Rock and Ferris S. C. White Leghorn guaranteed hatching eggs. Also Barred Plymouth Rock breeding cockerels for sale. We have good stuff at honest value for you this season. **GOLDEN RULE POULTRY FARM,** Porterville, California.

Chicks—Eggs—Hoganized White Leghorns, Brown and Buff Leghorns, Black Minorcas, Rhode Island Reds, Barred Rocks, Anconas, Blue Andalusians. Free circular. Order early. McDonald Poultry Ranch, King Road, San Jose, Calif.

Chicks hatched in Petaluma Electric Incubators are a superior class; strong, vigorous, sturdy, grow rapidly, lay early. Our free catalogue tells the reason. Petaluma Electric Incubator Co., Petaluma, California.

Hatching Eggs from Trapnested, Linebred, pedigreed S. C. White Leghorns, trapnested 17 years for high production, vitality and consistency. Best foundation stock on the Coast. Our circular tells you why. Waldeck Ranch, Burbank, Calif.

For Sale—S. C. White Leghorn Baby Chicks and Hatching Eggs from 227 egg strain of winter layers. Book your order now for early delivery. Meyer Poultry Farm, Route A, Box 17-C, Modesto, California.

Baby Chicks—Barred Rocks and Reds from extra fine bred-to-lay stock. We have a hatch off every week. Chicks sent by parcel post or express, 25-\$5.00; 50-\$10.00; 100-\$20.00. Hargett & Son, Route 2, Compton, California.

S. C. White Leghorn Baby Chicks from our own Bred to Lay Stock. We are now booking for January to July delivery. Our prices are right. Model Poultry Farm, W. C. Smith, Prop., Corning, California.

Baby Chicks hatched from our utility S. C. White Leghorns, a result of many years' selection and breeding for egg production. San Jose Poultry Yards, Fifteenth and Margaret Streets, San Jose, California.

Baby Chicks—White Leghorns—10's, 100's. 1000's hatched right in \$60.000 brick and concrete hatchery from Hoganized, Trapnested heavy layers. **PEBBLESIDE POULTRY FARM,** Sunnyvale, California.

For Sale—Blue Andalusian roosters and trols; for 15 years my Blues have won most of the first prizes. Write for prices. J. R. Huddleston, 342 Edgeware Road, Los Angeles, California.

For Sale—Choice White Leghorn Cockerels from eggs direct from the famous Wyckoff & Son Poultry Farm. Inquire of H. M. Lyman, 7th and Hewitt Streets, San Jacinto, California. Phone 696.

For Sale—Cornish Indian Games from prize winning stock; cockerels, pullets, and unrelated trols. F. E. Seaman, Strathmore, California.

"Eastman's Bred-to-Lay" Trapnested Barred Rocks. **JANUARY CHICKS.** Fairmead Poultry Farm, Fairmead, California.

Place your order for BABY CHICKS for SPRING DELIVERY with the Stevenson Hatchery, Watsonville, California.

White Rock Eggs—From heavy winter layers, \$2.00 per setting, prepaid. Mrs. C. W. Sebastian, Wasco, California.

Turkeys—Finest breed of each, Bourbon Red, Mammoth Bronze. Box 27, Shawmut, California.

GEESE

Now is the Time to Buy Geese for breeding, or to order your eggs. Send for catalog and mating list of our wonderful utility and prize stock of German Turkeys, Geese, Pekin Ducks, Muscovy Ducks, White King Pigeons, Partridge Plymouth Rocks, White Leghorns, White Wyandottes, Guineas, Paradise Valley Poultry Ranch, National City, California.

Mammoth Geese—Bronze Turkeys. Now is the time to buy breeding stock of "McNeely's Mammoth Geese," fine Bronze Turkeys, Toms and Hens at right prices. Chas. McNeely, Alpaugh, California.

BERKSHIRES

ANCHORAGE FARM BERKSHIRES

Orland, California.

BRED GILTS FOR SALE.

Grape Wild Farm—Berkshires, Guernseys, Big Type Berkshire boars of serviceable age, sired by Big Leader, greatest son of Grand Leader 2nd, Panama Pacific Grand Champion. A. B. Humphrey, Prop., Escalon, California.

Registered Berkshire Pigs, either sex at farmers prices—sire Lee's Matomas 2nd—dam Bernice Leader 3rd. **LAWRENCE BOWDLE,** Hawthorne, California.

Berkshire Gilts—Bred for late spring litters. Boar pigs of breeding age. Calac Orchards, Martinez, California.

Real Good Berkshires, cholera immune. Frank B. Anderson, Box 724, Sacramento, California.

DUROC-JERSEYS

Big Type Durocs; herd headed California Orion King. Am offering excellent young boars at right prices. Inquiries solicited. Harvey M. Berglund, Dixon, California.

Bred Sows and Gilts and young stock. Pathfinder and Great Wonder I Am breeding. Monthly payments if you wish. Derryfield Farm, Capital National Bank Building, Sacramento.

Big Type Duroc-Jersey Spring Gilts and Boars; also one 22 months old boar weight 700 pounds. Guaranteed. Write quickly for prices. Lowell Beaver, Fresno, California, R. C. Box 397.

Boyanna Big Type Durocs—Breeding stock, priced right for sale. Inquiries invited. Satisfaction guaranteed. J. Boyd Harrold, Dixon, California.

Duroc Hogs and Guernsey Cattle—Pure bred stock for sale at all times. Hollow Hill Farm. B. W. Shaper, Manager, Colton.

Durocs—Spring gilts and boars. Sire Great Model 233139, dam Orion Model Rose 663114. J. L. Stevenson, Van Nuys, California.

High Class Durocs—Two fine early litters, 10 each. Dam 2nd in strong class. Owensmouth. See A. V. Austin, Van Nuys, California.

For the Best in Durocs write June Acres Stock Farm, Davis, California.

POLAND-CHINAS

Bargains in Polands—600 pure bred Polands—sows, gilts, boars, feeders, must be disposed of to make room. Take one or more at your own price. Santa Anita Rancho, Santa Anita, California.

For Sale—Big Type Polands, February, March and April gilts and boars. From the herd that took 21 ribbons in Los Angeles and Riverside Fairs. J. L. Dunlap, R. F. D. 2, Pomona, California.

Bred Poland-China Gilts sired by California Gerstale and bred to Some Price. \$75.00 and up. J. A. Crawshaw, Hanford, California.

Tohoqua Big-Type Polands—Young pigs to sell. Champion big-type breeding. Ferguson & McKaig, Orland, California.

HAMPSHIRE

Registered Hampshire Pigs, excellent individuals, prices reasonable. H. G. Ranch, Solvang, California.

MISCELLANEOUS

Distributors to appoint agents and sell Powerene at wholesale. Agents make \$30 a day. Special terms to distributors. Equals gasoline at 5c. The equivalent of 20 gallons, express prepaid, \$1.00. P. Barnes, H424, Santa Rosa, California.

Get Maximum Income from your land by having your irrigation and drainage problems properly attended to by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

For Sale—About 100 ton A-1 pure barley hay. Will put aboard car Hollister. For price write or call Harry Locke, two miles east on Santa Anna Road, Hollister, California.

For Sale—1 special combination electric and oil 560 Pioneer Incubator, new; 1 Jubilee 108, old. Alles San Dro Poultry Yards, 523 Rosemont Ave., Los Angeles. Tel. 53511.

Orchard Deciduous Pruning by Whitten long system. Acreage only. Address: W. I. Seibird, 2212 Nicholson Avenue, Monterey Park, California. Phone Alhambra 656-W.

Avoid Law Suits by having your property lines properly surveyed and established by the Engineering Service Company, 1316 Washington Building, Los Angeles, California.

I Have Cash Buyers for salable farms. Will deal with owners only. Give description and cash price. Morris M. Perkins, Columbia, Mo.

Leaf Tobacco—prepaid, 3 lbs. either chewing or smoking \$1.25. WHICH? 5 lbs. weak \$1.30. Guaranteed. Aden Francis, Dept. Y, Dresden, Tennessee.

Electric Farm Lighting Plant, in good condition. Used one year. Bargain. L. E. French, Sebastopol, California.

For Sale or Exchange—2 ton truck in good condition, \$800. Would consider orchard tractor. Box 333, Placentia.

FERTILIZERS

Gypsum and Lime—Price Right Order early for prompt delivery. E. B. Matthews, 1010 N. Madison Ave., Pasadena.

RABBITS

Pedigreed Flemish Giants—Also Utility stock. No fancy prices. MAUD BEECHING, 1578 W. 46th Street, Los Angeles, California.

FARM LAND FOR SALE

Agriculture—the Mother of Civilization. but who is going to do the work when the hired man quits or the boys go to the city. Don't try to farm so much land that you make life a burden. We have an ideal one man proposition to offer you. Soil and climate where you can grow anything that grows in California. Water piped under high pressure to your door for irrigation and domestic purposes. Good schools and churches in a 100% AMERICAN colony. A limited amount of cleared land for \$200 per acre. **PARADISE RANCHITA, Paradise, California.**

For Sale by Owner—50 acres choice river bottom alfalfa land, gradually changing to prunes, apricots, pears, peaches, vines etc.; 2½ miles from growing railroad town 30 miles from Fresno, California. No alkali or hardpan, abundance of water. Priced at half value to insure quick sale and half down. Price \$9400. Box 8 W. R. Cultivator, Los Angeles.

Plenty of Government Land in Oregon and California still to be had for little or nothing. Fruit, grain, grazing, mining, timber, near to railroad. Ask for free folder, stating kind of land you'd like. **RALLY, Dept. 9, 312 Grant Bldg., Los Angeles.**

For Sale—10 acres, 640 Valencias, 300 Fuerte Avocados, 11 room house, garages, water, gas, electricity. West of Charter Oak. Address Owner, Box 56 Charter Oak, California.

For Sale—20 acre date garden, ¾ mile Indio. Best date growing section Coachella Valley. E. A. Miller, Box 192, Indio, California.

Bargain—10 acres 2-3 yr. Prunes, main irrigating ditch, level land, good road. New house, barn, well. \$500 will handle. P. Detroit, Los Molinos, California.

For Sale—240 acres, very desirable; 200 acres very rich delta suitable for gardening or potato soil. Great bargain. \$250.00 per acre. Box 3, Wasco, Calif.

For Sale—Ranches, Homes, Acres, free list. Wilson Bros., Santa Cruz, California.

Alfalfa, Orchard and Delta Lands. Alex Murdock, Brentwood, California.

MACHINERY

For Sale—Rebuilt windmills, tanks, pumps, irrigating pipe fittings, cylinders, rods, valves. **PAY MORE?**

New 1,000 gal. galv. tanks, \$49.25; 2,000, \$69.25. Used material absolutely cheap. Good servicable machinery can be produced for. Also buy. Demmitt Co.'s office, 120 N. Main, Los Angeles.

For Sale—10 ft. Superlor Drill. Two power lift tractor plows. Tractor double disc harrow. Drag harrow, three walking plows, spring tooth harrow. New and slightly used. See us when in the city. Cheap for cash. **ARNOTT & COMPANY, 112 So. Los Angeles Street, Los Angeles.**

For Sale—16-32 Leader Tractor, latest model, used for demonstration purposes only. For sale at liberal discount. Carries new guarantee. Pacific Leader Tractor Corporation, 568 Howard Street, San Francisco, California.

For Sale—Merry Garden Tractors. Circulars and demonstration free. Dwight E. Smith, L. A. County Agent, 1645 North Normandie Avenue, Los Angeles.

One No. 6 Krogh Centrifugal Pump complete for 50 foot pit—\$250 f. o. b. Sargent, R. D. 2, Orange, California.

For Sale—\$600.00 "18" Holt Caterpillar in good condition. Pehrson Bros., Turlock.

TURKEYS

Turkeys—"Goldbank"—"Copper King V" strain. Selected Giant Bronze toms. Sired by son of famous "Copper King V." First Prize Yearling, N. E. T. Club Show, Madison Square, N. Y., January, 1919. Bred to 20 lb. hens. Egg orders taken. Prices reasonable. Address: **BRONZE KING MOUNTAIN FARM, P. O. Box 308, Callistoga, California.**

Mammoth Bronze Turkeys, Stafford strain, Eastern stock, beautiful plumage, extra large frame and bone. Money back guarantee. Send for circular. R. M. Dodge & Son, R. D. 2, Box 129, Bakersfield, California. Phone 31F4.

For Sale—Pure bred young Bronze toms—\$15.00; hens, \$10.00. Satisfaction guaranteed. Have pure bred Buff Orpington cocks and cockerels \$5.00, \$7.50; hens, \$3.50 to \$5.00. Mrs. M. L. Trewitt, Route B Box 47, Hanford, California.

Earl E. Sanders, Modesto, breeder of Mammoth Bronze turkeys and Single Comb White Minorcas, is booking orders for eggs, chicks and breeding stock. Route D, Box 1880.

Mammoth White Holland Turkeys for sale—Choice hens and toms from our famous breed of large vigorous turkeys. Earl V. Smith, Loma Vista Ranch, Willows, Calif.

Large Number of Choice Bronze Toms and hens, also geese and herding Collie Dogs. Shipped from St. Helena and San Miguel. John G. Mee, San Miguel.

Bourbon Red Turkeys from extra fine prize winning stock. Write for prices. Mrs. John M. Bernstein, R.R., Hanford, Calif.

Bourbon Red Turkeys, Buff Orpingtons. The Ferria Ranch, S. Reservoir, Pomona, California.

Mammoth Bronze Toms for breeding. Large type, vigorous, cheap. Box 189, Olive Avenue, Patterson, California.

Bourbon Red Toms for sale. L. S. Grosse, Scottsdale, Arizona.

GOVERNMENT LAND

300,000,000 Acres Free Land in U. S.—Send for free descriptive circular of our 100 page book **THE HOMESEAKER** which tells you where this land is and how to acquire it, or send \$2.00 for book direct. The Homeseaker, Dept. M, 836 S. Broadway, Los Angeles, California.

HORTICULTURAL PRINTING

Catalogues and Booklets, office forms and correspondence stationery for the nursery, seed and florist trade; half tone cuts of many standard plants. Correspondence invited. The Kruckeberg Press, 137-341 Court St., Los Angeles.

SEEDS AND PLANTS

FOR SALE—POST PAID
Famous Catalonia Sweet Spanish Onion Seed
(the sweetest in the world)

and
Valencia Sweet Spanish Onion Seed
These seeds are just imported from Spain and are in fine condition to germinate. They can produce four hundred or more sacks per acre. Rich ground not necessary. Best time to plant from September to January to insure big crop. Sample packages 30 cents. Write for price by the pound. Jose Liach, Ventura, California.

Berrydale Berries and Roses—"De Roo's Mary Lewis" New Everbearing Raspberry. The finest, largest and best flavored berry grown. Can ship 500 miles in perfect condition. Plants strong and need no supports. Plants ready for delivery now. Price per 12, \$3.00; 100, \$20.00; 1,000, \$150.00. Sample plant 30 cents, parcel post. Write for catalogue. Sent on receipt of 5 cents in stamps. Salesmen wanted. Our salesmen are making good up to \$600.00 per month. **BERRYDALE GARDENS**, Dept. D, 1715 Webster Street, San Francisco, California.

Strawberries—1,000,000 plants, leading varieties; 200,000 Cuthbert raspberry; 100,000 Black Cap Tips; 100,000 Loganberry tips. Order now; low prices. Also 100,000 choice peach seedlings—will graft in plums or prunes on contract for fall delivery 1921. Lafayette Nursery Company, Lafayette, Oregon.

For Sale—Best rooted grape vines of Thompson, Malaga, Emperor, Suitana, Muscat and Fig Trees of Calimyrna, Black Mission, Adriatic and red wonderful Pomegranate Trees at cheap price. This stock is growing at Madera, Delano and Cutler. P. O. Box 605, Dinuba, California—S. K. Hahn and Company.

Increase Your Potato Yield by planting clean healthy seed. I have some Great Idaho seed potatoes of excellent quality at 3 cents. Present crop 20 sacks per acre. Come and see. W. G. Brumund, Cucamonga, California, on Foothill Boulevard.

Berry Plants—Strawberries, Loganberries, Currants, Gooseberries, Blackberries and Raspberries, for immediate delivery. All stock first class and strictly true to name. Write for prices. M. J. MONIZ, Berry Specialist Sebastopol, California.

Brandywine Strawberry Plants from stock which produced \$3,000 worth of berries from acre this season. Price reasonable. Lon King, 1158 West Fourth, Riverside, California.

Shubarb Plants—Wagner's Giant 1 year, per dozen \$50; per hundred \$4.00. Wagner's Giant, 2 year, per dozen \$1.00; per hundred \$3.00. Seed per pound \$5.00. Currier Bulb Co., Santa Cruz, California.

Strawberries six months in the year. Plant Everbearers, Superb, Progressive, Americus, \$2.50 per hundred prepaid. Catalogue, Fred Leissler, R. 6, Box 429, Seattle, Washington.

For Sale—Mountain grown strawberry plants. Brandywine \$1.50 and Banner \$2.00 per hundred by mail postpaid. B. Bryan, Camp Baldy, Calif.

Strawberries—Wm. Belt, best among 15 varieties tested. Two dollars per hundred fifteen per thousand. Gervais Nursery Terra Bella, California.

For Sale—Good clean common variety alfalfa seed at 22 cents per pound. Chas. A. Haug, Star Route, Corona, California. 300,000 Grape Cuttings \$30.00 a 1000 while they last. Four kinds. Box 501, Fowler, California.

My Price List contains interesting reading. Send for it. Bishop's Nursery, Highland, California.

Pumpkin Seed—Mixed Pumpkin Seed, good germination, 25c per lb. Aurora Seed Mill, Stockton, California.

For Sale—Unrooted grape cuttings, fruit trees, rooted grapevines. Burke's Nursery, Lodi, California.

Fine Klondyke and Brandywine plants for sale, \$12.00 per m. L. E. Hall, R. D. No. 2, Box 61, Pasadena, California.

Strawberries—Plant 'em now. Cash Nurseries, Sebastopol

CATTLE

Pure Bred Guernsey Bulls at farmers prices. Three are ready for service. Also a number of calves sired by a son of Rex of Rich Nech.

Adohr Stock Farm
Ventura Blvd. near Van Nuys. Phone Van Nuys 119R2. Mail address—Van Nuys, California.

For Sale—Pure-bred Jersey bull, 16 months old. Prize winner at two fairs this fall. \$250.00 if taken now. W. H. ALFRED, Loeita, Humboldt County, California.

Shorthorns bred for Range Purposes and of Pure Scotch Blood Lines. Show herd won highest honors in 1917. Visitors welcome. Information cheerfully given. T. T. Miller, Hollister, California.

Yearly Record Holsteins—Bulls from 500 to 1,000 pound dams and by World Record sires. A. W. Morris & Sons, Woodland, California.

Breeders of Registered Shorthorns—Milk strain; choice young stock for sale. John Lynch Ranch, Box 321, Petaluma.

Registered Holstein Bulls of various ages for sale. Millbrae Dairy, Millbrae, California.

35 Excellent Jersey Cows—1 reg. bull, 12 calves for sale reasonable. Address: H. E. Watson, Rt. D, Box 91, Modesto, Calif.

Registered Holstein Bulls, various ages at Nuevo Stock Farm, Wineville, California. E. R. Stalder, owner.

Reg. Shorthorns—Fair Oaks Ranch, Willits, California

ROOFING MATERIALS

ROOFING PAPER
One ply \$1.50 2 ply \$2.00 3 ply \$2.50 complete with fixtures. Rubber roof paint 50c per gallon in 5 gal. lots.

ANGELUS ROOFING & PAPER CO.
766-768 So. San Pedro St., Los Angeles

PATENT ATTORNEYS

WEBSTER, WEBSTER & BLEWETT,
Savins and Loan Bldg., Stockton, California. Established 50 years. Send for free book on patents.

TREES

Nursery Stock—We are offering commercial lots in Bartlett pear trees, at prices which will save you planters big money. Have apple, pears, prunes, cherry, strawberry, berries, etc. NO AGENTS. Try our Mail Order System. Send for planters List. 30 years in business. **CARLTON NURSERY COMPANY**, CARLTON, OREGON.

Go!n' To Plant? Can still supply a limited quantity of our bud selected French prune on peach, Bartlett pear on Jap. and broken line of other trees. **BETTER TREES ARE NOT GROWN**. Prices most reasonable. We ship any quantity anywhere on approval. J. F. Miller & Sons, Healdsburg, California.

For Sale—10,000 Valencia one and two year buds; 2,000 Eureka lemon two year buds; Navel, M. S. Pomelos; 1000 Wonderful Pomegranates; 3000 Texas Umbrellas; 100 Kadota figs; 2000 Mission Olives; Sweet and Sour orange seed-bed stock. **Southland Nurseries**, 1941 East Colorado Street, Pasadena, California.

For Sale—Oregon Plum and Dollar Strawberry plants now ready for delivery, \$2.00 per hundred postpaid. Burbank Thornless Blackberry \$15.00 per hundred. Walnut Seedlings, 2-3 feet, \$15.00 per hundred, 1-2 feet \$10.00 per hundred. Ben Putnam Nursery, Winters, California.

Royal Apricots, Tuscan, Sims and McClure Clinks, Elberta and J. H. Hale Freestone Peaches, Santa Rosa and Beauty Plums, Pear, Apple and Walnut Trees. Grapevines, Berries, etc. Order now; leading varieties scarce. **Los Nietos Valley Nursery**, Downey, California.

For Sale—Placencia Perfection and Eureka walnut trees, also Eureka Lemon and Almond trees. These are all high grade stock. **Ketscher's Nursery**, 1101 E. 4th St., Santa Ana, California. Phone 572WK

For Sale—80,000 Black Walnut Seedling trees, one year old next spring, ready to graft, at Van Nuys, California. Can leave on ground as long as desired. Get my price. Geo. M. Ketscher, 1101 E. 4th Street, Santa Ana, Phone 572W.

For Sale—Walnut trees, fine stock Eureka grafted on black root. Prices, 4-6 feet in height \$2.00; 6-8 \$2.25; 8-10 \$2.50; 10-12 \$2.75. **La Puente Walnut Nursery**, Puente, California. Phone 103.

For Sale—100,000 Florida Sour Orange Seed-bed Trees; 100,000 California sweet seedling orange seed-bed trees. **SOUTHLAND NURSERIES**, 1941 East Colorado Street, Pasadena, California.

Kadota Fig Trees—Taft lineage and direct from original Taft Kadota trees. Grown for root formation. Make reservations. **John H. Oliver**, 1969 Wilcox Avenue, Hollywood. Phone 57116

Seed Bed Stock—Florida sour and California sweet. Nursery 100 Ventura Street. Address Paul B. Magee, R. F. D. No. 2, Box 499, Pasadena.

For Sale—Budded English Walnut trees grafted on Northern Black Walnut stock. Address: **Italian Vineyard Company**, Guasti, California.

TREES—TREES—ALFALFA SEED Etc. Full stock—best varieties, now. Write J. L. LAWSON, San Jose, California.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Grape Vines, orange, lemon, grapefruit trees; citrus seed bed stock. **L. A. TUTTLE**, R. 1, Box 385, Pasadena.

For Sale—Three thousand Mission and Manzanilla olive trees. **York Nurseries**, Highland, California.

Peach and Apricot Trees—Leading varieties. **C. Truelsen and Son**, Hemet, California.

LIVESTOCK

BEFORE PRICES REVERT TO NORMAL TAKE ADVANTAGE OF THIS S. O. S. \$150—A pure bred registered Saanen doe kid 10 mos. old from my old tried and true Andreas Hofer-Vall stock.

\$300—A fine pure bred registered Ayrshire cow bred and milking of the MacFarland stock.

\$10—Pure bred registered Hampshire weanlings of perfect type and of top quality.

\$45—Registered two year old sow from Underhill's wonderful herd.

This is first class stuff, no culls. Come to see it and be convinced. These are real honest-to-goodness bargains that I must sacrifice. I refer to Mr. Klein, California Cultivator, fieldman. R. M. CARTWRIGHT, Gardena, California.

BUTTE CITY RANCH
Shorthorn Cattle, Shroshire Sheep, Berkshire Hogs, Shetland Ponies, Bronze Turkeys, White Plymouth Rocks. Stock for sale at all times. W. P. Dwyer and W. S. Gullford, Box C, Butte City, Glenn County, California.

For Sale—185 Ewes now lambing, part are half blood Romneys, are bred to our State Fair and International Stock Show champion rams, not sheared, farmers prices. **Tribble Brothers**, Lodi.

Duroc Hogs and Shropshire Sheep. Pure bred stock for sale at all times. **J. J. Prendergast**, Redlands.

WANTED

Wanted Ten Thousand Good Dairy Cattle to consume our surplus alfalfa hay. Dairy opportunities unexcelled on the Newlands Irrigation Project. Never failing water supply. Adequate storage. Mild climate. Good dairy market. Great variety of crops. Our alfalfa hay unexcelled in feeding value. Supplements not essential. Orders handled: Leasing or feeding contracts available. Address **Newlands Project Alfalfa Association**, Fallon, Nevada.

Wanted—One or more parties to contract to plant 100 or more acres of Sorghum cane for coming season. Light sandy soil with water preferred. Can move my factory to desired location. **Ray C. Robinson**, 930 W. 5th Avenue, Pomona, California.

Should be glad to hear from party owning small fruit and chicken ranch who would be willing to rent on shares to reliable party. Address: **E. L. Cook**, Eureka, California.

WANTED

Wanted—Steady winter work for a new Holt 45 tractor. Have a set of nine bottom Davis plows with extension rims for soft ground. Box S, Cultivator, 112 Market Street, San Francisco.

Wanted—Mission Grapes, Grafted Walnuts, Grafted Logans, Mammoth Thornless Blackberries, apricot, peach and plum trees. **Mission Oak Nursery**, Santa Barbara, California.

Wanted—Walnut Meats. **Fred L. Mitchell & Son**, 214 French Street, Santa Ana, Phone 551-M.

FOR RENT

IMPROVED LAND

For Rent, all or part of 2,000 acres IMPROVED LAND, near Pixley, Tulare County, with water, electric power, buildings, etc., in tracts of from 80 acres upward. Either cash or share rental. Suitable for grains, alfalfa, cotton, grapes, fruits, etc. About half of this land is ready for seeding. Ideal stock or hog ranch.

Apply to **H. G. Coffee**, Pixley, Cal., or **R. Schiffmann**, Chamber of Commerce Building, Pasadena, Cal.

Eureka and Placencia Walnut Trees

First Class Stock, Grafted on Northern California Black Walnuts.

EDWARD H. RUST

1625 Bank St., South Pasadena
Los Angeles Phone 35639
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FARMERS ATTENTION!

SEED POTATOES

—Write For Prices—

Sing Wo Kee & Company
432 JACKSON ST.
SAN FRANCISCO CAL.

DON'T LET YOUR TREES DIE

Protect pruning cuts and wounds against infection with **Pabco Pruning Paste**. Ask your dealer. Manufactured by **The Paraffine Companies, Inc.**, San Francisco, Calif.—Adv.

Queries

Questions to be answered in this department should be received at the office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Cottony Cushion Scale

How can I control cottony cushion scale? Just a couple of spots in the orchard. Is there any spray to use, and if so, when?—Subscriber, Sanger.

One need never be concerned over control of cottony cushion scale. The victory over that pest of citrus and many other orchard trees has become a classic in the history of fruit growing in California. We believe the state insectary at Sacramento is supplied with a sufficient quantity of vedalia cardinalis to colonize any orchard in the state. Write **Harry S. Smith**, State Insectary, Sacramento.

Best Time to Spray

What is the best time to spray lemon and prune trees?—Subscriber, Los Gatos.

It is impossible to answer so general a question within the limits of these columns. The subscriber gives no intimation as to trouble he wishes to spray for and we cannot cover the entire range of spraying. If one wishes to spray to control the attack of a fungous pest, the procedure is entirely different than when spraying for scale, thrips, red spider, or other insect pest.

Wireworms

Some of my sweet corn planted last summer grew only a foot high and had no ears on it. We found that there were white worms about the size of a thread at the roots and I was advised to use carbon bisulphide sprinkled on the ground and harrowed in. If you could suggest something that would be cheaper I would like to try it. Would sulphur do any good?—Subscriber, Ventura.

We fear the sulphur would be of little value in control of this pest and, as the subscriber has found out, the carbon bisulphide is altogether too expensive. When that is used it is best to sprinkle in a furrow and cover as soon as possible. When sprinkled on the surface it is too far from the soil occupied by the pests. About the only method of escaping from this pest is to eradicate by moving the crops to unfested soil and allowing the infested soil to go fallow or to be planted to such crops as are not attacked by the wireworm. Above all, keep down weeds or natural growth on the soil and the pest may be in time starved out.

Orange Thrips

What has made my orange leaves look like this? They were sprayed in summer with lime-sulphur. Would that cause the trouble? In some of those curled leaves is a spider nest and a little light gray spider. Is that what is called the "red spider"? With what should I spray, and what strength? Should I spray now or later? Two of leaves sent are new ones, which also look eaten, but very few of the young leaves are affected.—Subscriber, Lincoln.

These leaves indicate serious attack of citrus thrips. The leaves which had been eaten were probably attacked by rose chafer. This, however, is trouble of little concern in the present case. Another season spray with lime-sulphur one part of commercial solution to 80 parts of water. This wash will cause a slight burning. Spray just after the petals have fallen from the flowers, a second time ten or 15 days after the first, and a third four weeks after the second. Then another application may be made either in August or September.

Walnut Codling Moth

Can a few apple trees infested with codling moth infest nearby walnuts? I am told the walnut moth is the same pest.—Subscriber, Oxnard.

It is generally believed that the apple codling moth is identical with the one infesting walnuts. Therefore, there should be greatest care in reducing the pest either on the apples or the walnuts. The method of control is usually by means of a liquid spray on apples three or four times during the season, beginning with blossoming. The arsenate spray is used. For walnuts, the tree being so much larger, the dry or dust spray is generally used.

Flowering Shrubs

Please advise me of at least 12 varieties of flowering shrubs that would be suitable to grow in the San Joaquin Valley. Our summers are long and hot and there is some alkali in the ground, although we have plenty of water to take care of any plant that would be suitable here.—Subscriber, Kerman.

Abelia rupestris, or *grandiflora*; *Arbutus unedo*; *Berberis Darwinii*; *Bottle Brush*, any species; *Carpenteria Californica*; *Caryopteris mastacanthus*; *Ceanothus*, any species; *Coronilla glauca*; *Cotoneaster pannosa*, or any species; *Crataegus pyracantha*; *Escallonia*, any species, but white best; *Genista fragrans*; *Myrtus communis*; *Nerium Oleander*, any color; *Polygala Dalma'siana*; *Spartium junceum* (*Genista Hispanica*); *Viburnum Finus* (*Laurestine*). Also the following deciduous shrubs: *Deutzia*, any species; *Forsythia suspensa*; *Lagerstroemia Indica* (*Creepe Myrtle*); *Philadelphus*, either species; *syringa* (*Lilac*), any color; *Tamarix*, any species; *Weigelia*, any species.

Apples on Pears

I have been intending to topwork a few pear trees to apples. My pears are Bartlett and I intended to graft over only three or four for family use. Since seeing a statement that pears cannot be successfully grafted on apples in a recent Cultivator I have been wondering whether it would be scribe of the Cultivator has tried and best to do so.—Subscriber, Cupertino.

Top grafting of pears to apples is not a success. If, however, any subscriber

(Continued on Page 845.)

TYPE HEALTH BREEDING PRODUCTION

They're All in This Sale!



ABSOLUTE DISPERSAL

Jas. J. Jeffries Herd

75 REGISTERED 75
HOLSTEINS

Burbank, California

Thursday, February 3, 1921

INCLUDING:

BARON ANNABEL LILITH, over 38 lbs. butter in 7 days, the highest 7 day record cow ever sold in California.

MAID TUEBIE SEGIS, 1140.95 lbs. butter from 28,343.28 lbs. milk in one year the highest yearly record cow ever sold in California.

KING SEGIS PONTIAC JANNEK, the great proven son of King Segis Pontiac, an outstanding individual and sire of outstanding individuals.

FORTY DAUGHTERS OF KING SEGIS PONTIAC JANNEK, including all of the sensational show ring winners at Los Angeles.

A BEAUTIFUL LOT OF 29 AND 30 POUND COWS, several on yearly test, will finish right at or above the 1000 lb. mark.

THREE YOUNG BULLS, one a son of Baron Annabel Lilith, one a son of Maid Tuebie Segis, both of these sired by King Segis Pontiac Jannek. The third bull a son of Sir Ormsby Skylark out of a 30 lb. dam.

A SPLENDID LOT OF YOUNG COWS with records from 22 to over 28 lbs. butter in 7 days, some now making big yearly records.

IF YOU WANT THE GOOD KIND, DON'T MISS THIS SALE!

BREEDERS—Don't wait until sale day to form your companies to buy King Segis Pontiac Jannek. He is widely rated as the greatest proven sire yet offered at public auction in California, and there are many combinations of breeders in California who could well buy and use him at the price he is worth.

Every animal positively guaranteed to be a breeder; every animal Tuberculin tested and sold subject to retest by the buyer.

Catalog free on request.

Management

California Breeders Sales and Pedigree Company

C. L. Hughes, Sales Manager, Sacramento, Cal.

Auctioneers: Rhoades & Rhoades, Los Angeles

Cultivator's Monthly Prize in State Dairy Cow Competition



THE taxpayers of Los Angeles County, especially those who are farmers, have for some time taken much pride in the fact that the county farm is a real farm. Its dairy especially has been a profit maker for the county. The individuals in the dairy are largely grades, though the proportion of pure breeds has been increasing almost every day. Some years ago since the farmer left the institution has been entirely under direction of Superintendent Harriman. Mr. Harriman made a study of his foundation stock and proceeded to better it. He has the ability to choose real producing stuff.

It is with much gratification that we give the following communication from Prof. F. W. Woll regarding the Cultivator's monthly prize which goes to Mr. Harriman for the Los Angeles County farm. An average of over 75 pounds from each of the five best cows is certainly a remarkable record. Especially wonderful is the record made by Princess, almost 100 pounds for the month.

By F. W. Woll

The monthly prize offered in the state dairy cow competition by the California Cultivator for the highest average production for five grade cows in a herd headed by a pure bred sire was won for the month of November by the Los Angeles County farm. The yields of their highest producing grades were as follows:

Grades in other herds competing for this prize produced on an average as follows during the past month: Earl Graham, Compton, 65.39 pounds butterfat; credit 73.29 pounds. F. F. Pellissier, Whittier, 61.88 pounds butterfat; credit 61.88 pounds; C. E. Fisher, Hughson, 44.95 pounds butterfat; credit 50.73 pounds. Albert Burger, El Centro, 50.33 pounds butterfat; credit 50.33 pounds.

An average production of 69.81 pounds of butterfat corresponds to about 81½ pounds of commercial butter, which is far better than most pure bred cows will produce in a month and is over three times as much as an average good dairy cow will yield. The dairy cow competition has shown so far that there are grades of such productive capacity in three different herds in the state and that others rank close to them. As the competition progresses and new cows are entered, other herds will come to the front and secure for their owners a reputation for having exceptionally good cows and knowing how to feed and handle them to get most creditable returns.

Entries in the competition will be open until April 1, next year, and cows calving prior to that time may be entered, as they freshen, and compete for prizes. Information concerning the competition, as to prizes offered, rules, etc., may be had by addressing Prof. F. W. Woll, University of California, Berkeley.

	Age Yr.	Days in Milk	Milk Lbs.	Butterfat Lbs. %	Total Credit* Lbs.
Princess	3-1	27	2076.4	83.06 4.0	98.01
Domino	4-6	12	2008.0	84.34 4.2	88.55
Blue Bell	9-	45	1709.5	70.09 4.1	70.09
Beauty H.	4-11	50	1557.5	57.63 3.7	60.51
Madera	4-4	70	1349.0	53.96 4.0	58.28
Average		41	1740.1	69.81	75.09

*Handicaps allowed on account of cows not being full age.

Feeding the Cow---For Boys

A writer in Wallace's Farmer of Des Moines, Iowa, on the page devoted to "Farmers of Tomorrow" has some suggestions for boy farmers which may be of value to California farmers. Timothy hay, corn stover and a few other feeds there suggested may not be available, sorghum or other roughage are, and the suggestions may stimulate a bit of thought as to wherein California excels in opportunity. We hope for California boys and girls the same as the Iowa writer hopes in the first sentence below.

Feeding the Cow

I hope that you have to feed and milk at least one cow every night and morning. Of course it gets very monotonous and there are times when you would give almost anything to get away from the everlasting chores.

I want you to get to thinking how you can get the most milk possible out of your cow. Suppose you see if you can't feed your cow in such a way that she will give three or four pounds more of milk every day than she usually does. Now in feeding the cow the first thing to think about is the kind of rough feed. The common kinds of rough feed are clover hay, alfalfa hay, silage, mixed hay, timothy hay, corn stover, sorghum, Sudan grass, millet and oat straw. Which do you have? The best combination of all is corn silage with either clover hay or alfalfa hay. If you have that combination you can feed your cow an average of 30 to 40 pounds of silage every day, together with ten or 12 pounds of clover or alfalfa and a few pounds of some such grain mixture as two parts oats, two parts corn and one part oil meal. With this kind of a roughage ration and with Holstein or Shorthorn cows, you can feed about one pound of the grain mixture to each four or five pounds of milk and get good, cheap results.

The poorest rough feeds are timothy, straw, corn stover, millet hay, sorghum hay and Sudan grass hay.

If you feed this kind of roughage you have to feed far more grain for the same amount of milk than most people do. With a silage and clover hay ration you can get 20 pounds of milk out of an ordinarily good cow by feeding two pounds of corn, two pounds of oats, and one pound of oil meal every day, but when you feed your cow 20 pounds of such rough feed as timothy, oat straw, corn stover, etc., you have to feed in addition about three pounds of oats, one pound of corn, two pounds of bran and two pounds of oil meal in order to get 20 pounds of milk.

A mixture of such roughages as timothy hay, corn stover, oat straw, etc., with such roughages as clover and alfalfa hay, works very nicely. Ten or 15 pounds of timothy hay or corn stover in connection with ten or 15 pounds of clover hay or alfalfa is almost but not quite as good as a mixture of 30 pounds of silage and ten pounds of clover or alfalfa hay. When you use this kind of a roughage you can get along very nicely with a grain mixture of two parts of corn, two parts of oats and one part of oil meal.

It is a general rule to feed about one pound of grain to each three pounds of milk which the cow produces. But in the case of a Holstein or Shorthorn which has recently freshened, one pound of grain to each four or five pounds of milk is plenty, whereas in the case of the Jersey or Guernsey which has been milking for five or six months it may be a good plan to feed one pound of grain for each two pounds of milk. In the case of a cow which has plenty of good quality silage and alfalfa or clover hay, you may get along very nicely by feeding only one pound of grain to each five or six pounds of milk, whereas in the case of a cow which gets such poor roughage as timothy or corn stalks, it may be necessary to feed one pound of grain to each two and one half pounds of milk in order to keep the cow from falling down very rapidly in her milk flow.

60 REGISTERED 60 GUERNSEYS

AT PUBLIC DISPERSAL

Revada Ranch, Yountville, Cal.

Thursday, January 20, 1921

This is an absolute dispersal of the well known Revada Herd of registered Guernseys, founded by B. E. Nixon, and now owned by Mission Land & Cattle Co., who will devote the ranch to other purposes.

IMPORTED FEMALES—The herd contains a number of imported females, including daughters of such famous sires as Governor of the Chene, Raymond of the Preel XIII, Robert's Secret, and others of corresponding merit.

THE HEIFERS—Bred and open heifers, and heifer calves comprise a large percentage of the offering. Many of these are out of imported dams, and by such sires as Auricle's Cherub of Edgemoor, Imp. Ricardo of Edgemoor, Itchen Daisy May King of Langwater, and other sires of most desirable breeding.

THE BULLS—The offering of bulls marks a most important event in the affairs of the Guernsey breed in California, for never before have so many bulls of the breed been offered at public auction in the state. The sale list includes a number ready for service, others nearly ready, and some very choice bull calves. Included in the list are several sons of Itchen Daisy May King of Langwater, brought to Revada Ranch at the then world's record price of \$8000.00. There are bulls in the list that should offer desirable selection to both breeders and dairymen.

Every animal positively guaranteed to be a breeder; every animal over six months old Tuberculin tested and sold subject to retest except as announced in sale ring.

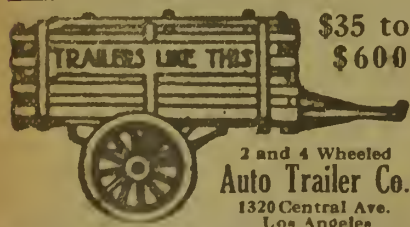
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Veterinary

Bloody Milk

I have a cow which gives bloody milk out of one teat. Could you tell me the cause or cure for this? She is young and apparently healthy in every way and as she is a good butter cow I would like to keep her.—Subscriber, Pleasanton.

In regard to our trouble with the cow which is giving bloody milk, will say that this is often caused just after freshening by the rupture of a small blood vessel in the udder in the vicinity of the cells that secrete the milk. Sometimes accidents in which the udder is bruised or injured in some way will also cause this difficulty to occur. Occasionally this difficulty is traced to the result of some disease or infection localized in the udder, but this is quite rare. Bathing the udder with hot water will often improve this condition, and frequent milkings are desirable in order that the udder may not become distended and the blood vessels will therefore get an opportunity to heal of their own accord. If this condition does not clear up after reasonable treatment it would be desirable to consult a veterinarian.—G. E. G.

Dehorning Wound

Early in October I purchased a Guernsey cow that had been dehorned in the latter part of September. The one horn healed up splendidly but the other, even with the greatest care in washing and disinfecting, will not heal. The horns I think were clipped and as the cow is six years old I am wondering if it is possible that the horn was too hard for the clipping process and thus is cracked. Would such a case cause festering for so long a time and what treatment is best to effect a cure?—Subscriber, San Fernando.

The clipping of horns after the animal is as old as your cow often causes a cracking of the horn below the point of clipping. Trouble is often caused by an injury of this kind and especially by not getting good disinfectant material sufficiently into the wound. I would suggest that you wash the wound out thoroughly, using a small hand pump or syringe if possible, to get the disinfectant material well down into the wound. All the pus should be washed out. A disinfectant suitable for this is lysol, about a 3 or 4 per cent solution. Various creosol dips may be used, but lysol is preferable. This disinfectant should be used every day for at least a week or ten days until the wound shows signs of healing when it is not necessary to wash it every day. It will then be desirable to paint the wound thoroughly with good pine tar which will prevent flies from bothering the wound and has a healing effect. If you are not able to note an improvement within two weeks, it would be advisable to consult a veterinarian.—G. E. G.

FEEDING THE CALF

The calf should have its mother's milk for a while, as its digestion requires it. After a few weeks skimmed milk may be fed, but it is wise to begin gradually with skimmed milk. Whole milk may be fed from the pail if the feeder prefers to feed the calf from the beginning.

As soon as the calf begins to nibble hay it should have concentrates and grazing. But the fact should be remembered that a calf's stomach is not suited to much bulky feeds and for that reason should have concentrates. Bran, shorts, rice polish, linseed meal and cottonseed meal may be fed as soon as the calf gets old enough to eat. When it eats heartily and can thrive on feeds, milk diet may be left off.—Farm and Ranch.

The Range Stock Growers Association met in Salt Lake City, December 11, and adjourned to hold another meeting at El Paso just prior to the meeting of the American Livestock Convention at that place. "Better cattle, and fewer," was the theme of the conventions.

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Imp. Caledonia

Caledonia Shorthorns constitute one of the choicest collections of the breed owned in America. Our herd bulls, Imp. Caledonia, Gainford Matchless, grand champion at the 1919 San Francisco show and Pine Grove King stand out prominently in the West. Our females represent choice Scotch and American families, and are noted for their type and quality. We can at all times furnish foundation material and bulls suitable for any herd or for the range. Our prices are moderate and every animal is guaranteed. Visit our farm and herd. Send for special bull list.

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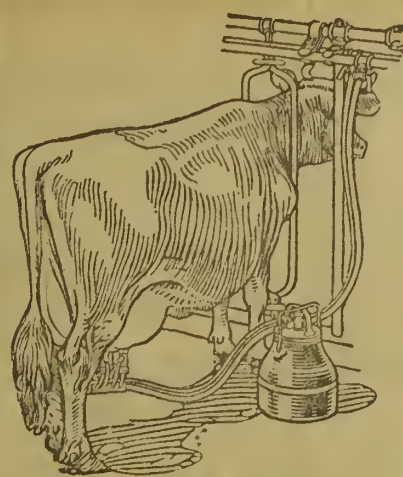
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For information on Shires write, W. G. Lynch, Secretary American Shire Horse Association, Toplea, Illinois

When writing advertisers, mention the Cultivator.

Los Angeles Markets

Los Angeles, December 22, 1920.

BUTTER

Butter, creamery extras, Produce Exchange price 54 cents.
Dec. 15 16 17 18 20 21
'20 ... 54 54 54 54 54 54

CHEESE

Brokers' prices:
California flats, 25@28.

EGGS

Fresh extras (case included): Produce Exchange closing price 69 per dozen case count, Produce Exchange closing price 67 per dozen; pullets, Produce Exchange closing price 64 per dozen; pewee pullets, 60.

Dairy Exchange price last week on ex-

Dec.	15	16	17	18	20	21
'20 ...	71	68	68	68	68	69

POULTRY

Price to producers: Hens, lt., 29; heavy 30; colored, 33; broilers, 40@45; roasters, 31; old roosters, 14; fryers, 40; ducks, old, 23; ducklings, Pekin, 3½ up, 25; others, 23; geese, 25; turkeys, live, young tom, 45; dr., 50; old, live, 40; dr., 41; hens, live, 45; dr., 50; squabs, 45@47.
Belgian hares, live, 16@21; old, 9.

LIVESTOCK

Los Angeles, Dec. 22—Weighed and delivered off cars without food or water:
Hog (heavy grain), 125 to 175 lbs., 10.50; 175 to 225 lbs., 11.00.
Cattle (on foot, gross weight): Steers,

good, 8.50@9.00; medium, 8.00@8.50; cows, good, 7.50@8.00; medium, 7.00@7.50; bulls and stags, 6.00; calves, 125 to 150 lbs., 11.00; 175 to 225 lbs., 10.50.
Sheep—Ewes, 7.50@8.00; lambs, 12.50@13.00.

POTATOES AND ONIONS

These are the actual prices obtained between 7 and 8 o'clock, December 21, by Los Angeles wholesalers from their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk. There may be slight fluctuations during the day's trading.

Potatoes: Supplies liberal, market steady, quality generally poor. Stocktons: Burbanks, 1.75@2.25 according to quality. Idahos: Russets mostly 1.85@2.00. Local: mostly 90@1.00 per lug. Sweets, best, mostly 1.25@1.40.

Onions: Supplies heavy, market dull. Stockton: Whites, 1.50@1.75; Browns mostly 1.10@1.25 per 100 lbs. sacked; Yellows, 1.00@1.25 cwt.
Garlic, lb., 15@17.

VEGETABLES

These are the actual prices obtained December 21, by the Los Angeles wholesalers in their sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on the walk.

Beans: Ky. Wonder, Refugee mostly 18@20; Limas, 13@14.
Beets: Doz., 35@45; sk., 1.50@1.75.
Cabbage: Supplies heavy, market slow, wide range in quality. Best mostly 1@1½ per lb.; per field crate, mostly 85@1.25, few best, 1.10.

Carrots: Doz., 30@35; sacks, 1.00@1.25.
Cauliflower: Supply liberal, field cr., 1.50@2.00.
Celery: Cr., 1.50@2.00.
Cucumber: Market firm; local, best, lug, 3.00@3.25 lug.
Egg Plant: Lb., 6½@8.
Lettuce: Field crate, best, 65@90.
Peas: Local lb., 15@16; low as 8.
Peppers: Bells and Chilis, lb., 6@7.
Rhubarb: Crimson Winter, best bx., 80@1.00.
Squash: Local Hubbard, lb., 1½.
Tomatoes: Local lugs, mostly 60@1.00 lug; best high as 1.50.
Turnips: Per doz., 30@35; sk., 1.25@1.50.

DECIDUOUS FRUITS

These are the actual prices obtained December 21, by the Los Angeles wholesalers in sales to retailers, peddlers, hotels, restaurants, cafeterias, etc. Terms: Cash on walk.

Apples: Supplies liberal, movement slow, market steady. Californians: Bushel boxes Bellefleurs, fancy, 4 tier mostly 1.90@2.00; 4½ tier 1.65@1.75; Jonathans fancy, 3.00@3.25; Delicious fancy 3.25@3.75. Idahos and Utahs: Loose Jonathans and Winesaps mostly 5½@6½ per lb.; Ganos and Ben Davis mostly 4½@5½ per lb.; Oregons and Washingtons: Bushel boxes, extra fancy Jonathans and Splzenburgs mostly 3.00@3.25.
Bananas: Lb., 10½@11.
Cranberries: Bbl., Late Howe, 22.00@22.50; Oregon, bx., 6.00@6.50.
Grapes: Emperor, Cornichon, 9@11; poorer low as 7, best high as 16.
Pears: Bartletts, northern, lb., 9@12; Winter Nelis, 8@10.
Persimmons: Lb., 10@18.

CITRUS FRUITS

Grapefruit: California, per box, market pack, 2.25@2.75; special packed brands, 3.00@3.75.
Lemons: Market dull, wide range in prices: Local stock: Packed, box, 1.25@2.00; loose, 1.00@1.25; lug mostly 40@50.
Oranges: Supplies heavy, market weak. Navels, new crop, local packed, mostly 3.00@3.75; small sizes low as 2.50, special brands mostly 3.50@4.50. Grove run 1.25@2.00 loose.

HONEY

Movement slow: Carloads f. o. b. usual terms: Per lb. 5-gallon cans White Orange and White Sage, 16½@20; extra Light Amber Orange, and Sage, 19; Light Amber Orange, 18½; Light Amber Sage, 12@18½; Light Amber Alfalfa, 11@17. Peeswax: Sacked, in less than car lots 40@42 per lb. Prices given represent quotations; practically no sales being made. Wide range due to extremely unsettled market conditions; low prices are considered possible in near future.

NUTS

California Walnut Growers' Association announces prices on 1920 walnuts: No. 1, soft shell, 12½; No. 2, 18½; Budded, 25½; standard budded, 22½ per lb.

GRAIN AND FEEDS

Grain Exch. prices bid December 21:
Milo: Carlots, 1.75.
Corn: Bulk, Yellow, 1.85@1.95.
Wheat: Mixed feed, 33.00.
Barley: 1.55.

HAY

Alfalfa Growers of California, report under date of December 22:
Receipts and offerings of alfalfa hay which diminished sharply last week, were again rather light this week, while the demand for current consumption continues at the previous rate. The present general business atmosphere is such that dealers and users do not buy more at a time than is absolutely necessary to fill their immediate needs, but since in the case of alfalfa the stocks previously accumulated are on the average already down to a near minimum, compared with other years, it would seem that this general demand, though only of the "from hand to mouth" order, is bound to continue steadily. Your sales management believes that it is in the best interest of all concerned to have us meet this demand adequately, thus heading off erratic market fluctuations and assuring the uninterrupted and steady continuation of business. We would therefore ask our growers who still have a marketing surplus, to list same a little more freely, to enable us to regulate the general distribution over the balance of the crop year in accordance with the current demand as far as this is possible.
There were 370 tons received on the tracks in Los Angeles the week ending

December 18, with 630 tons left over as against 375 tons the week before.

Rabbit alfalfa.....	41.00
No. 1 dairy alfalfa.....	30.00
Standard dairy.....	27.00
Stock alfalfa.....	23.00
Quotations by Nichols-Loomis Company. Following are prices to growers f. o. b. Los Angeles in carload lots; handling and commission must be added to obtain retail prices on new hay:	
Tame Oats.....	22.00@26.00
Barley.....	18.00@25.00
Alfalfa.....	22.00@30.00
Barley straw.....	6.00@10.00

San Francisco Markets

San Francisco, December 21, 1920.

Quotations made daily by the San Francisco Wholesale Dairy Produce Exchange. These are the prices paid by retail grocers to wholesalers. The prices paid by the wholesalers to producers are eight per cent less.

BUTTER

Dairy Exchange quotations:
Extras.....51
Dairy Exchange prices extras this week and year ago:
Dec. 14 15 16 17 18 20
'20 ... 51 51 49½ 50 .. 51
'19 68 68½ .. 69½
Rets. 4 days ending Dec. 17, 2,477 cents.

CHEESE

Dairy Exchange quotations:
Jack, full cream.....21@26
Jack, half skimmed.....17@20
Ore. Y. A.....38½
Oregon Trips.....34
Cal. Y. A.....37

EGGS

The prices paid by wholesalers to producers are eight per cent less.
Dairy Exchange quotations, dozen including cases:
Extras.....86½
Extra Pullets.....75
Undersized.....71
Dairy Exchange prices, extras this week and year ago:
Dec. 14 15 16 17 18 20
'20 ... 83 76 70½ 69 .. 73½
'19 76 78 .. 74½
Rets. 4 days ending Dec. 17, 131,394 doz.

Wholesale prices are:

Broilers, 15 pounds per dozen, 60@65.
Colored fryers—2 to 3 lbs., 37@38.
Colored young roosters (smooth), 3 to 4 lbs., 32@33.
Old roosters (colored), 20@23.
Leghorns, young, 15 lbs. to 24 lbs. per dozen, 32@33.
Leghorn hens, 3 lbs., 32@33; under, 25; Eastern, 31@35.
Large colored hens, 33@35.
Young Pekin ducks, 30; old ducks, 23@25; young geese, 27@30; market easy.
Live Belgian hare, 23@25; dressed, 28@30.
Turkeys: Dr., 45@51; live, 45@47.
Squabs: Large, 65@70 per lb.
Pigeons: 3.00@4.00 per dozen.

LIVESTOCK

Western Meat Company prices are:
Cattle: Grass steers, No. 1, weighing 1,000 to 1,200 lbs., 9½@10½; second quality, 8½@9; thin, 6@6½.
Cows and heifers: No. 1, 7½@8; second quality, 6@7; thin, 3@4.
Calves: Light weight, 9½@10; medium, 8@9; heavy, 7½@8.
Lambs: Milk, 9½@10½; yearling, 8@8½.
Sheep: Wethers, 7½@8; ewes, 4@5.
Hogs: Hard, fat, grain-fed, weighing 100 to 150 lbs., 9½; 150 to 225 lbs., 10½; 225 to 300 lbs., 10; 300 to 400 lbs., 9.
California Farm Bureau Marketing Association reports sales:

No.	Hogs	Av. Wt.	Dock	Price
Madera, December 16, 1920				
30	185	...	...	10.50
54	164	...	...	9.50
13	307	90	...	8.50
45	95	...	...	6.75
Two cars, 8 consignors.				
Fresno, December 17, 1920				
81	199	...	...	11.00
11	193	...	...	10.75
21	160	...	...	9.70
4	222	50	...	8.70
16	115	...	...	8.70
3	550	650	...	7.70
Two cars, 16 consignors.				
Bakersfield, December 18, 1920				
22	222	...	...	10.75
32	182	...	...	10.75
48	129	...	...	8.50
One car, 9 consignors.				
Total for the week, 376 hogs, 5 cars, 33 consignors. Total amount \$6,432.34.				

POTATOES AND ONIONS

Wholesale prices on street:
River, 1.60@1.75 for No. 1; do, Oregon Burbanks, 2.60@2.75; Salinas, 3.50; Idaho Gems, 2.60@2.75. Sweet potatoes, 3@3½ lb.
Onions: Yellow, 65@85 per cental; Australian brown, 90@1.25; do, white 1.50@1.75.
Garlic: New, 8@9.

VEGETABLES

Wholesale selling prices:
Beans: Lb., garden, 10@12; Italian, 8@10; Limas, 12@13.
Brussel Sprouts: 5@7 lb.
Beets: Sk., 75@1.00.
Carrots: 75@1.00 sk.
Cauliflower: Doz., 1.00.
Cucumbers: Cr., 2.00@2.50; hothouse, 3.25.
Cabbage: Lb., 1.
Celery: Cr., 1.50@2.00; doz., 15@25.
Corn: Sk., 2.00@2.50; fy., 3.00@3.50.
Egg Plant: Southern, 8@10 lb.
Lettuce: Cr., 1.75@2.00.
Onions: Green, per bx., 75@1.00.
Peas: Lb., 12½@15; fv., 15@20.
Peppers: Bolls, lb., 12½@15; Chili, lb., 5@6.
Rhubarb: 1.75@2.00 lug.
Spinach: Lb., 6.
Squash: Hubbard, 75@1.00 sk.; Marrowfat, sk., 75@1.00.

Full Hills of POTATOES

The man who plants merely "potatoes" is gambling in futures with heavy odds against him.

Certified Seed Potatoes Take the Gamble Out of Planting

Certified Seed Potatoes will increase your yield. The state inspector's certificate on every sack assures you that the potato plants were vigorous, healthy, free from disease and true to type and variety.

Certified Seed Potatoes Are Handled by Leading Dealers

Let us send you free of charge our new authoritative booklet on Potato Culture and quote you prices on our White Rose Seed Potatoes for your next planting.

CALIFORNIA SEED POTATO GROWERS

(Composed of the Leading Growers of Seed Potatoes in California)

427 California Bldg., Los Angeles, Calif.

American Steel Pipe & Tank Company



+WELL CASING+

RIVETED WATER PIPE + SURFACE IRRIGATING PIPE + + +

Main Office 354-P.E. Bldg. LOS ANGELES
+ Branch at Fresno +

THE BEST CEMENT

THE QUICKEST DELIVERIES

Riverside Portland Cement Co.

Los Angeles

PERFORATED TREE PROTECTOR

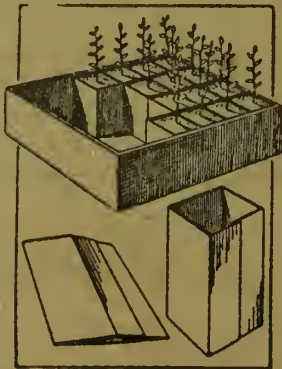
that will keep Squirrels, Rabbits and Gophers from barking your trees and give perfect protection from hot sun, sandstorms, barking in cultivation, etc. Tell us your pest and we will tell you what kind of a wrap to use. We make a number of kinds and can save every tree for you from pests.

COLLAPSIBLE PLANTING POTS

Why not raise your early

Tomatoes, cabbage, chili, and egg plant for home use or for market. Do you know that you can start Cucumbers, Cantaloupes, Melons of all kinds in these pots in flats until they have three and four leaves, then plant pot and all, have melons two or three weeks earlier for market. Just the thing for Propagating Eucalyptus and Olive cuttings.
Write for samples and prices of both Pots and Protectors. State which you are interested in.

THE EXPAN CO., 935 E. CENTRAL AVE., REDLANDS, CALIF.



THE "Sentinel" Recording Gauge Provides "The Better Way,"

brings the handling and distribution of irrigation water up to par with the modern methods of ranch management and business practice. It fills the need long felt among progressive water users and producers for a means to avoid the guess work and waste incident to the open weir system of measurement, without heavy initial outlay or maintenance costs.

"Sentinel" Irrigation Meters afford the most direct and efficient means for the measurement of irrigating heads of water through steel or concrete pipes.

Stover Pump Jacks, Long stroke, substantially built, low priced. All sizes, ready for quick delivery.

Special information furnished on all of the above. Address:

R. W. SPARLING

Irrigation and Power Machinery
945 North Main Street
Los Angeles, California

Lomitas

(Meaning Little Hills)

In San Jose Hills, southeast of Covina, one of the important citrus centers, we now offer this beautiful subdivision in lots of 5 to 20 acres. Slightly location for homes. Very rich soil, adapted to Avocados, citrus and tropical fruits. Roads, domestic and irrigation water installed, electricity available.

This property will appeal to those who appreciate valuable land, slightly homes, ideal surroundings and established conditions.

Gordon C. Douglas
Covina, Cal.

Requesting your local merchant to stock articles advertised in the California Cultivator helps your town, the advertiser and the Cultivator.

Tomatoes: Bx. fy., 1.50@1.75.
Turnips: Sk., 75@1.00.

FRESH FRUITS

Apples: Bellflowers, 1.50@2.00 for cold storage; Newtons, 3½ and 4 tier, 2.00@2.35; 4½ tier, 1.85@2.00; Hood River Spitzenberg, extra fancy, 3.00@3.25; fancy 2.50@2.75; choice, 2.00@2.25; Lady apples, 3.00@3.50 box; Roman Beauties, 1.50@2.50; Delicious, 2.50@3.50.
Avocado: Fla., 5.00@6.00; Tahiti, 4.00@5.00 doz.; Cal., 1.25@1.75.
Bananas: Lb., 9@11.
Cranberries: Per bbl., 24.00@25.00, Oregon, 5.00@6.00 box.
Dates: Lb., 19@22.
Mangoes: Doz., 6.00@10.00.
Olives: Lb., 3@6.
Pears: Winter Nells, 3.50@4.00; other varieties, 3.00@3.75.
Persimmons: Bx., 1.00@1.75.
Pineapple: Doz., 4.00@5.00.
Pomegranates: 1.50@2.25 per half orange box.
Strawberries: Dr., 1.25@1.50; cr., 3.50.

CITRUS

Navel oranges, 3.50@4.15. Lemons, 2.50@3.75 per box; lemonettes, 1.50@2.00. Grapefruit, new crop, 2.50@3.00; do, Arizona, 3.50@4.50. Limes, 1.50@2.25 per half orange box; Tangerines, bx., 2.50@3.25.

DRIED FRUITS

California Associated Raisin Co. prices: Muscats: Package seeded, Sun Maid, 25 pound boxes, 20½ cents a pound. Loose, 25 pound boxes, one crown, recleaned and floated, 20½ cents a pound; two crown, recleaned and floated, 23¼ cents a pound; three crown, recleaned and floated, 24 cents a pound. Layers, three crown flat pack, 20 pound boxes, \$4.40 box; ten bound boxes, 2.40; five pound boxes, \$1.40 box. Cluster, four crown pack, 20 pound boxes, \$4.70; ten pound boxes, \$2.55 box; five pound boxes, \$1.40 box. Six crown flat pack, 20 pound boxes, \$5.50 box; ten pound boxes, \$2.95 box; five pound boxes, \$1.60. Sun Maid, 20 15-ounce net cartons to box, \$5.20 box. Sun Maid, 12 2-pound cartons to box, \$6 box. Sun Maid, Imperial, four 6-pound cartons to box, \$6 box. Vineyard run, Sun Maid, 100 pound boxes, \$21 box (strapping extra, 19 cents per box). Thompson Seedless, Sun Maid, recleaned, 25 pound boxes, 21 cents pound; 48 16-ounce packages, 21½ cents package. Sultanas, Sun Maid, recleaned, 25 pound boxes, 20½ cents pound. Figs: Fancy black, 25-lb. boxes, 12 lb.; extra choice black, 25-lb. boxes, 10 lb.; choice black, 25-lb. boxes, 9 lb.; fancy white, 25-lb. boxes, 18 lb.; extra choice white, 25-lb. boxes, 1 lb. Prunes: 30-40s, 25-lb. boxes, 19 lb.; 40-50s, do, 17 lb.; 50-60s, do, 15 lb.; 60-70s, do, 13½ lb.; 70-80s, do, 11½ lb.; 80-90s, do, 10 lb.; 90-100s, do, 9½ lb. Apples: Fancy, 50-lb. boxes, 14 lb.; extra choice, do, 10½ lb.; choice, do, 10 lb. Peaches: Blue ribbon brand, 48 11-oz. to case, 10.00 per case; do, 24 2-lb. boxes to case, 11.00 case; extra fancy peaches, 25-lb. boxes, 22 lb.; fancy, do, 20 lb.; extra choice, do, 18 lb.; choice, do, 17 lb. Apricots: Fancy, 25-lb. boxes, 30 lb.; extra choice, do, 26 lb.; choice, do, 25 lb.; standard, do, 22 lb. Pears: Fancy, 25-lb. boxes, 20 lb.; extra choice, do, 17 lb.; choice, do, 14 lb.

BEANS

Jobbers' prices: Small white, 5 per lb.; large white, 5; plinks, 6¼; Limas, 7; cranberry, 6¾; Mexican Garvanzas, 8; Lentils, 12½; Blackeye, 6½; Mexican Reds, 6¾; Popcorn, 7; California Bayo, 11½ Kidney, 11¼; split peas, 7, green peas, 4¾.

RICE

Fancy California Japan rice offered at: Immediate, \$5.; prompt, \$4.90; December, \$4.80; first half January, \$4.75; January, \$4; February, \$3.90; March, \$3.85.

GRAIN

Sales grain exchange December 21: Wheat: Mill run, 2.75@3.00; feed, 2.75@3.00; seed, 2.90@3.05. Oats: Red feed, new crop, 1.65@1.75. Barley: New feed, 1.35@1.40; shipping 1.55@1.65. Shorts, 35@46. Middlings, 54@56.

HAY

Alfalfa Growers of California under date of December 22: There were 871 tons received in San Francisco the week ending December 18, as against 1,380 tons the week before. No. 1 dairy.....25.00 Standard alfalfa.....23.00 Stock alfalfa.....20.00

Under date of Dec. 18 A. W. Scott Co.: says:

Receipts past week 871 tons. In spite of lighter receipts the market has dragged and prices have gone off another dollar or more per ton. Hay occupies a different position in that instead of being proportionately lower than produce, it is now higher and stronger in proportion than any of the field crops. How soon the general slump might affect the hay market seriously is of course only a matter of guess. Whether the producers will hold back enough of their hay to sustain the price and merely supply the demand without overcrowding remains to be seen, but the present requirements are extremely light and will continue so until business generally is back on its feet. Alfalfa is weaker, heavy consignments coming in from Nevada at lower figures than our California farmers care to accept. Mill feeds and high protein feeds continue weak with perhaps the best demand for coconut and alfalfa meal.

We quote today wholesale prices in carload lots as appear from dealers' transfers upon the hay market in San Francisco (for prices to consumers charge of cartage, commission and handling expenses must be added according to conditions).

Wheat hay, fancy.....25.00@26.00 Wheat hay, light 5 wire bales.21.00@24.00

Tame Oat hay, fair to choice..20.00@23.00 Wild Oat hay.....15.00@17.00 Barley hay.....15.00@17.00 Alfalfa hay.....20.00@23.00

Citrus Markets

Los Angeles, December 22, 1920. The holiday demand has been good but prices have ranged low. Condition and quality has been exceptionally good but the general downward trend has put them on the toboggan. F. o. b. California price has dropped to \$2.50 which is far under (Continued on Page 847.)

RHUBARB WAGNER'S GIANT

—NOW BEST TIME TO PLANT— Growers Harvested 15 Tons per Acre First Year—So Can You

ORDER YOUR BERRY PLANTS NOW Send for Special Rhubarb and Berry Price List. J. B. WAGNER, Rhubarb and Berry Specialist, 1550 E. Villa St., Pasadena Cal

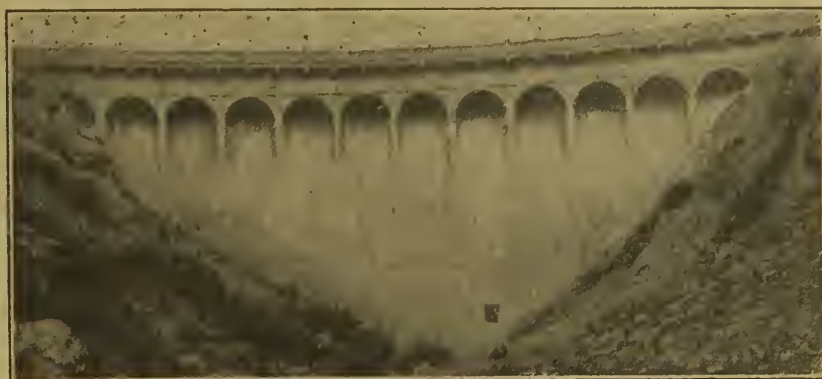
Avocado Trees

Largest stock of field grown trees in the state. Oldest exclusive Avocado Nursery in California. Write for prices, and full information as to care of trees, soil, and climatic requirements.

W. P. SHERLOCK
Box 111, R.D. 2, Puente, Cal.

DON'T NEGLECT TREE WOUNDS

Neglected tree wounds lead to wood-rot or wood decay which is responsible for an appalling loss of valuable producing trees. Protect pruning cuts or other wounds on your trees with Pabco Pruning Paste. Ask your dealer. Manufactured by the Paraffine Companies, Inc., San Francisco, Calif. —Adv.



Devil's Gate Dam, Pasadena. Bent Bros., Constructors

BENT BROS.

Specialists in Concrete Pipe, Irrigation Systems

34 Years Continuous Experience

We built Devil's Gate Dam, Lake Hodges Dam, Sweetwater Dam, 110 Miles Concrete Pipe for Boston Land Co., Fresno, and many great water projects in California, Arizona, Mexico, New Mexico, Oregon, Oklahoma, Washington and Nevada.

Water Development never paid so well as today. Write us.

Central Building, Los Angeles

Guernsey Females

Our herd reduction sale still continues and there is a lot of fine Imported and A. R. cows with high production records and show ring honors left to be sold. We are also offering the choicest lot of young stock ever in one herd in the West. A number of bulls of all ages from the above sired by King of Hollow-Hill and Effie's King.

Also 30 head of females 15/16 Guernsey that will make wonderful family cows.

All T. B. tested and guaranteed breeders.

Everything Priced Reasonably.

Hollow-Hill Farm

Colton, California

Poultry Queries

Conducted by J. A. Koethen

Moldy Grain

In one of the recent issues of the Cultivator I noticed an article about heated corn which caused me to inspect my stack of sacked Gyp corn purchased four weeks ago. To my surprise I found that where one sack touched another the center part was hot. Today I opened a sack and found in the center some lumps of moldy corn which I washed and put on trays and dried. Will it be safe to feed this washed corn to the chickens? If I cannot it will cause me considerable loss.—Subscriber, Oroville.

When mold has once begun to grow on grain it is hardly possible to wash it all off though you may remove all that shows. Mold, you know, is a kind of bacteria, like yeast, and it spreads rapidly, though not at first visibly, through whatever it is on. That is why it is so dangerous to chickens. You might feed this corn without any had results, for hens differ greatly in their susceptibility to mold. On the other hand, it might kill them. It is never safe to feed heated or moldy grain, but you might be able to get away with it if you fed it only to old hens, which are generally less susceptible than young ones.

Roup and Chickenpox

Our chickens have had chickenpox, and now, as they are nearly over it, several have choked to death with a cheesy looking substance in the throat.

We have been feeding sulphur in the mash and putting potassium permanganate in the drinking water. Is there any cure for this trouble?—Subscriber, El Cajon.

Your hens are suffering from a roup condition which sometimes accompanies chickenpox. In this case it is diphtheritic roup, which is hardest of all to relieve, but you may save some of them by swabbing the throat with silver nitrate or hydrochloric acid. If you use silver nitrate I think you will be compelled to use the five per cent solution, but you can ask your druggist about that. Make a swab by winding absorbent cotton on a very small stick, dip in the silver nitrate and touch the whitish places once a day. You can use peroxide of hydrogen in the same way, but more frequently. If you use hydrochloric acid it should be a 50 per cent solution. The object of the swabbing is to burn out the diseased tissues. Another treatment, which is recommended by Dr. Salmon, consists in spraying twice a day with a small syringe containing the following mixture: Extract of witch hazel, 4 tablespoons; liquid carbolic acid, 3 drops; water, 2 tablespoons. Keep the hens in a dry, sunny place and make sure that sanitary conditions are just what they should be.

Swellhead in Turkeys

A number of our early turkeys have what we call swellhead and we have found no satisfactory remedy. Does this come from a germ or do the birds take it without infection, and what can be done for them?—W. B. F., Lemoore.

Swellhead is not an infectious disease. It may be caused by lack of

fresh air, as in the case of turkeys that roost indoors instead of in trees, where they should roost, and it may develop in birds that roost out just because of a roup tendency in the stock. I had such a case once in a bird that had always roosted in the open, and I cured it by the permanganate treatment. Potassium permanganate is a splendid remedy when it is used externally but of no earthly use in the drinking water, as so many people use it. For swellhead drop a few permanganate crystals in a lard pail or quart measure of slightly warm water—just enough to make the solution a deep pink. Dip the head of the bird in this, after first massaging the nostril below the eyes, and hold it there while you count 20. You can let the bird take a breath, then dip a second time if you wish. The object is to wash out the nasal passages so that nature can heal them. Do this morning and night, always preparing the solution fresh, for it loses its strength quickly.

Liver Trouble

We have lost several hens lately and do not know what is the matter with them. They seem to droop and get weaker till they die. Examination shows in some cases a very much enlarged liver and in others straws in the crop, although they are not crop bound. They have fresh baled alfalfa to scratch in, scratch feed at 4:00 p. m., all they want, laying mash before them all the time, chopped fresh alfalfa daily or a run on green range. For a month we fed sprouted grain. It molded often but we took out the worst and washed the rest when it seemed necessary. None of the post mortems showed signs of

aspergillosis. I enclose sample of matted feathers we occasionally find under the wings of birds. Can you tell me what ails them?—Mrs. C. P. C., Fillmore.

The enlarged liver explains the death of the hens in which it was found. As to the others, the data given are not sufficient. That moldy grain might easily have caused aspergillosis, but in that case you would probably have found either yellowish or whitish nodules in the bronchi, lungs and other internal organs or membranous patches of yellowish or greenish color. "In very acute and rapid cases," says Dr. Salmon, "the lungs may simply show inflammation, or there may be formation of pus or abscesses in the kidney, lungs, liver or spleen. In some of these cases there may be extensive hemorrhages, either locally or throughout the body, and these may constitute the only apparent alteration. In the early stages of the disease no symptoms are noticed and it is only after they have progressed considerably that they become apparent. The affected birds do not follow the flock; they are very weak, scarcely able to stand, and consequently remain by themselves and move about very little. They remain in a recumbent position, resting upon the sternum, are sleepy, and if forced to run soon fall from exhaustion. The plumage is dull and rough, wings pendant, eyes partly closed, head depressed. The respiration is accelerated and accompanied by a rattling or snoring sound, particularly during expiration, and becomes difficult and labored, the bird opening its beak from time to time, in order to take a long inspiration."

I have quoted this description, not because I think your birds had aspergillosis, but because there has been a good deal of it this fall, and everyone ought to know the symptoms. It seems quite likely to me, though you do not give the symptoms, that all the hens that died had liver trouble and that the cause is probably overfeeding of grain or possibly too concentrated a ration. You had better make the mash half bran and cut down on the grain. At this season of the year pullets should have more grain than mash, but old hens should have about equal amounts. If you are feeding a good deal of corn or milo, Gyp or Kafir cut out part of it and feed wheat instead, and be sure the hens have green feed before them nearly all the time.

I think it is nits of lice that are matting the feathers together.

Bronchitis

Some of our chickens have a rattling in their throats and a discharge from their nostrils. They eat well and are otherwise all right. We have given them bluestone and potassium permanganate in the drinking water and put kerosene in their nostrils. What remedy can you prescribe?—Subscriber, Fallbrook.

Outside of removing the cause, which is the first and best remedy for any disease, I have found nothing that helped bronchitis so much as olive oil. Pour it down their throats two or three times a day, a tablespoon at a time (if you can get that much down) from a small pitcher or bottle. You can spray their nostrils if you like, with this spray, which Dr. Salmon recommends for more severe cases: Extract of witch hazel, 4 tablespoons; liquid carbolic acid, 3 drops; water, 2 tablespoons. Potassium permanganate in the drinking water (pink tea) is practically worthless, because it loses its strength so soon in solution, and kerosene is pretty severe. Bronchitis is caused almost invariably by dampness somewhere. It may be you have too many hens in a house, or that the house is badly ventilated so that moisture collects on the walls at night. Possibly your yards are not well drained or your houses do not face the sun or stand in a hollow so that the damp air falls on them instead of away from them. Whatever the cause is, you will have to remove it before you can cure the trouble permanently.

Give generously of yourself this Christmas. Unless some of your love, your thoughts and your interest in others accompanies your gifts they will be of small value no matter how much they cost.



OLYMPIC POULTRY FEEDS

Make a Healthy, Productive Flock

POULTRY feeds must contain the proper ingredients, correctly blended and accurately balanced, to produce maximum results. That is why every comparative test proves OLYMPIC Poultry Feeds to be without either equal or superior.

THE PORTLAND FLOURING MILLS CO.,

Sebastopol, Cal., Sept. 22, 1920

Gentlemen:

I have checked up my egg record for the first three weeks of September, during which time I used your OLYMPIC SCRATCH FEED and OLYMPIC EGG MASH, and I find my flock showed a remarkable increase, the average of the last three days of the test over the first three showing 137 1/3 eggs per day increase, or 70% gain. My hens are also laying the largest eggs I have ever had, weighing over 26 ounces to the dozen. The pullet eggs went to 19 and 22 ounces on the OLYMPIC feeds. This I call remarkable.

I have been breeding for forty-five years and exhibiting for thirty-five years.

I am delighted with your special molt and spring laying mash.

Enclosed find my full egg record for the twenty days, September 1st to 20th.

Yours very truly,

WM. BACON.

Dried Buttermilk

The drying of buttermilk for the various OLYMPIC Feeds, is proven the only practical method of introducing this most valuable ingredient into prepared feed. It does not become rancid when shipped or stored, nor lose any of its desirable qualities. The water has simply been removed, leaving the buttermilk in highly concentrated form.

OLYMPIC Scratch Feeds

BABY CHICK SCRATCH consists of small, uniformly ground grains suited for the critical first three weeks' feeding.

GROWING CHICK SCRATCH—Of slightly larger grains for the youngsters up to 8 or 9 weeks of age.

SCRATCH FEED—For full grown chickens. Properly balanced proportions of Wheat, Cracked Corn, Kafir Corn, Milo Maize, Hulled Barley, and Oats, Buckwheat and Sunflower Seed.

CRATE FATTENER tears down the muscles and builds up the flesh; making the meat whiter, sweeter and more tender in the shortest possible time.

If your Dealer cannot supply you, address

The Portland Flouring Mills Co.

Merchants Exchange Building.

San Francisco, California

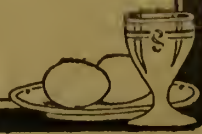
C. B. Sharp, Agent.

OLYMPIC Dried Buttermilk Feeds

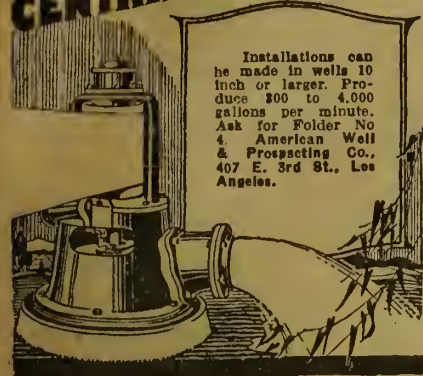
DRIED BUTTERMILK in the following feeds not only supplies its share of nutrition, but the lactic acid multiplies the digestive and assimilative properties of all other ingredients contained therein.

CHICK MASH is a body builder and feather grower. It climinates the dangers of White Diarrhoea or bowel trouble.

EGG MASH is the egg-making feed and tonic for health and strength. It increases laying to a greater extent, over a longer period and with 20 per cent less feed consumed.



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Installations can be made in wells 10 inch or larger. Produce 200 to 4,000 gallons per minute. Ask for Folder No 4. American Well & Prospecting Co., 407 E. 3rd St., Los Angeles.

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Farmers, Miners, Builders—people in every kind of business are saving money buying used or renewed pipe from us. We sell every kind of pipe. Send in a list of your requirements today and get our prices. We have saved hundreds of people 33 1-3 to 50 per cent on their pipe bills. Here's a partial list of some of the miles of pipe we have in stock for immediate delivery:

8,000 ft. 6 inch Riveted 16 Gauge
700 ft. 8 inch Riveted 16 Gauge
5,000 ft. 12 inch Riveted 12 Gauge
1,000 ft. 18 inch Riveted 12 Gauge
800 ft. 22 inch Riveted 14 Gauge
300 ft. 24 inch Riveted 14 Gauge
500 ft. 36 inch Riveted 12 Gauge
10,000 ft. light wrought iron 8 inch pipe with cast iron collars.

All above pipe thoroughly overhauled and inspected and ready for immediate use.

We also have large quantity standard pipe and screw casing, pressure tested and guaranteed.

Don't delay—write for our prices on your pipe requirements today.

PACIFIC PIPE COMPANY
137 Howard St., San Francisco, Cal.

GERMOZONE

"the Best Remedy for Poultry and Pet Stock"

The old reliable, proven remedy for Roup, Colds, Canker, Swelled Head, Bowel Trouble, Snuffles, Wounds, Sores, Loss of Fur or Feathers, Skin Disease, Etc.

H. A. Klewert, 5042 N. Long Ave., Chicago, Ill., says: "I had some of the worst kind of cases of roup in my chickens and I thought I would not save any but I have saved these birds, thanks to Germozone." H. A. Haines, Rosalia, Kas.: "If we had tried Germozone at first it would have saved us \$1,000 worth of expensive experiments." Mrs. T. A. Morley, Gallen, Mich.: "Have used Germozone 17 years and could not get along without it." E. W. Thiel, Waukesha, Wis.: "I have used your Germozone for white diarrhoea in baby chicks and sure got wonderful results. I also use it right along on grown fowls."

Germozone is sold by most drug, seed and poultry supply dealers, or mailed postpaid in 25c, 75c and \$1.50 packages, from Omaha. Poultry Book and Book on Diseases FREE.

GEO. H. LEE CO., Dept. F-30 OMAHA, NEB.

NOTICE

All Poultry Breeders and Poultry Supply Houses

Wagner Medicated Poultry Roost

No more Spraying

No more Lice

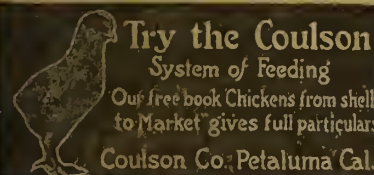
No more Mites

Complete and permanent eradication of Mites and Lice.

E. W. Badger Sales Co.

Distributors for California
LONG BEACH, CAL.

Sold in Los Angeles through Germain's, N.E. corner of 6th and Main Streets.



Try the Coulson System of Feeding

Our free book Chickens from shell to Market gives full particulars

Coulson Co., Petaluma Cal.

KEEP BEES

Let them gather honey for your table and make your fruit more fruitful. Free booklet and price cost of beekeepers' supplies for the asking.

The A. I. Root Company of California

1824 East 15th Street
Los Angeles, Cal.

Everything for the Beekeeper.

QUESTIONS AND ANSWERS

(Continued from Page 839.)

succeeded we will be glad to pass on the information.

Copyrighting Farm Name

Can a ranch name be copyrighted? If so, what would be the advantage and how would one proceed? Could I obtain a list of ranch names already copyrighted?—Subscriber, Anaheim.

There are some two or three methods of protecting a ranch name or a trade mark. We believe that by writing to the Secretary of State for California, Sacramento, and asking for blank application one will receive the blank which will permit the application in regular form. This with a fee of \$5 gives protection within the boundaries of the state. Where one wishes protection for a trademark or brand to use in marketing any product in any state of the Union he may secure it by writing Patent Office, Washington, D. C., and applications will be forwarded and a copyright or trade mark right secured. Where Eastern markets are to be sought for a particular product the federal trade mark rights should be secured. We believe there is also a farm name protection, which may be secured through the secretary of state, which would give exclusive right to the use of the name as applied to a farm. We presume the secretary of state can also give list of such names as are already protected. There is little of value other than sentimental excepting where one wishes to protect the mark on any product to be put on the market.

Gumming of Prune Tree

I want some information in reference to my prune tree which I planted two years ago. It has not made sufficient growth, although it bore some fruit this year. Early in the summer it started to shed gum from the joints in the stocks, now it has reached to the tips of the branches. Is this a disease? If so, how can I treat it, or had I better replace it with another? If I have to replace what would the best kind be for this district?—Subscriber, Los Angeles.

This matter of gum on deciduous trees is most exasperating as it is an indication of trouble rather than a disease in itself. It is in no sense like the gum disease or gummosis of citrus trees. Hesler's "Manual of Fruit Diseases" says: "Like other stone fruits, the plum is subject to gum flow when injured in any way." "Gum flow is here used broadly to indicate a sign of disease or injury rather than any specific disease." However, it adds: "In the Pacific Northwest a bacterial gummosis has recently been studied, and the cause, found to be Bacterium Cerasi." "This trouble on the plum is often erroneously called winter injury and sun scald, but it has been shown that in most cases at least the action of the sun has nothing to do with the production of this disease. Cankers similar to those on the cherry are produced. Such lesions on the plum, however, exude noticeably less gum than those on the cherry." The Oregon agricultural experiment station, Corvallis, issued a bulletin by U. P. Hendrick on gumming of prune trees in that state. We believe there is no cure other than to create right conditions of soil and moisture to put the trees in good health.

Walnut Codling Moth

Owing to the great size of walnut trees the "spray" generally used is that known as the dry or dust spray. The spray consists of kaolin, merely as a carrier, with nicotine sulphate and arsenate of lead added. Proportions may be somewhat changed by conditions, but here is the formula as given in the Cultivator's spray number, August 9, 1919: Nicotine-Arsenate. Kaolin (about) 67 parts, hydrated lime (about) 16 or 17 parts; nicotine sulphate (40 per cent) 1 or 2 parts, dry arsenate of lead 15 parts. However, this dust spray is now being offered to trade ready prepared for use and doubtless would be more effective than home made mixture. The time for the application is at blossoming time or soon after in the spring. Mean-time secure thorough eradication of pest which may be hidden in old sacks, boxes or in warehouses.

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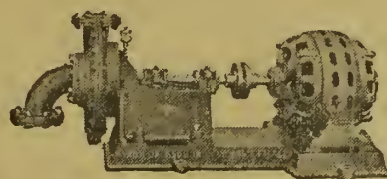
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INDEX

California Cultivator

Vol. LV

July-December, 1920

Inclusive

Accidents, Avoiding, 790
Acorns, Yield of, 327
Agriculture, State Aid for, 783
Alfalfa—Prompt Cutting, 228
—Bulletin on Caterpillar, 405
—Peruvian, 515
—Variety, 606
—Weevil, 635
Alkali, Bulletin on, 284
—Cure for Black, 510
Almonds, 250
—History and Culture, 719
—Varieties for Pollinating, 725
Antelope Valley Water Supply, 635
Anti-vivisection, 504, 576
Ants, Repellent for, 325
—Fighting Argentine, 354, 573
—Poisons for, 402
Aphis, Destructive for, 303, 703
—Woolly, 784
—Controlling, 795
Apple Inspector, 87
Apples, Cal. Boxed, 407
—Export Outlook, 457
—Spraying, 702
—Tuolumne County Beauties, 761
Apricots, Drying, 41
—Summer Pruning of, 222
—Replanting, 666
—Not Bearing, 691
—Gummosis, 782
Arsenate of Lead, Patents on, 572
Arenates, Be Careful With, 218
Associations, Butter and Ice Cream
Makers, 194
Auto, School for, 326
—Million New, 361
—Beating the Train, 504
—Battery Troubles, 507
—Driver Trouble, 87
—One a Day, 754
Avocados for Budding, 10
—at San Marino, 216
—Inspection of Orchards, 246
—Enthusiastic Growers, 247
—at Altadena, 272
—Promising New, 320
—at Santa Paula, 320
—at Yorba Linda, 322
—Assoc. to Lunch, 423
—Planted, 473
—on the Half Shell, 512
—Pasadena Addresses, 565
—Oil from, 725
—Marketing, 729
—Pest, 761
—Spreading Information, 795
—Diseases of, 831
Barley, Mariout, 220, 318, 490
—Disease in Colo., 285
Barnyard, Mudgy, 681
Beans, Cal. 31
—Situation Discussed, 49
—Organizing in East, 214
—Blossom Blight, 223
—Red Spider on, 327
—Weevils in, 327
—Lima Prices, 514
—Velvet, 569
Beetle, 250
Beet Imports, 137
Bees, Swarming, 44
—Metal Combs, 384
—Yellow Jackets, 638
—Treatment of Diseases, 653
Beet Pulp, 636
Beets for Stock, 103
—Prices of, 182
Berkshire, Farmer's Hog, 108
—Top the Market, 137
—Sale Records, 225
Bermuda Grass, Eradicating, 637
—Killing Out, 728
Berries, 765
Bird Roosts, 497
Birds in Enclosure, 765
Blackberry, Cory, 159
—Himalayas not Ripening, 516
Black Scale Control, 828
Blight, Pear Stock Resistant to, 211
Bonds, Keep, 150
—Knocking, 214
—Better than Oil Stock, 398
Book Reviews
—Mrs. Wilson Cookbook, 173
—Helping Men Own Farms, 185
—Soil Alkali, 651
—Price of Milk, 708
—Home and Farm Food Preservation, 783
Borer, Peach Tree, 635, 802
—Attacks Drought Injured Orchards, 729
Bots, 55
Bougainvillea, Blasting, 102
Breeding—Bull Endorses Note, 21
—Essentials of, 765
Bud Selection, Apricot and Plums, 94
—Increasing Its Scops, 150
—789
Burnut, 101, 159
Butter, Cal. Leads, 20
—Quality Up, 182
—Color for, 784
Butter and Cheese Scoring Contest, 20, 812, 775
Buttermakers Short Course, 553
Buzzards, 242
Cabbage, Spray for, 130
—Aphis on, 159
Calf Club, First Jersey, 742
California, Happy Breeding Grounds, 163
Cakes on Milk Substitutes, 161
—Feeding, 841
Camphor, Culture of, 102
Canners Encourage Agriculture, 280
Canning Demonstration, 219
Cantaloupes, Review of Season, 46
—Standardization, 154
Caracas, Burning, 293
Castor Beans, 74
Cattle, Auction of, 250
—Foray Upon, 335
—Better Conditions or No Cattle, 518
—Shortage, 680
—Market Situation, 772
Cattlemen's Assoc. Meets, 251
—at Los Angeles, 443
—Meet at Salt Lake, 450
—Western at Salt Lake, 612
—Meet in S. F., 683
—Try New Market Plan, 803
Cedar not Inferior, 828
Census—Number of Farms in Cal., 241
—of State, 328
Cereals at Univ. Farm, 725
Cheese from Goat Milk, 630
Cheese Parasites, 485
Cherry, Largest Tree, 685, 720, 828
Cider, Preservation of, 272
—Will Keep Sweet, 437
—No Tax on, 512
Citriculture, Instruction in, 177
Citrus Pest Control, 123
—Pioneer Orchard, 216
—Porterville Orchards, 315
—Over 80 Millions Worth of Fruit, 368
—Pest Control by Duet, 397
—Nursery Stock, 402
—Fruits of Ghats, 438
—Young Orchards, 459
—Black Fly, 571
—Pruning, 631
—Northern Belt, 632
—Information re Culturs, 638
—Big Crop, 662
—Fall Plowing in Orchard, 608
—Varying Culture, 790
Citrus Blast, 97, 476
Citrus Canker, 792
Citrus Institute, 3, 95
Clover, New, 385
Coconut Products, 751
Colleges of Agriculture, 98
—Cal. Boys Artend O. A. C., 245
—Defending, 360, 489
—Bigger and Better, 718
Contributors
—Bemis, M. E., 12, 76, 157, 299, 305, 456, 460, 475, 639, 695, 730, 821
—Braunton, E. B., 40, 71, 123, 158, 184, 213, 210, 246, 282, 315, 322, 436, 441, 472, 474, 508, 514, 601, 631, 641, 666, 697, 731, 792, 794, 828
—Bennett, J. P., 135, 329, 482, 484, 528
—Bennett, B. S., 137
—Barnard, L., 409
—Bacon, C. A., 610
—Bloom, C. M., 499
—Bristol, W. M., 829
—Crues, W. V., 37, 149, 760
—Calkins, J. E., 99, 246
—Christianson, S. V., 69
—Castle, C. V., 332
—Coolidge, D. W., 565
—Challies, P. A., 568
—Crow, M., 789
—Cullbertson, J. D., 827
—De Camp, Jas., 269, 597, 697
—Dahl, A. L., 317
—Day, L. L., 634
—De Ong, E. R., 729, 742, 761
—Davis, R. E., 808
—Fletcher, L. J., 220
—Flintham, S. J., 721
—Gould, A. R., 12, 13, 156, 157, 299, 804, 440, 478, 597, 605, 729, 730, 834
—Giffen, W. M., 179, 467
—George, Frank, 181
—Howard, Frank, 67, 152, 215, 318, 333, 895, 755
—Hecke, G. H., 220
—Hitte, T. J., 230
—Hughes, C. L., 308, 518
—Hodgson, R. W., 505, 563
—Hallman, W. H., 665
—Iverson, J. P., 104, 704
—Jackley, J. G., 52
—Johnston, W. A., 826
—Kortum, M., 24
—Kostchen, Jean A., 112, 168, 200, 213, 257, 300, 346, 498, 530, 584, 688, 757, 812, 813
—Krothen, E. L., 317, 668, 835
—Klein, Jack, 539, 736
—Kaufman E., 665
—La Follette, J. R., 125
—Messenger, C. B., 5, 91, 95, 241, 315, 349, 395, 541, 542, 629, 653, 663, 720, 755, 819
—Miller, R. R., 192
—McLean, R. R., 452
—Mathews, R. R., 569
—Mansfield, Geo. C., 721
—Neff, J. B., 831
—Nelson, J. W., 33
—Nougaret, R. L., 248
—Prigs, G. W., 44
—Quayle, H. J., 211
—Reichard, D. F., 11, 156, 304, 440, 597, 729
—Rovee, R. P., 123, 179, 245, 286, 370, 408, 427, 442, 503, 521, 576, 627, 642, 737, 803
—Robson, J. A., 267
—Robinson, R. T., 360
—Ryan, H. J., 601
—Shamel, A. D., 821
—Spellmeyer, A. L., 35, 147, 335, 548, 644, 680, 736, 770, 772
—Smith, R. E., 397
—Smith, G. E. P., 830
—Shinn, C. H., 493
—Snowden, R. R., 600
—Surr, Gordon, 721
—Scott, L. B., 739
—Turnbow, G. D., 20
—Taylor, R. H., 49
—Ting, Peter, 67
—Thomas, Jessie M., 243
—Tomson, F. D., 281
—Tocher, W. J., 627
—Tucker, T. C., 719
—Trahams, D. D., 787
—Vale, R. S., 93
—Workins, D. W., 48
—Wilson, N. C., 128, 284
—Wolcum, R. S., 147, 313
—Wisker, A. L., 211, 469
—Wyman, F. G., 245
—Wilson, S. W., 276, 472
—Yetter, J. H., 429
Conventions
—Cal. Citrus, 3
—45th A. P. A., 27
—Citrus at Porterville, 39
—Citrus at Covina, 43
—State at Fresno, 152, 472, 510
—Cal. Cattlemen, 514
—Creamery Operators, 582
—Fresno Program, 595
—Farmers National Congress, 640
—International Livestock, 646
—Account of State, 663
Cooperation, 94
—Organized Protection, 100
—Grain Elevators, 188
—In Tractor Ownership, 256
—Be Reasonable, 318
—By Truck Farmers, 365
—Giffen of Raisin Growers Makes Statement, 467
—In the Large, 662
—Larner, 758
—Poultrymen Stand Together, 781
—Growers Organizing, 795
Coovrighing Farm Name, 845
Corn, Disease in Philippines, 49
—Ear Worm, 102
—Measuring in Crib, 380
—High Producing, 769
Cotton in Ariz., 48
—In Egypt, 51
—Seed Hearing Postponed, 235
—Quarantine Meeting, 329
—Quarantine Strengthened, 397
—Commercial Interests Organize, 419
—Kern County, 436
—Trials and Troubles of Growers, 456
—Long Staple Seed Selection, 475
—Argentine, 481
—Spot Market, 724
—Roll Weevil, 783
Cover Crops on Dreher Place, 5
—September, 218
—and Fumigation, 270
—Thumbe from, 817
—for Walnut Orchard, 438
—Mellot and Barley, 480
—Organic Matter for Citrus Soil, 563
—Rur Clover, 636
Cow—Will She Come Back, 76
—Scrub, 161
—Droving Out, 481
—Needy Food, 705
—Feeding, 840
Cow Testing Worth While, 23
—Value of, 136
—Pays, 256, 549
—How to Get Full Benefit, 833
—Profits Lost, 741
—Associations in the West, 804
Credit—Financing Wool Growers, 109
—Better Finance, 150
—Capitalizing Food Production, 561
Cura Report, Kaufman, 665
Cunts, Work of, 184
Cucumber Diseases, 657
Cultural Methods, 710
Cust Leaf, Peach, 10
—of Orange, 120
—Currents, Greek, 191
Curtains Damage Vines, 73
Dahlia Club, 235
—Keeping, 516
Dairy Improvement in Sonoma, 20
—Meeting at Hanford, 110
—Receipts, 214
—Receipts Tripled, 228
—Congress at Waterloo, 407
—Specifications for Barn, 480
—Around, 770
—Profit of, 774
—Breeds, 774
—Milk and Cream Samples, 808
Dairy Council at Hanford, 63
Dairy Cow Competition, 833, 679
—L. A. Co., 405
—Harriman Wins Prize, 840
Dairymen's Opportunity, 627
—Stay in Business, 680
—Arizona Cooperate, 808
Dairy Utensils, Care of, 078
Dates—Cotton, Dates and Onions, 629
—Near Coast, 728
Dehydration Convention, 671
Dohydrator—Dried Fruits and Vegetables, 40
—(See Evaporator)
Demurrage, Reciprocal, 398
Department of Ag., State, 73
Dewberries, 703
Diamond Bar Growing, 167
—Ranch, 505
Disinfecting, 226
Doctor of Trees, 6
Dodder, Killing, 188
—Killing with Brine, 403
Ducks Destroy Mosquitoes, 779
Durocs at Berylwood, 51
—Foldman, 251
—Mexico Comes to Cal., 742
Dusting for Control of Citrus Pests, 397
Ear Wig, 328
Eczema, 775
Egg Laying Contest, Why, 24
—Cal., 25, 113, 139, 169, 201, 233, 337, 461, 585, 627, 689, 813
—American, 25, 139, 460, 585, 781
—All Northwest, 27
—Storrs, 112, 232, 386, 555, 747, 781
—National, 112, 233, 460
—at State Fair, 257
—New Cal. Contest, 337
—Sonoma, 689
Eggs, Graded, 27
—Egg Day, 27
—Clean, 84
—Keep Cool, 119
—Storage, 169
—Soft Shells, 621, 746
—Advertising, 654
—More, 689
Equipment, Better, 70
Eucalyptus Season, 606
Evaporation of Fruits, 149
Evaporator for Home Use, 37
—Commercial, 41
Exchange Annual Report, 368
Experiment Station, Where Located, 702
Fairs and Shows
—Cal. State, 1, 815, 349, 370, 408
—Tulare, 53, 339
—Better State, 177
—L. A., 192, 251, 406, 503
—Premiums at L. A., 224
—Patterson, 242
—Program State, 267
—Roeding's Dream, 278
—Orange Co., 283
—Sonoma Co., 285
—San Fernando, 319
—Many Entries, L. A., 334
—Awards at State, 372
—So. Cal., 385, 450, 538
—San Fernando Awards, 399
—Poultry Awards at State, 416
—Program of L. A., 427
—San Joaquin, 442
—Dairy Exhibit at L. A., 442
—Tulare Awards, 446
—San Diego Co., 452
—Kings Co., 482
—Frasno Co., 484
—University Fruit, 512, 601
—Riverside Awards, 577
—Pasadena Flower, 603
—of Oranges and Olives, 694
—Arizona's 16th, 695
—Oroville Citrus, 721
—Wine at Portland, 736
—U. C. at Portland, 738
Farm Bureau Meeting at Salt Lake, 182
—Studying Market Methods, 242
—Wise Men of the East, 274
—Finance, 278
—Glenn County Dates, 335
—Am. Federation, 465, 694, 698
—Largest Home Department, 619
—Will Market Products, 665
—Federation Convention, 676
—L. A. Annual, 763
Farm Bureau Hog Sales, 110
—at State Fair, 219
Farm Business, 358
Farmer and World Trade, 276, 472, 672
Farmers Strike, 754
Farm Labor, Organizing, 214
Farm Organization, 512
Farm Papers Official Oranges, 430
Farm Power, School of, 154
—Exhibit of, 269
—Motor Dangers, 269
Farm Prizes at Durham, 491
Farm Profits Survey, 572
Farms, Number of, 241
—Competing for Prizes, 364
Federal Farm Loan, 702
Feed for Pig Club, 481
Feeds, Value of Cutting, 136
—and Care, 228
—Does Grain Pay, 332
—Beet Pulp, 636
—Value of Coconut Meal, 645
—Pumpkins for Cows, 728
—for Dairy Cow, 737
Fence Laws, 250
Ferns, Culture of, 481
Fertilizer from Fish, 119
—Best, 328
—Fish for Oranges, 480
—Fanning Fish for, 480
—Conference on, 371
—Nitrate at Riverside Station, 600
—Cotton Seed Meal, 653
—Sulphur as, 801
—Furrow System of Application, 821
Field Mice, 638
Flax vs. Chemicals, 6
—Merced with Peaches, 186
—Failure of, 481
—Drooping, 606
Fire Prevention, 94
—Protect Woods from, 163
—Farm Bureau Organizes, 171
—Amount of Water for, 438
—Day, 468
—504
—on Watershed, 724
Fish of Salton Sea, 676, 777
Flax May Come Back, 650
Fliss—Clean Up Stable, 23
—Scrub Worm, 23
Fly Repellent, 192
Forestry Means Growth, 493
—More Rangers, 531
—Work in, 651
Frost Prevention, 468
Fruit Growers Day, 542
Fruit Inspection at Shipping Point, 119, 669
Fruit Juices, Circular on, 73
Fruits by Parcel Post, 246
—Label Quantity, 248
—Shipping Point Inspection, 270
Fumigation of Citrus, 98, 123
—at Leffingwell, 125
—Factors Influencing, 147
—New Activities, 182
—Lack of Uniformity, 211
—Problems of, 243
—Chlorocane Process, 283
—Schedule Chart, 313, 518
—Mackie Installs Vacuum, 356
—Florida Endorses, 459
Fur Production, 182
Furrow-Manure Method, 821
Gambling at Fair, 398
Garden Ornamental Calendar, 12, 13, 167, 158, 299, 304, 339, 478, 604, 639, 730
Garden Vegetable Calendar, 11, 12, 156, 157, 304, 500, 440, 441, 597, 729
Gasoline—Off Ag'in, 70
—More, 94
Gesse—Sick Gossling, 25
—Johnson Grass Kills, 233
Getting Together, 35
Goats, Cheese from Milk, 630
—Correspondence Course on, 708
—Milk Profitable, 837
Grain, Bulk Storage of, 384
—Cooperative Elevators, 188
Grange, State, 322
—Annual of National, 385
Grape Day, 247
Grapefruit, Pink Fleshed, 191
Grapes, Evaporating, 73
—Standardizing, 191
—Nougaret's Survey in South, 213
—Early in Imperial, 248
—Meat Costa Millions, 319
—Cal. Industry, 320
—Thompson Seedless, 327, 379, 439, 640
—Zante Currant, 393
—Spray from, 393
—Baking, 516, 563
—for San Fernando, 544
—Blazing Star, 544
—Bioletti Prunes, 794
Grass, Rhodes, 102
—Johnson, 130
—Perennial Rice, 190
—Sudan in North, 479
—Napier or Elephant, 481
—Sudan, 497
—Bermuda Eradicating, 544
—Bahia, 783
Guavas, 250
Guernseys—Elliott-Brant Leader, 22
—New Record, 292
—High Producing, 809
Gum Disease, Vigilance With, 246
—802
—of Deciduous Trees, 845
Gypsy Moth Extending, 277
—569
Hampshires, Crack Offering, 22
—Breeders Meet, 81
Hay, Measuring in Stack, 130, 250, 638
Hereford Journey, 108
—Breeders Plan, 109
—Example of Prolificacy, 164
—Big Event, 199
—Great Event, 546
—Good Returns, 613
—130 Average \$372, 649
H. C. L., 94
—Real Problems, 94
Hog Cholera Immunity, 108, 809
—Points on, 412
—Months, 647
Hogs, Record Price, 19
—Olive Fish Course, 21
—Lousy, 53
—Ariz. State Organization, 54
—Decrease in Population, 76
—10,000, 80
—Mineral Mixture for, 111
—Worms and Disease, 193
—Make Production Possible, 196
—and Bud Holes, 197
—Start with Pure Bred, 329
—Value of Pure Bred, 330
—Early Castration, 331
—Delicacy for, 333
—Facts for Producer of, 485
—Somebody Gets a Big Profit, 647
—Cholera Immunity, 708
—Lobs in Shipments, 771
—Feeding Still Profitable, 774
—Kind for Breeders, 775
—Posterior Paralysis, 777
—Vs. Vegetable Oil, 809
—Fattening, 837
Holiday, American, 720
Holsteins—Great Bull, 54
—New Record, 105
—Another Record, 110
—Thirty Pounder, 135
—How Produced, 197
—Jane Garden, 230
—Condes a Winner, 504
—Maxwell Farms, 645
—Selected at Delhi, 645
—Breeders to Meet, 775
Holt, Benjamin, 754
Honey Marketing, 653
Hops, Lako Co. Crop, 474
Horses, Buy Western, 193
—Eastern Dealers Buying, 196
—Prizes for Stallions, 228
—Rising Demand, 256
—Ration for, 741
—Cost Less, 742
Horticultural Commission, Arizona, 97
Humus from Cover Crop, 317
Hunt Appointed to Roms, 430
Illustrations
—Model State Fair, 1
—Dr. H. J. Wahner, 3
—Breaking Plowshare, 3
—Summer Cover Crop and Farrowing, 5
—Winter Cover Crop, 9
—High Lady Sensation, 19
—Elsie of the Rancho, 22
—Prof. Nelson, 33
—Evaporator for Home Use, 37
—Concho Prince, 51
—Flock of Sheep, 54
—Gardens, 63
—Concho Oaks, 65
—Top Worked Citrus Trees, 71
—Tilton Apricot Tree, 89
—Butts County Rice Fields, 91
—Santa Rosa Plum, 95
—Aqueduct, Anderson-Cottonwood, 121
—Steer and Hog Loss Chart, 123
—Owl Fumigating Plant, 123
—Rainey and Hall, 126
—Mills Orchard Lemon House, 145
—Old and New Ways of Drying Fruits, 149
—Group Citriculture Class, 177
—Limoneira Housing, 177
—Peach Sizer, 181
—Armitage and Crypts, 184
—Barn of Doors, 194
—Shady Place, 209
—Bartles Scions on Wild Stock, 211
—Blanchard Trade with Culbertson, 216
—Bastanbury Sale, 231
—Redwood Forest, 243
—Strawberries in Stump Land, 243
—Observing Avocados, 246
—State Fair Crowd, 266
—George Collins, 269
—Power Tent at Fair, 269
—Placencia Packing House, 274
—Farm Bureau on Lemon Heights, 274
—Electric Prune Picker, 282
—Fumigation Chart, 313
—Porterville Orchards, 315
—Four Year Old Acedon, 323
—Verdugo Woodlands, 345
—Directors Nat. Tractor Show, 347
—State Fair Scenes, 349
—Delhi Scenes, 364
—Champions at State Fair, 374
—Zante Currants, 393, 401
—Lemon Men's Club at Santa Paula, 439
—395
—Banana Squash, 399
—Interior Hort. Bldg State Fair, 402
—Grand Champions, 427
—Ouy Hall, 429
—Entrance Verdugo, 429
—Tractors and Implements at Show, 433, 435, 438, 439
—Domestic of Shadals, 438
—Cultivator Cup, 465
—Hop Ranch in Lake County, 474
—Plate of Jubilee, 476
—Poultry House, 488, 499
—Stock at L. A. Show, 503, 525
—Diamond Bar Scene and Chart, 505
—Determining Soil Moisture, 508
—Rice Binders, 537
—Riverside Fair, 539
—Screen Bag for Grapes, 563
—Thompson Seedless Vineyard, 595
—Citrus Trees Showing Nitrate of Soda Application, 800
—Collie Dog, 625
—Dates and Cakes at Indio, 629
—Training Demonstration by Dr. Reed, 631
—J. W. Mills, 632
—Potato Field Day, 641
—Corn, 661
—Convention Meeting Places, 603
—Diamond Bar Pie, 678
—Butts County Oranges, 693
—Ariz. Fair Grounds, 695
—Harvesting Peanuts at Fontana, 697
—Lake Co. Peare, 701
—Olive Tree with Crop, 717
—Relation of Vegetation to Soil, 721
—Oroville Citrus Fair, 721
—Mrs. Proctor on L. A. County, 724
—Arundo Donax, 753
—Benjamin Holt, 754
—Black Monkeys, 755
—Egglond Poultry Scenes, 757
—Olive Oil Mill and Press, 760
—Pineapple Plantation, 783
—Haden Mango, 794
—Spray from, 794
—Orange Tree, 796
—Overflow Gate, 817
—Map of Marshall Plan, 819
—Making Furrow for Manure Application, 821, 824
—Salt River View, 821
—Horticulturists at Santa Paula, 828
—Efficiency Irrigation Equipment, 830
—Univ. Stock from Portland, 836
Implements to Fit Tractors, 490
Initiative and Referendum Measures, 542
Inoculation of Seeds, Value of, 119
Insect, Control of Citrus, 123
—from Capetown, 568
—Gypsy Moth, 569
Inquiry at State, 6
Insurance, Mutual Makes Rapid Growth, 181
—Profitable, 214
—Crop, 755
International Institute—Hunt Appointed to Rome, 430
—America Presented, 621
Irrigation—Rice vs. Other Crops, 38
—Cass Delayed, 70
—Duty of Water, 93
—Labor Cost, 100
—1919 Act Unconstitutional, 182
—Store Food by Fall Irrigation, 818
—Tuolumne, 325
—Kings River Distribution, 456
—Fall, 504
—Dreaming Dreams, 799
—Marshall Plan, 819, 822
—Progress in Arizona, 821
—Citrus Orchard in Winter, 827
—of Orange Orchard, 829
—Efficiency in, 830, 835
—Vegetable Garden, 834
Japanese—Appeal to Justice, 5
—Immigration of, 38
—More Brides, 94
—Wallace's Statement, 126
—Increasing, 694
—Leaving, 720
Jersey Breeders Meet, 423
—Alama Interest, 612
—Sophie 19th, 679
June Bugs, 10
Justice, Wild, 790
Labor, Cutting Costs of, 100
—Who Gets the Money, 119
—at Dinuba, 219
—Wages Reduced, 754
—Glenn County Wage Scale, 783
Land Settlement—Allotting Delhi, 400
Leaf Hopper Control, 154
Legal
—Cowe Break Fence, 10
—School Attendance, 10, 824
—Responsibility for Minor, 10
—Pests on Land, 11
—Government Stakes Moved, 47
—Eucalyptus Near Line, 47, 407, 672
—Trespassing Stock, 47
—Recover Title, 47, 811
—Joint Homestead, 47
—Division of Estate, 74
—Paying Board, 74
—Torrens Title, 59, 75
—Judgment Does Not Outlaw, 103
—Note Lost, 103
—Road Right of Way, 103
—Fence Not on Line, 171
—Wages of Cook, 171
—Transferring Rice Property to Wife, 171
—Road Over Private Land, 307
—Will and Deed, 307
—Goat Not Paid for, 307
—Water Right, 307
—Excessive Fee, 308
—Broken Agreement, 308, 455
—License for Butchering, 308
—Pumping Plant, 321, 639
—Real Estate Agent, 380
—Produce License, 380
—Undelivered Deed, 380
—Open Account, 380
—Contract, 380
—Livestock Inspection, 380
—Embaras on, 407
—Cattle Mortgage, 407
—Setting Estate, 455
—Fraud in Trade, 455
—Pipeline Across Property, 455
—Wife's Property, 455, 763
—Fence on Line, 477
—Pay for Grading, 477
—Collecting Bill, 477
—Community Property, 516, 574, 763
—Undivided Estate, 517
—Net Time for Labor, 574
—Joint Checking Account, 574
—Claiming Heirship, 574
—Fencing Against Stock, 574
—No Will, 574
—Dog Poisoner, 574
—War Tax, 574, 763
—Crop on Leased Land, 574
—Overhanging Branches, 574
—Cutting Eucalyptus Roots, 575
—Avoid Probate, 575
—Joint Tenants, 575
—Right of Way, 639
—Husband's Estate, 639
—Husband's Property, 672
—Legal Name, 672
—Geographic Will, 763
—Deed, 763
—Separate Property, 763
—Irrigation District Assessment, 763
—Lease, 763
—Chicken Trespassing, 811
—Mining Claim on School Lands, 811
Legislation, Recent Meet Committee, 479
Legislative Committee, 404
Lekure, Item of, 560
Lemons, 126
—Sirellan, 128
—Mills Packing House, 145
—Bulletin on, 150
—Annual Club Meet, 395
—Lighting Plant for Farm, 735
Lilles, Cal. Native, 45
—639
Lime Needed, 668
Lipia Turns Brown, 765
Livestock, Decrease in, 105
—Need Better Program, 123
—Cattle Situation, 147
—Fits in Aged Herd, 161
—Money Value of Pure Breds, 164, 197
—Stock Buried at Davis, 167
—Value of Show Ring, 192
—Value of Showing, 196
—Market Terms Used, 835
—Purebreds, 276
—Disease Prevention, 488
—and Better Homes, 488
—at Delhi, 499
—Outline of Breed, 770
—Back to Normalcy, 787
—Making a Start With Purebreds, 804
—Good Farming, 805
—Loaned Off Lands, 510
Lumpy Jaw, 739
Luxuries, Must Have, 150
Mackie, D. B., Quarantine Chief, 628

Mangos, California, 794
Manure, Lustrous, 140, 146
Sawdust, in, 703
Market, Conditions of, 49
Studying, 212
Farmer and World Trade, 276, 472
Discontinued, 318
Cooperative, 475
Committee on, at Chicago, 572
Livestock Conference, 614
Directors in Nat. Meeting, 695
Sluggish, 720
Better Day, 736
Maskee Rotates, 566
Meat Helping Men, 70
Mealy Bug, 190
Campaign on, 439
on Grapes, 571
Control, 732
Meat, Storage for, 614
Eaters of, 775
Meat Packers, Truth About, 126
Meredith, 6
Milk Cows in North, 224
Feed Required, 297
Importance as Food, 882
Cost of 100 Pounds, 876
Whole vs. Skim, 482
Increase Use of, 704
Fixing Price, 720
Tastes and Odors, 771
Properties of, 773
Milking Shed, 681
Milk Producers, Win Again, 642
Mile for Fodder, 606
Proves Profitable, 776
Money Wanted, 598
Morning-Glory, Eradicating, 702
Cultivate, 765
Moter Cane, 289
Mountains Burning, 214
Mules Needed, 109
Fool Proof, 293

N. B. F. O., 443
Nematodes, 439
Immune to, 480
Newly Settled Valley, 189
Nitrogen Nodules, 630
Nursery, New Catalogs, 792
Nurserymen, License for, 516
In Annual Convention, 606
Ladies Auxiliary, 674
Nursery Stock, Order Now, 150, 754, 759
102
Improvement of, 789
Bud Selection, 789

Oats, New, 769
Official Organ, 430, 468
Oil, Industry's Need of, 497
Old People's Home, 59
Oleander, Poisonous, 250
Olive Oil, 760
Olives, Pickling, 40, 173
Foreign Crop, 95
Industry not Destroyed, 182
Regulations for Packing, 272
Scare Passed, 566
at 180, 568
Purest of Food, 726
Savory, 754
Curing in Salt, 799
Onions, Canary Island, 115
Oranges—Practical Growing, 67
Top Working, 71
Oil from, 129
Washington Navel, 213
in Kern Co., 472
Rough Skin, 544
New, 628
Orchards, Top Working, 129
Family Peach, 764
Planting and Irrigating, 831
Orgy of Lying, 279
Ostriches in Ariz., 57

Packers Pinching Pennies, 448
Packing House, Sacramento Valley
Lemon, 145
Paint, Cheap, 10, 74, 156, 802
Saves Rust, 365
Pointers on, 478
Painting, Resisting, 214
Parcel Post, 246
Pasteurization—What It Is, 52
Pasture, Permanent, 430
for Marshy Land, 606
Peach Blight, Get Busy With, 787
Peaches are Popular, 96
Don't Pick Green, 216
Stock Immune to Nematodes, 403
Stock for, 516
Scab, 636
Peach Growers Name Prices, 95
Peach Sizer, Successful, 161
Peanuts, Methods of Culture, 697
Steam Cooked, 762
Pear Ony, 150
Pears, Resistant Stock, 211
Be Careful, 242
Wipe to Remove Spray, 400
Cal. O. K., 407
Pruning, 544

—Sacramento Valley, 571
—On Apple, 638
—Permanency, 64
—Perfection Seeds, 802
—Phylloxera, 283
—Pig, Winter Pasture for, 704
—Pineapples in Hawaii, 350
—Plant Protection, 97
—Platform, Planks in, 6
—Plugging Trees, 541
—Plums—Placer Co. Specialist on, 73
—Japanese, 152
—Pomegranates, 637
—Pork Day, Second, 550
—Potatoes, Federal Grades for, 31
—All Tops, 59
—San Gabriel Valley, 189
—Aver Crops, 404
—Better, 459
—Bermuda, 476
—Winter, 430
—Field Day, 641
—Certified Growers Meet, 671
—Curly Leaf, 703
—Running Out, 705
—Deep Eyed, 779
—Dip, 802
Poultry—Partridge Rocks, 25
—In Ariz., 56
—Up-to-Date Marketing, 56
—Eat Slackers Hens, 56, 417
—Break Up Broody Hens, 57
—Caponizing, 83
—Early Molters, 83
—Summer Culling, 112
—Culling Demonstration, 139
—Fattening Cockerels, 163
—Cleanliness Factor in Economy, 200
—Profit, 213
—Cal. Trained, 232
—Eggs and Walnuts, 257
—Standardization, 259
—Woman Who Works With Hens, 300
—at L. A. Livestock, 300, 530
—at Petaluma, 317
—Price of Pullets, 337
—Wing Clipping, 417
—Best of Circumstances, 417
—New Field, 460
—Best House, 498
—Pebelant Chicks, 530
—Some Laying, 531
—Roosts and Nests, 544
—Adventuring with, 564, 813
—Poor Appetite, 585
—at Riverside, 587
—Price for Leghorn Male, 655
—Purebred Leghorns, 689
—Concrete Floor for House, 746
—Gibson's Trapping, 757
—Stand by Organization, 761
Poultry Diseases—Wry Neck, 27
—Ruptured Oviduct, 27
—Intestinal Worms, 83, 113, 301
—Blind Pullets, 63
—Soft Shells, 113
—Double Yolks, 113
—Diphtheria Roup, 113
—Mischievous Chicks, 113
—Cholera, 301, 417
—Featherless Chicks, 336
—Ticks, 337
—Digestive Trouble, 337
—Stick Tights, 337
—Fighting Parasites, 386
—Substance in Throat, 387
—Hens Drop, 384
—Gasping Pullets, 387
—Gizzard Worms, 417, 531
—Feather Pulling, 531
—Aspergillosis, 531, 711
—Chicken Pox, 545
—Liver Trouble, 545, 844
—Sudden Deaths, 545
—Sick Chicks, 545
—Ticks and Lice, 689
—Cannibalism, 746
—What Causes Roup, 746
—Blue Ointment, 746
—Catarrhal Cold, 746
—May Be T. B., 730
—Louse, 761
—Roup and Chicken-pox, 844
—Bronchitis, 844
Poultry Feeds—Hulled Barley, 25
—Laying Mash, 232, 747
—Milk for Lavers, 301
—During Moulting, 481
—Winter Pasture, 639
—Moldy Grain, 844
Power, Using, 38
—Increasing Farm, 87
—Progress in Use of, 128
—Horsepower, 220
—Act Finds Favor, 276
Production Increased, 220
Table for California, 593
Promotion, 150
Protection, Southern Congress on, 769
Prune and Apricot Growers—Apricot
Prices, 96
—Fixed Prices, 215
—Reorganizing, 400
—Outside Market in Association, 473
—Prunes, Curing, 190
—Electric Picker, 282
—Being Shipped, 322
—Drying in Sun, 379

—Fair Price for, 400
—Frogs, 407
—Irrigation, 634
—Insect Pollution of Imperial, 761
Pruning Orange Trees, 505
—Dr. Reed on Citrus, 631
—Vineyards, 758
Publicity Aids in Law Enforcement, 49
Public Sales, First Run, 19
—Winsor Ranch, 22, 73, 161
—Hudsons in Oregon, 23
—Lamb's Dueros, 135
—Concho, 160
—Lookingbill, 163
—Bastanchury, 167
—Milk Goats, 194
—Stalder, 227, 575
—S. W. Berkshires, 230
—Butte City, 231
—Holstein at Patterson, 254
—Prims Cattle, 294
—Bray, 296
—Consigning to Nat. Dairy, 407
—Allama Farms, 450
—McCarthy-Shinn, 486
—Newton-Christians, 546
—Kings Co. Poland-China, 582
—Brown's Jerseys, 443, 612
—Rosamaines' Buyer, 640
—Kounias, 646
—Three Day Hereford, 649
—Toyon Holstein, 682
—California Shorthorn, 683
—Big Sale by Cebrian, 737
—Finnell Herefords, 738
—Tulare Holstein Average, 772
—Jeffries Holsteins, 775, 806
—Vogel, 776
—Rejada Guernseys, 806
—W. A. Thompson, 806
Pumping Plant at Cucamonga, 45

Quarantine Pays, 214
—Cotton, 242
—Keep Them at Home, 504
—Soldiers Violate, 759
—of Potatoes, 762

Rabbits, Reduce Express on, 27
—Skin Disease, 159
—Destroy Trees, 222
—Self Cleaning Hutch, 326
—Skin Trouble, 402
—Weaklings, 516
—Does Eat Young, 726
—De-caired, 802
Rabies, 81
Railroad Conference, 761
Raisin Co. Sales Manager, 600
Raisin Growers Attacked, 358
Raisins, Throw Away, 67
—Are Prices Too High, 152
—Company Still in Business, 179
—Big Sale of, 182
—Drying Thompsons, 190
—Sulphuring Seedless, 223
—Grow Best, 318
—Imports Unprecedented, 325
Ranges, Use of, 777
Rats, Exterminate, 673, 834
—Losses Caused by, 676
Rattlesnake Oil, 327
Recipes—Almond Cheese, 60
—Apricot Desserts, 85
—Easy Pickles, 141
—Canning Pimientos and Peppers, 173, 237
—Sweet Pickles, 204, 236
—Peeling Peppers, 204
—Home Made Washing Fluid, 204
—Canning String Beans, 230
—Cherry Olives, 237
—Dish Cement, 260
—Dry Sweet Corn, 311
—Candied Figs, 341
—Mango Sweet Pickles, 341
—Syrup from Muscat Grapes, 420, 495
—Tomato Catsup, 421
—Canning Tomatoes Whole, 421
—Milk, 463
—Three-in-One Dessert, 463
—Dill Pickles, 495
—Cucumber Catsup, 495
—Beef Tallow for Shortening, 495
—Cane and Beet Syrup, 495
—Salmon Smoking, 535
—Soup and Chowder, 535
—Avocado Ice Cream, 619
—Home Made Soap, 619, 733, 800
—Mock Minicem, 620
—Pear Syrup, 620, 629
—Home Curing Beef, 659
—Pumpkin Pie, 685
—Condensed Milk Mayonnaise, 687
—Sweet Potato Waffles, 687
—Ripe Olives, 713
—Green Olives, 713
—Corned Beef, 713
—Sugar Cure for Meat, 713
—Walnut, 713
—Avocados, 734
—Candied Apples, 768, 833
—Tamales, 768
—Christmas Candy, 799

—Haked Oranges, 799
—Sweet Potato Pie, 799
—Curling Olives in Salt, 799
—Fruit Cakes, 800
—Oil Pickles, 833
Red Cross, 598
Red Spider, Summer Spray for, 40
—Loet Starch, 215
—on Berries, 223
Rhubarb, Transplanting, 59
Rice vs. Other Crops, 38
—Hamble in the Paddies, 91
—Broken, 214
—New Varieties, 235
—Experiment Station, 512
—Buy a Bag, 628, 754
—Cost of Production, 637
—Irrigation of, 676
—Growers Organizing, 694
—Fat More, 779
Roads—Highway Bonds, 70
—Better, 628
Roadside Stands, 726
Rodent Poisons, 726
Roses, al., 45
—Leaf Curling, 223
Rotation, 606
Rural Credits (See Credits)

Salt, Impure, Injures Hides, 19
Seale, San Jose, 459
—Cottony Cushion, 516
School Lands, 319
Seeds, Having Pumpkin and Onion, 637
Septic Tank, 497
Sheep, Profit from, 53
—Weed Destroyers, 293
—Emharzo on, 525
—Scab Mite Captured, 660
—Scab, 709
—Lice on, 742
Short Courses at Chaffey, 725
Shorthorns—Great Bull, 614
—Big Sale by Cebrian, 737
Slage, When to Cut Corn, 24
—Beet Tops for, 21
—Succulence from Sorghum, 22
—Sunflowers for, 59, 376, 681
—for Beef, 679
Silo, 116
—Advantage of, 193
—Filling Time, 225
—Inspect Before Filling, 228
—Paradise Protects, 258
—Filling, 576
Sink Outlet, Clearing, 74
Slugs, Remedy for, 565
Soil, Alkali Problems, 33
—Sulphuric Acid on, 39
—Survey of Ventura, 267
—and Crops, 506
—Fall Plowing Benefits, 668
—Restoring, 703, 765
—Farms Not Wearing Out, 775
Sorghum for Syrup, 49
—May Be Poisonous, 119
—Bulletin on Syrup, 403
—512
Sour Sap, 328
Spinach Dying, 402
Sprayer for Ventura County, 186
Spraying Demonstrations, 696
Spraying Pests, 601
Squash Bugs, 158
Squirrels, Poisoning, 158
Standard Apple Act, 69
Standardization—Apple Act, 69
—Violation of Vegetable Law, 71
—Shipping Point Inspection, 474, 568
—Lady Apples, 569
Star Thistle, Killing, 475
State Marks, 70
Stockyards Would Help, 38
—Why, 160
—And Small Stockman, 644
Strawberry, New, 97
—Culture, 631
Stump Land, 242
Stumps, Killing, 702
Sudan Grass, 657
Sugar, More, 324
Sugar Beet Growers Meet at Berkeley, 404
—Growers Would Have Mills, 497
—Topper for, 573
—Growers Meet at Santa Ana, 762
Sulphur as Fertilizer, 801
Sulphured Fruit, 102
Sunburn, Protect Trees from, 467
Sweet Potatoes, Harvesting, 100
Swingle in Cal., 128
Tanning, Various Methods, 552
—Not Always Profitable, 777
Tax, Single, 566
Taxes, 598
Ticks in Dog's Ears, 16
Tomatoes, Blight of, 59
—Pruning, 103
—Mexican Crop, 219
—Will Resist, 477
Tractors Save Money, 69
—Paper, 87
—Mutual Tractor Unit, 356
—Don'ts, 316
—Implements for, 490
—between Rows, 585

Tractor Short Course, 573, 829
Tractor Show, 126, 398
—National, 247, 283, 324, 347, 354, 429
—Transportation Costing Millions, 214
Transect, Success with, 757
Trees, Plugging with Poison, 541
—Burgery, 698
Trucks for Short Haul, 171
—on Eastern Farms, 188
—Time Savers, 284
Tuberculosis in Dairies, 104
—293
—Testing, 704
—(Check Upon, 773
Tuber Moth, 327
Turkeys, Troubles of, 25
—Barley for, 113
—Roup in, 201
—Leg Weakness, 531
—Sick, 621
—Thanksgiving, 668
—Fattening, 746
—Swelling, 747
Udder, Take Care of, 708
U. S. O. A. at Alhambra, 272
University—Trained Men from, 46

Vegetables, Winter, 544
Vegetation in Relation to Environment, 721
Veterinary—Cow Constipated, 19
—Garget, 47
—Cow's Eye Affected, 47
—Foxtail in Eye, 131
—Scour, 131, 777
—Fails to Breed, 131
—Bloody Milk, 131, 487, 841
—Ringbone, 131
—Caked Udder, 163
—Stringy Milk, 163
—Sow Has Enlarged Teat, 237
—Horse Has Sore Feet, 256
—Sorghum Poisoning, 326
—Corns on Horses Feet, 459
—Slobber in Horse, 459
—Eyes Watering, 459
—Rancid Butter, 487
—Sore Shoulder, 517
—Possibly Ringworm, 517
—Sick Cow, 587
—Rheumatism, 587
—Mouth Swells, 679
—Feed Proportions, 709
—Leaking Milk, 709, 765
—Horse Lame, 709
—Goat with Cough, 742
—Horse Coughs, 748
—Mineral Matter for Pigs, 743
—Period in Cow and Sow, 743
—Harmless Cysts, 771
—Heifer Tbin, 815
—Dog Has Skin Disease, 815
—Dehorning Wound, 841
Vinegar, Filtering, 190
Vineyard, Undetermined Pest of, 669
—Planting and Planting, 575, 755
—Protecting from Rabbits, 638
—School Room to, 792

Wage Schedule, 822
Walnuts Dying, 59
—and Markets, 280
—Grating, 328, 636
—Layering Seed, 402
—Prices Made, 501
—Codling Moth Control, 510
—Yield, 691
—In Central Valley, 728
—Poor Variety, 602
—Codling Moth on, 845
Water, Duty of, 93
—of Kings River Distribution, 456
—Alkali Impregnated, 822
—How Filling is Made, 826
Water Grass in Alfalfa, 326
Water Holes on the Desert, 515
Water Hyacinth, 113
Weed—Control, 59
—A New Pest, 161
—Killers for, 703
—Commissioners Committee on, 662
—After, 802
Wheat, Cost of Producing, 45
—No Change in Grades, 48
—Shortage in So. Africa, 57
—Pool Falls, 318
—In Uruguay, 339
—Seed, 403
—Australian, 635
White Fly, 97
Whitewash, 63
Wilson, Jas., 318
Windbreak, 248
—An Object Lesson, 469
—Cottonwood, 764
Wool Outlook not Bright, 70
—Consumption, Less, 81
—Mighty Shoddy, 150
—Drop in Consumption, 228
—More Shoddy, 242
—Consumption Declines, 332
—Plan to Move, 483
—Distributing Extra Profits, 553
—Growers Unite, 772

Zante Currant in Cal., 393

CITRUS MARKET

(Continued from Page 843.)

average for any before Christmas sales. Floridians have been selling in Southeastern states at around \$1.75. Practically none are being shipped from California now and most houses will remain closed until well toward the middle of January.

The lemon market is even more demoralized than it has been for months.

Shipments

Shipments of citrus fruits to date since November 1, 1920, Southern California: Oranges, 1,046 cars; lemons, 616; total, 1,662. To same date last season: Oranges, 2,946; lemons, 534; total, 3,480. From Central California to date this season: Oranges, 3,283; lemons, 27; total, 3,310. To same date last season: Oranges, 3,003; lemons, 87; total, 3,090. From Northern California to date this season: Oranges, 271; lemons, 2; total, 273. To same date last season: Oranges, 343; lemons, 15; total, 245.

AT THE AUCTIONS

December 15
New York: 11 or., 2 lem. Nav. 2.55-6.60, lem. 2.85-3.45, Navelencas, 4.55.
St. Louis: 7 Nav. 3.50-4.65.
Boston: 8 or., 2 lem. Nav. 2.05-5.40, lem. 2.85-3.40.
Cleveland: 7 or., 1 lem. Nav. 2.50-5.40, lem. 3.10-3.50.
Philadelphia: 2 or., 1 lem. Nav. 2.30-3.75, lem. 2.45-2.80.
Pittsburg: 1 or., 1 lem. Nav. 3.50, lem. 2.70-3.15.
Cincinnati: 1 Nav. 3.85-4.30.
Baltimore: 1 Nav. 3.60.

December 16
New York: 15 or., 3 lem. Nav. 2.75-6.60, lem. 2.50-3.50.
Boston: 2.65-3.75, lem. 2.40-3.35.
Philadelphia: 4 or., 2 lem. Nav. 1.40-4.75, lem. 2.00-2.55.
Pittsburg: 4 Nav. 3.15-4.10.
St. Louis: 7 Nav. 3.02-4.20.

December 17

New York: 11 or., 3 lem. Nav. 2.50-6.00, lem. 2.90-3.45.
St. Louis: 5 or., 1 lem. Nav. 3.15-3.85, lem. 3.00-3.85.
Boston: 8 or., 1 lem. Nav. 2.70-3.70, lem. 2.55-3.20.
Cleveland: 11 or., 1 lem. Nav. 2.45-4.75, lem. 2.95-3.45.
Philadelphia: 4 or., 1 lem. Nav. 1.30-4.00, lem. 2.45-2.90.
Pittsburg: 4 or., 1 lem. Nav. 2.25-4.75, lem. 2.50-3.80.
Baltimore: 1 or., 1 lem. Nav. 4.15, lem. 3.30-4.75.

December 20

New York: 35 or., 3 lem. Lower on Navel. Nav. 2.60-6.20, lem. 3.05-3.75.
St. Louis: 10 Nav. 2.30-3.45.
Boston: 17 or., 2 lem. Nav. 2.70-4.95, lem. 2.30-3.20.

December 21

New York: 20 or., 2 lem. Nav. 2.35-6.15, lem. 3.35-3.60.
Boston: 12 or., 2 lem. Nav. 2.50-3.80, lem. 2.65-3.55.
Philadelphia: 2 Nav. 2.70-3.50.
St. Louis: 9 Nav. 2.45-3.55.
Cleveland: 14 cars. Nav. 1.60-4.60, lem. 2.15-2.55.

CHRISTMAS SILLIES

Remember This. It's foolish to be extravagant at Christmas. If you really wish your friends to remember it, give them a cheap present.—Lippincott's.

Suspicious. Nurse: "Here is a little brother for Christmas."
Johnny: "Looks like some one had passed on the one they got last year."
—Judge.

Small Favors. Mrs. Meyser: "Could

you give me a little Christmas money, my dear?"

Mr. Meyser: "Certainly, my dear. About how little?"—Life

Anticipatory. Madge: "Are you going to announce your engagement at once?"

Marjorie: "Gracious, no! Not until after Christmas. I'm afraid it would scare off a lot of presents."—Judge.

POISON GASES AND FARM PESTS IN AUSTRALIA

The utilization of poison gases upon a large scale in the recent war has prompted in the lay mind many speculative suggestions as to its adoption upon a commercial basis as a means of attack upon many of the pests that inflict loss upon our primary industries. Long before the war, however, scientists had given close consideration to the question and fumigation was a firmly established practice for the destruction of various farm and orchard pests. The efficacy of various gases for killing rabbits has also been tested and the conclusion was arrived at that in Australia carbon bisulphide was for all practical purposes the most suitable. Its use, however, was not advocated for general adoption, being applicable only in certain circumstances. In this experimental work the vermin destruction board of Victoria has tested a number of gases and has reached the conclusion that where gas is applicable commercially, carbon bisulphide gives the best results.

WINDBREAK TREES

Director Hecke has received the following interesting letter from John Vallance, an experienced tree man at Oakland. Mr. Vallance says:

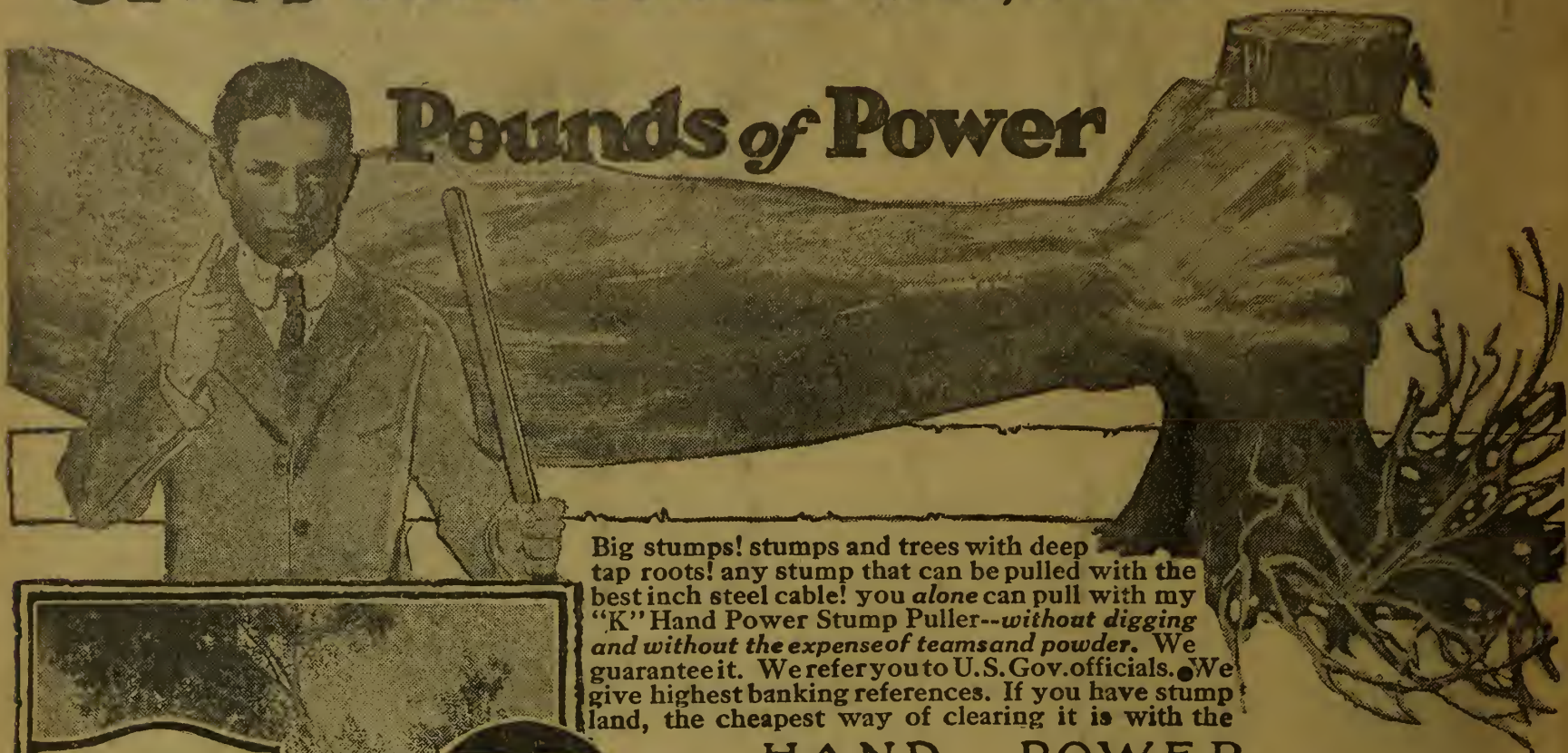
"I am just in receipt of your News Letter of recent date and have read with much interest your remarks upon 'Windbreaks.' For many years I have thought and written a great deal upon this subject, and whenever I could I recommended the Casuarina stricta for this purpose. It is very well adapted for the hot interior valleys as well as for the Coast regions; it is a wonderful tree of very fast growth and can be headed back to any part of the tree, as it is full of live eyes and will break away at any place where it is severed. Not only is it good for windbreaks, but in Australia, of which it is a native, it is wonderful how well cattle and sheep thrive upon its growth. I have never seen this tree affected with any kind of scale or insect pest.

"How many of the farms you notice, when driving along, have no shade for the horses, cows or hogs. There they stand in the hot, broiling sun, eking out a miserable existence, whereas if superior man would but plant a few trees how different their lives would be. Everything is 'protective' nowadays; then let's have protective windbreaks and protective shade for our stock."

The K Hand Stump Puller

Gives Your Hand 96,000

Pounds of Power



Big stumps! stumps and trees with deep tap roots! any stump that can be pulled with the best inch steel cable! you *alone* can pull with my "K" Hand Power Stump Puller--*without digging and without the expense of teams and powder*. We guarantee it. We refer you to U.S. Gov. officials. We give highest banking references. If you have stump land, the cheapest way of clearing it is with the

HAND POWER

K Stump Puller

How the "K" Pulls Biggest Stumps A Mechanical Wonder

The "K" works on the leverage principle. Made of finest steel—guaranteed of the ordinary lifting jack, except that against breakage. Weighs only 171 lbs.—the power is applied on a cog-wheel in-easily carried or hauled about on its own stand of a standard. 100 lbs. push on the truck wheels. Has two speeds—60 feet lever develops a 48-ton pull on the stump—per foot per minute for hauling in cable all an inch steel cable will hold. One or for small stumps—slow speed for man operates it alone—no teams heavy pulls. *Works equally well on hillsides and marshes where horses cannot work.*

Owners Praise It

H. Sinclair of the Dept. of the Interior, a U. S. Gov. official, writes: "The stump puller is a wonder." Ernest Thompson Seton, author and naturalist, declares the "K" "a great success."

Hundreds of owners write in, telling of pulling six- and seven-foot stumps, of pulling faster and pulling bigger stumps than by any other machine.

Special Offer We are making a special offer to get a "K" Stump Puller introduced in every neighborhood. Write us today for full information and for free book on Land Clearing and about our Wonderful Drag Saw.

The Fitzpatrick Products Corp.

Box 17
99 John St., New York
16th and Kansas Sts., San Francisco

Frank Hance, a one-armed farmer of Bowie, Md., pulling double silver maple 3 ft. 8 in. in diameter at the ground, with deep tap roots. This is an easy pull for the "K" as the cable can be hitched high and the leverage is consequently greater.



Tear Out and Mail Today
The Fitzpatrick Products Corp.
Box 17 99 John St., New York
Box 17 16th and Kansas Sts., San Francisco

H. G. Hunzicker of Foster, Wash., pulling a 24-inch fir stump with deep tap roots out of hard ground, without using powder or cutting any roots.

Send me full particulars on your special offer and your free booklet on Land Clearing.

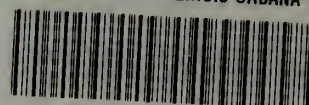
Name _____

Address _____





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